## APPENDIX A

Excerpts from *United States v. Philip Morris USA. Inc., et al.* — F. Supp. 2d —, No. 99-2496 (GK), 2006 WL 2380622, 2006 WL 2380648, 2006 WL 2380632, 2006 WL 2381449, 2006 WL 2380650, and 2006 WL 2380681 (D.D.C. Aug. 17, 2006).

[The Table of Contents from the opinion itself follows. Italicized headings appear in whole or in part in this appendix. Note that the page numbers in this table of contents do not correspond to the pages in this appendix. Footnotes have been omitted or moved to the text in brackets.]

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# I. INTRODUCTION

## A. Overview

On September 22, 1999, the United States brought this massive lawsuit against nine cigarette manufacturers of cigarettes and two tobacco-related trade organizations. The Government alleged that Defendants have violated, and continue to violate, the Racketeer Influenced and Corrupt Organizations Act ("RICO"), 18 U.S.C. §§ 1961-1968, by engaging in a lengthy, unlawful conspiracy to deceive the American public about the health effects of smoking and environmental tobacco smoke, the addictiveness of nicotine, the health benefits from low tar, "light" cigarettes, and their manipulation of the design and composition of cigarettes in order to sustain nicotine addiction. As Justice O'Connor noted in Food and Drug Administration, et al. v. Brown & Williamson Tobacco Corporation, et al., 529 U.S. 120, 125 (2000), "[t]his case involves one of the most troubling public health problems facing our Nation today: the thousands of premature deaths that occur each year because of tobacco use."

In particular, the Government has argued that, for approximately fifty years, the Defendants have falsely and fraudulently denied: (1) that smoking causes lung cancer and emphysema (also known as chronic obstructive pulmonary disease ("COPD")), as well as many other types of cancer; (2) that environmental tobacco smoke causes lung cancer and endangers the respiratory and auditory systems of children; (3) that nicotine is a highly addictive drug which they manipulated in order to sustain addiction; (4) that they marketed and promoted low tar/light cigarettes as less harmful when in fact they were not; (5) that they intentionally marketed to young people under the age of twenty-one and denied doing so; and (6) that they concealed evidence, destroyed documents, and abused the

attorney-client privilege to prevent the public from knowing about the dangers of smoking and to protect the industry from adverse litigation results.

The following voluminous Findings of Fact demonstrate that there is overwhelming evidence to support most of the Government's allegations. As the Conclusions of Law explain in great detail, the Government has established that Defendants (1) have conspired together to violate the substantive provisions of RICO, pursuant to 18 U.S.C. § 1962 (d), and (2) have in fact violated those provisions of the statute, pursuant to 18 U.S.C. § 1962 (c). Accordingly, the Court is entering a Final Judgment and Remedial Order which seeks to prevent and restrain any such violations of RICO in the future.

In particular, the Court is enjoining Defendants from further use of deceptive brand descriptors which implicitly or explicitly convey to the smoker and potential smoker that they are less hazardous to health than full flavor cigarettes, including the popular descriptors "low tar," "light," "ultra light," "mild," and "natural." The Court is also ordering Defendants to issue corrective statements in major newspapers, on the three leading television networks, on cigarette "onserts," and in retail displays, regarding (1) the adverse health effects of smoking; (2) the addictiveness of smoking and nicotine; (3) the lack of any significant health benefit from smoking "low tar," "light," "ultra light," "mild," and "natural" cigarettes; (4) Defendants' manipulation of cigarette design and composition to ensure optimum nicotine delivery; and (5) the adverse health effects of exposure to secondhand smoke.

Finally, the Court is ordering Defendants to disclose their disaggregated marketing data to the Government in the same form and on the same schedule which they now follow in disclosing this material to the Federal Trade Commission. All such data shall be deemed "confidential" and "highly

sensitive trade secret information" subject to the protective Orders which have long been in place in this litigation.

Unfortunately, a number of significant remedies proposed by the Government could not be considered by the Court because of a ruling by the Court of Appeals in United States v. Philip Morris, USA, Inc., et al., 396 F.3d 1196 (D.C. Cir. 2005). In that opinion, the Court held that, because the RICO statute allows only forward-looking remedies to prevent and restrain violations of the Act, and does not allow backward-looking remedies, disgorgement (i.e., forfeiture of ill-gotten gains from past conduct) is not a permissible remedy.

Applying this same legal standard, as it is bound to do, this Court was also precluded from considering other remedies proposed by the Government, such as a comprehensive smoker cessation program to help those addicted to nicotine fight their habit, a counter marketing program run by an independent entity to combat Defendants' seductive appeals to the youth market; and a schedule of monetary penalties for failing to meet pre-set goals for reducing the incidence of youth smoking.

The seven-year history of this extraordinarily complex case involved the exchange of millions of documents, the entry of more than 1,000 Orders, and a trial which lasted approximately nine months with 84 witnesses testifying in open court. Those statistics, and the mountains of paper and millions of dollars of billable lawyer hours they reflect, should not, however, obscure what this case is really about. It is about an industry, and in particular these Defendants, that survives, and profits, from selling a highly addictive product which causes diseases that lead to a staggering number of deaths per year, an immeasurable amount of human suffering and economic loss, and a profound burden on our national health care system. Defendants have known many of these facts for at least 50 years or more. Despite that knowledge, they have consistently, repeatedly, and with

enormous skill and sophistication, denied these facts to the public, to the Government, and to the public health community. Moreover, in order to sustain the economic viability of their companies, Defendants have denied that they marketed and advertised their products to children under the age of eighteen and to young people between the ages of eighteen and twenty-one in order to ensure an adequate supply of "replacement smokers," as older ones fall by the wayside through death, illness, or cessation of smoking. In short, Defendants have marketed and sold their lethal product with zeal, with deception, with a single-minded focus on their financial success, and without regard for the human tragedy or social costs that success exacted.

Finally, a word must be said about the role of lawyers in this fifty-year history of deceiving smokers, potential smokers, and the American public about the hazards of smoking and second hand smoke, and the addictiveness of nicotine. At every stage, lawyers played an absolutely central role in the creation and perpetuation of the Enterprise and the implementation of its fraudulent schemes. They devised and coordinated both national and international strategy; they directed scientists as to what research they should and should not undertake; they vetted scientific research papers and reports as well as public relations materials to ensure that the interests of the Enterprise would be protected; they identified "friendly" scientific witnesses, subsidized them with grants from the Center for Tobacco Research and the Center for Indoor Air Research, paid them enormous fees, and often hid the relationship between those witnesses and the industry; and they devised and carried out document destruction policies and took shelter behind baseless assertions of the attorney client privilege.

What a sad and disquieting chapter in the history of an honorable and often courageous profession.

### B. Preliminary Guidance for the Reader

Courts must decide every case that walks in the courthouse door, even when it presents the kind of jurisprudential, public policy, evidentiary, and case management problems inherent in this litigation. From the day this lawsuit was filed, it has garnered much media attention. Recognizing this, the Court hopes to assist the intrepid reader with her task by explaining certain principles and procedures that it has followed.

First and foremost, the Court has decided that, as fact finder, its obligation is to present to the appellate courts, the parties, and the public all the relevant facts which have been proven by a preponderance of this massive body of evidence consisting of testimony (including written direct examination, in-court cross examination, and re-direct examination of witnesses in this trial, as well as deposition and trial testimony of witnesses in related cases), and thousands of exhibits. By virtue of this procedure, the appellate courts will have before them all the factual determinations they need to decide the numerous legal issues which will unquestionably be raised.

Certain consequences flow from the decision to present the most complete factual picture possible. Even though this Opinion is unusually long and detailed, on occasion, there are very few facts presented on important issues and questions leap off the page to the reader. In those instances, it should be understood that the parties presented no further evidence and the Court has stated whatever Findings can be appropriately made on whatever evidence does exist; the record must remain bare as to the unanswered questions and the gaps in the evidence. On other occasions, some individual factual findings may appear unclear or inconsistent with other factual findings. In those instances, the Conclusion to that Section will contain the Court's final Findings, and its reasons for reaching them.

Second, in an effort to make the substance of the Opinion as accessible as possible, almost every Section of the Opinion in both the Findings of Fact and the Conclusions of Law contains an Introduction that provides an overview of the subject matter to be covered and a Conclusion that summarizes what has been found in that Section; the extensive detailed Findings between the Introduction and the Conclusion provide the factual "meat" between the two. In a few instances, Sections are so brief or so self-evident that no Introduction or Conclusion was necessary. Finally, Appendix I contains a Glossary of frequently used terms and concepts; Appendix II contains the relevant Surgeon Generals' Reports and their major findings; and Appendix III contains all the Racketeering Acts charged by the Government.

Third, every effort has been made to make each Section self-contained so that it is complete and understandable in and of itself. Thus, a reader who is interested in only a particular topic, such as youth marketing, can pick up that Section, and obtain the information he needs without having to read the entire Findings of Fact. However, it has been virtually impossible to totally segregate the Findings presented in each Section. At times, the historical data, the scientific data, and the relevant documentary materials overlap subject matter areas and therefore must be repeated in order to ensure that a Section can be read and understood by itself. By the same token, many individuals are identified numerous times in the text in an effort to make it easier for the reader to follow the narrative rather than having to search through many pages to re-familiarize himself with a person's position within either a Government agency or one of the Defendant corporations.

Fourth, specific record citations have been given whenever possible. Many times an individual Finding of Fact is either a direct quote from a witness's written or oral testimony or is taken directly from a proposed finding submitted by one of the parties and supported by the record

and proved by at least a preponderance of the evidence. Vast amounts of testimony were given -- by eminent and respected scientists, government officials and corporate executives. Only the portions of their testimony specifically cited in the Opinion were affirmatively credited and relied on by the Court. The Court has made it very clear when specific evidence referred to is being rejected or discredited.

Fifth, parties should understand that every Exhibit and Prior Testimony cited in the Findings of Fact is deemed admitted into evidence. A formal Order, accompanying this Opinion, will be entered listing those hundreds (perhaps thousands) of Exhibit numbers and Prior Testimonies, overruling any objections made thereto.

Sixth, several observations need be made about witness bias and credibility. For the most part, each individual Chapter in the Findings of Fact explains why certain facts were found, why certain witnesses were credited, and why the testimony of certain witnesses was either discredited as just plain not believable or, in most instances, outweighed by other more convincing and credible evidence.

Most of the witnesses whose testimony was most vehemently attacked by the Defendants (such as Dr. David R. Kessler, Dr. Michael C. Fiore, Dr. Jeffrey Wigand, and Dr. Cheryl Healton) were only relied upon for undisputed or relatively insignificant background facts (as with Dr. Kessler and Dr. Wigand), or testified about remedies which this Court could not consider on the merits under the Court of Appeals decision discussed above (as in the case of Dr. Fiore and Dr. Healton).

Much of the Defendants' criticisms of Government witnesses focused on the fact that these witnesses had been long-time, devoted members of "the public health community." To suggest that they were presenting inaccurate, untruthful, or unreliable testimony because they had spent their

professional lives trying to improve the public health of this country is patently absurd. It is equivalent to arguing that all the Defendants' witnesses were biased, inaccurate, untruthful, and unreliable because the great majority of them had earned enormous amounts of money working and/or consulting for Defendants and other large corporations, and therefore were so devoted to the cause of corporate America that nothing they testified to, even though presented under oath in a court of law, should be believed. Such simplistic attacks on the credibility of the sophisticated and knowledgeable witnesses who testified in this case are foolish.

All of this is not to deny that there were significant differences in the overall qualifications of the Government's witnesses and the Defendants' witnesses. There were. The Government's witnesses, viewed as a whole, were far more experienced, credentialed, and active in the area of smoking and health, whatever their particular area of specialty, than were the Defendants'. Many of the Government experts had participated extensively, over many years, in the long and drawn-out process of ascertaining the consensus of scientific opinions embodied in each Surgeon General's Report. Virtually every one had taught at a well-regarded academic institution and written numerous peer-reviewed articles in their particular area of specialty. Many of the Government witnesses continued "hands on," clinical work in their fields despite heavy commitments for research, writing, teaching, and lecturing to their peers.

The Defendants' witnesses were obviously well educated in their areas of specialty. Indeed, as was mentioned on many occasions, Defendants even presented the testimony of an impressive Nobel Prize winner. However, rarely did these witnesses have the depth and breadth of experience of the Government witnesses. Many had worked only in large corporations, and many for only one or two such employers. Many -- although not all -- had written relatively few peer-reviewed articles.

Many of the highest paid experts of Defendants, while well credentialed in their particular fields, such as economics, presented relatively narrow testimony tailored to the particular problem or issue they were retained to opine on for purposes of this litigation. A few of Defendants' experts had done virtually no individual research and written virtually no peer-reviewed articles, and a few were unfamiliar with the relevant facts and/or the major scientific literature on the issue about which they testified.

While the testimony of each person -- expert or fact witness -- was evaluated on its own merits, there can be no denying that, as a group, the Government's witnesses were far more knowledgeable, experienced, and active in their respective fields.

Finally, despite the length and detail of the Findings of Fact, the evidentiary picture must be viewed in its totality in order to fully appreciate how massive the case is against the Defendants, how irresponsible their actions have been, and how heedless they have been of the public welfare and the suffering caused by the cigarettes they sell.

## II. PROCEDURAL HISTORY

Plaintiff, the United States of America ("the Government") brought this suit in 1999 against eleven tobacco-related entities ("Defendants") to recover health care expenditures the Government has paid or will pay to treat tobacco-related illnesses allegedly caused by Defendants' unlawful conduct. [The eleven Defendants were: Philip Morris, Inc., now Philip Morris USA, Inc. ("Philip Morris"), R.J. Reynolds Tobacco Co., now Reynolds American ("R.J. Reynolds"), Brown & Williamson Tobacco Co., now part of Reynolds American ("Brown & Williamson"), Lorillard Tobacco Company ("Lorillard"), The Liggett Group, Inc. ("Liggett"), American Tobacco Co., merged with Brown & Williamson which is now part of Reynolds American ("American Tobacco"),

Philip Morris Cos., now Altria (“Altria”), B.A.T. Industries p.l.c. ("BAT Ind."), now part of BATCo, British American Tobacco (Investments) Ltd. (“BATCo”), The Council for Tobacco Research--U.S.A., Inc. ("CTR"), and The Tobacco Institute, Inc. ("TI"). The latter two entities do not manufacture or sell tobacco products, but are alleged to be co-conspirators in Defendants' tortious activities. BAT Ind. has been dismissed for lack of personal jurisdiction. All Defendants but Liggett joined together in common defense (the “Joint Defendants”). In 2003, the Court granted the Motion of British American Tobacco Australian Services, Ltd. (“BATAS”) to intervene for the limited purpose of asserting and protecting its interests in litigation documents.]

* * * *

## IV. THE DEFENDANTS ARE ENGAGED IN AND THEIR ACTIVITIES AFFECT INTERSTATE AND FOREIGN COMMERCE

486. Defendants in this case at all relevant times have been and are engaged in interstate and foreign commerce and their activities have affected, and continue to affect, interstate and foreign commerce within the meaning of 18 U.S.C. § 1962(c) and (d). Regarding Defendant-members of this RICO enterprise, the Court finds the following facts.

### A. Philip Morris Companies

487. Defendant Philip Morris Companies has engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) during the period from July 1, 1985 to December 10, 2002. United States v. Philip Morris, No. 1:99-CV-2496, Order #280 at ¶ 7 (D.D.C. Dec. 11, 2002); United States v. Philip Morris, 316 F. Supp.2d 19, 26 (D.D.C. 2004).

**B. Philip Morris**

488. Defendant Philip Morris has engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) during the period from 1953 to December 10, 2002. United States v. Philip Morris, No. 1:99-CV-2496, Order #280 at ¶ 1 (D.D.C. Dec.11, 2002).

**C. R.J. Reynolds**

489. Defendant RJR has engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) during the period from 1953 to December 10, 2002. United States v. Philip Morris, No. 1:99-CV-2496, Order #280 at ¶ 2 (D.D.C. Dec. 11, 2002).

**D. Liggett**

490. Defendant Liggett has engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) during the period from 1990 through January 29, 2003. Liggett's predecessors in interest engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) from 1953 until 1990. United States v. Philip Morris, No. 1:99-CV-2496, Order #308 at ¶ 1 (D.D.C. Jan. 31, 2003); United States v. Philip Morris, 316 F. Supp.2d 19, 26 (D.D.C. 2004).

**E. Lorillard**

491. Defendant Lorillard has engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) during the period from 1953 to December 10, 2002. United States v. Philip Morris, No. 1:99-CV-2496, Order #208 at ¶ 5 (D.D.C. Dec. 11, 2002).

**F. BATCo**

492. Defendant BATCo has engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) during the period from 1953 to December 10, 2002. United States v. Philip Morris, No. 1:99-CV-2496, Order #280 at ¶ 6 (D.D.C. Dec. 11, 2002).

**G. Brown & Williamson**

493. Defendant B&W has engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) during the period from 1953 to December 10, 2002. United States v. Philip Morris, No. 1:99-CV-2496, Order #280 at ¶ 3 (D.D.C. Dec. 11, 2002).

**H. American**

494. Defendant American, predecessor to Defendant B&W, engaged in and conducted activities affecting interstate commerce within the meaning of 18 U.S.C. § 1962(c) and (d) during the period from 1953 to February 28, 1995. United States v. Philip Morris, No. 1:99-CV-2496, Order #280 at ¶ 4 (D.D.C. Dec. 11, 2002).

**I. Tobacco Institute**

495. Defendant Tobacco Institute admits that it was a not-for-profit corporation and tobacco industry association formed in 1958 under the laws of the State of New York, and that, at one time, its principal place of business was located in Washington, D.C. United States v. Philip Morris, No. 1:99-CV-2496, Answers, Defenses and Jury Demand of The Tobacco Institute, Inc. at 16 (D.D.C. Oct. 30, 2000).

496. From at least 1959 through 1995, Defendants American, B&W, Liggett, Lorillard,

Philip Morris, and RJR were among the member organizations of the Tobacco Institute, albeit for varying periods of time, who, as a part of their membership obligation, contributed to the Tobacco Institute's funding. TIFL0020285-0311 at 0297-0305 (JD 080429).

497. From 1958 until 1999, Defendants Philip Morris, RJR, American, B&W, Lorillard, and Liggett declared contributions of over $618.4 million to the Tobacco Institute, which were processed through the interstate banking system. (no bates) (US 89561 at 97-103); (no bates) (US 75925 at 54-56); (no bates) (US 89561 at 40-44); (no bates) (US 75555 at 71-73); (no bates) (US 89561 at 132-135).

498. For the period 1980 through 1994, the Tobacco Institute spent more than $169 million for public relations and advertising. TIFL0020285-0311 at 0298 (JD 080429).

499. The Tobacco Institute, its agents, or former employees have made numerous public statements or admissions of the interstate nature and scope of its business. For example, on January 12, 2005, Brennan Dawson, former Senior Vice President for Public Affairs, testified at trial in this case that she made public statements, on behalf of the Tobacco Institute, concerning smoking and health issues on television programs, including CNN's Newsmaker Sunday, CNN's Crossfire, Good Morning America, and CBS News Night Watch, and that she intended that millions of American television viewers believe such public statements. Dawson TT, 1/12/05, 9925:17-9930:16.

500. During trial, Brennan Dawson also testified that many of the Tobacco Institute's press releases and other public statements were disseminated to the public via newspapers and magazines. Id. at 9928:19-9929:10.

501. On February 25, 1994, the Tobacco Institute's Senior Vice President of

Administration, William Adams, and its Senior Vice President for State Activities, Kurt L. Malmgren, mailed, out of state, individual letters to: Brown & Williamson Senior Vice President Ernest Pepples (authored by Mr. Malgrem); Philip Morris President and CEO William Campbell (authored by Mr. Adams); and Lorillard Senior Vice President M. Alfred Peterson (authored by Mr. Adams), requesting their company's respective contribution of at least $100,000 to the Michigan Citizens for Fair Taxes to fight a 1994 ballot initiative, and requesting that each of the companies wire its contribution to the Tobacco Institute's Washington, D.C. bank account. TI16370185-0402 at 0366, 0368, 0369 (US 21258).

502. On August 31, 1994, William Adams, Senior Vice President of Administration of the Tobacco Institute, mailed, out of state, individual letters to: Philip Morris President William Campbell; Reynolds Executive Vice President David Anderson; Brown & Williamson Senior Vice President Ernest Pepples; Lorillard Senior Vice President M. Alfred Peterson; and American Vice President John Hager, advising them each that the Tobacco Institute Management Committee had approved additional lobbying expenditures for a state initiative and requesting their respective company's payment. TI16370185-0402 at 0340-0346 (US 21258).

**J. <u>TIRC/CTR</u>**

503. Defendant TIRC was formed in January 1954 by several entities, including Defendants Philip Morris, RJR, B&W, American, and Lorillard. TIRC had its principal place of business in New York City, New York. In 1964, TIRC changed its name to The Council for Tobacco Research -- U.S.A. In 1971, the name was changed to The Council for Tobacco Research -- U.S.A., Inc., when CTR incorporated as a not-for-profit corporation organized under the laws of the State of New York. <u>United States v. Philip Morris</u>, No. 1:99-CV-2496, Answer

of CTR at 4, 6 (D.D.C. Oct. 30, 2000).

504. From 1954 to 1999, Defendants Philip Morris, American, B&W, Liggett, Lorillard, and RJR contributed a total of approximately $505.4 million to CTR, which payments were processed through the interstate banking system. From the period 1954 through 1999, member contributions to the CTR General Fund, processed through the interstate banking system, totaled over $470.2 million. DXA0630917-1033 at 1017-1023 (US 75927).

505. Through 1997, CTR funded 1,657 research grants-in-aid, research contracts, and scientific conferences, totaling approximately $317 million, in the United States and abroad. McAllister WD, 53:3-54:3; 70000302-0618 at 0308 (JD 090039).

506. From about 1966 to 1991, CTR also administered the funding of certain CTR Special Projects, which were separate and distinct from CTR's grant in aid program. CTR administered Special Project funding through a separate checking account, and received direction and funding from sponsor companies, including Defendants Philip Morris Companies, Philip Morris, American, B&W, Liggett, Lorillard, and RJR and/or their attorneys. CTR also sent correspondence and funds to Special Project recipients and/or their affiliated institutions through the United States Mail. For the period 1966 through 1990, CTR members contributed over $18.2 million toward the funding of these Special Projects. United States v. Philip Morris, No. 1:99-CV-2496, Answer of CTR at 9 (D.D.C. Oct. 30, 2000); McAllister WD, 159:8-164:5; DXA0630917-1033 at 1024 (US 75927).

507. CTR provided funding to Special Projects recipients via checks processed through the interstate banking system and delivered via the United States Mail. McAllister PD, United States v. Philip Morris, 5/24/02, 98:3-99:2, 102:13-22, 103:7-19.

508. According to Harmon McAllister, CTR's 30(b)(6) witness on the subject of mailings, CTR mailed its Annual Reports through the United States mails. Id. at 65:11-66:21.

## V. DEFENDANTS DEVISED AND EXECUTED A SCHEME TO DEFRAUD CONSUMERS AND POTENTIAL CONSUMERS OF CIGARETTES IN MOST, BUT NOT ALL, OF THE AREAS ALLEGED BY THE GOVERNMENT

### A. Defendants Have Falsely Denied, Distorted and Minimized the Significant Adverse Health Consequences of Smoking for Decades

509. Cigarette smoking causes disease, suffering, and death. Despite internal recognition of this fact, Defendants have publicly denied, distorted, and minimized the hazards of smoking for decades. The scientific and medical community's knowledge of the relationship of smoking and disease evolved through the 1950s and achieved consensus in 1964. However, even after 1964, Defendants continued to deny both the existence of such consensus and the overwhelming evidence on which it was based.

#### 1. Cigarette Smoking Causes Disease

510. Cigarette smoking and exposure to secondhand smoke (also known as environmental tobacco smoke or "ETS") kills nearly 440,000 Americans every year. The annual number of deaths due to cigarette smoking is substantially greater than the combined annual number of deaths due to illegal drug use, alcohol consumption, automobile accidents, fires, homicides, suicides, and AIDS. Approximately one out of every five deaths that occur in the United States is caused by cigarette smoking. TLT0960104-0112 at 0104 (US 87047) (Centers for Disease Control and Prevention, Smoking-Attributable Mortality and Years of Potential Life Lost -- United States, 1994, MMWR, 46(20) (1997)); VXA1000001-0604 (US 77217) (Thun M., Myers D., Day-Lally C., Namboodiri M., Calle E., Flanders W.D., Adams S., Heath Jr. C., Age

and the Exposure-Response Relationships Between Cigarette Smoking and Premature Death in Cancer Prevention Study II, Chapter 5, Smoking and Tobacco Control Monograph 8: Changes in Cigarette-Related Disease Risks and Their Implications for Prevention and Control, National Institutes for Health – National Cancer Institute, p. 383-476 (1997)); TLT0930001-0949 (US 88621) (2004 Surgeon General Report).

511. Cigarette smoke contains carbon monoxide, nitrogen oxides, cyanide, benzopyrenes, radioactive polonium, arsenic, aldehydes, nitrosamines, numerous toxins, and other human carcinogens. Samet WD, 22:15-23:10. Carcinogens and toxins are absorbed into the bloodstream when cigarette smoke is inhaled. Samet WD, 23:11-24:3.

512. Cigarette smoking causes lung cancer. VXA1601844-2232 at 1986 (US 64057) (1964 Surgeon General Report). Lung cancer kills 160,000 Americans each year, and 90% of all lung cancer cases are caused by cigarette smoking. The five-year survival rate for lung cancer is only 14%. Samet WD, 71:18-22, 80:1-3; Carmona WD, 1:18-21.

513. The risk of developing lung cancer increases with an increase in smoking. Individuals smoking ten to twenty cigarettes per day have a ten-fold increased risk and individuals smoking forty or more cigarettes per day -- two packs and over -- have more than a twenty-fold increased risk of developing lung cancer. This rate of risk is referred to as "relative risk." Samet WD, 64:17-67:19; (no bates) (US 17141).

514. Cigarette smoking, including exposure to secondhand smoke, causes cardiovascular disease, including myocardial infarction (commonly known as "heart attack"), coronary heart disease ("CHD") and atherosclerosis. CHD refers to diseases which affect the blood vessels of the heart. CHD can cause a deprivation of oxygen to the heart, and thus, cause

heart attacks. Atherosclerosis refers to the development of plaque on the arteries, which contributes to the blocking of blood flow to the heart. Samet WD, 107:18-118:21; (no bates) (US 17165); (no bates) (US 17158); (no bates) (US 17134); (no bates) (US 17159); (no bates) (US 17160); (no bates) (US 17204).

515. Cigarette smoking causes chronic obstructive pulmonary disease ("COPD"). Samet WD, 81:4-90:21.

516. COPD, previously referred to as "emphysema" or "chronic bronchitis," was found to be causally related to smoking in 1964. Id. at 81:10-83:14; VXA1601844-2232 at 1986 (US 64057) (1964 Surgeon General Report).

517. Cigarette smoking causes bladder cancer. Samet WD, 90:22-91:4; 97:5-98:17; (no bates) (US 17103).

518. Cigarette smoking causes cerebrovascular disease. Samet WD, 118:21-120:18, 121:15-122:14.

519. Cigarette smoking causes esophageal cancer. Id. at 90:22-91:4, 94:5-95:13. Cigarette smoking causes kidney cancer. Id. at 90:22-91:4, 98:18-101:4.

520. Cigarette smoking causes laryngeal cancer. Id. at 91:5-92:21.

521. Cigarette smoking causes oral cancer. Id. at 92:22-94:4.

522. Cigarette smoking causes pancreatic cancer. Id. at 90:22-91:4, 95:14-97:4.

523. Cigarette smoking causes peptic ulcer disease. Id. at 125:10-127:3.

524. Cigarette smoking causes aortic aneurysm. Id. at 122:15-125:9.

525. Cigarette smoking causes cataracts. Id. at 127:4-128:8.

526. Cigarette smoking causes low bone density in post-menopausal women. Id. at

128:9-129:22.

527. Cigarette smoking causes reduced fertility. Id. at 130:12-131:23.

528. Cigarette smoking causes adverse reproductive outcomes, including pre-mature rupture of the membranes, placenta previa, placental abruption, pre-term delivery and shortened gestation, fetal growth restriction and low birth weight. Id. at 130:20-132:9.

529. Cigarette smoking causes acute myeloid leukemia. Id. at 101:5-102:23.

530. Cigarette smoking causes stomach cancer. Id. at 103:1-104:9.

531. Cigarette smoking causes uterine and cervical cancer. Id. at 104:10-105:15.

532. Cigarette smoking causes liver cancer. Id. at 105:16-106:9.

533. Cigarette smoking causes diminished health status. Id. at 132:15-135:20.

### 2. Scientific Research on Lung Cancer up to December 1953

#### a. Scientists Investigating the Rise in the Incidence of Lung Cancer Linked Smoking and Disease before 1953

534. Dr. Allan M. Brandt was accepted as an expert in the history of science and medicine without objection from Defendants. Brandt TT, 9/27/04, 642:19-643:3.

535. Dr. Brandt is the Amalie Moses Kass Professor of the History of Medicine at Harvard Medical School and Professor of the History of Science at Harvard University, where he is the chair of the Department of the History of Science. Brandt WD, 1:3-6. Dr. Brandt has published extensively in the field of the history of science and medicine for a period of almost three decades. He received a Pulitzer Prize nomination for one of his works, and, during the past decade, has published more than 15 peer-reviewed essays and articles on the history of cigarette smoking. Id. at 3:17-15:3.

536. In the course of his historical investigation of tobacco, Dr. Brandt has reviewed and analyzed the archival materials from the 1964 Surgeon General's Advisory Committee at the National Archives, and numerous additional archival collections, including those of Harvard University (William Cochran); the Countway Library at Harvard Medical School (J. McKeen Cattell), the University of Maine (C.C. Little); Washington University, St. Louis (Evarts Graham); the Wisconsin Historical Society (Bruce Barton, John W. Hill, Robert Lasch, M.V. O'Shea); the Alan Mason Chesney Medical Archives at the Johns Hopkins Medical Institutions (Lewis Robbins); University of Washington, Seattle (Warren Magnuson); the Library of Congress (Edward Bernays, Harvey Wiley); Yale University (Chester Bliss, Lester Savage); Duke University (the John W. Hartman Center for Sales, Advertising and Marketing History); the Smithsonian (NC Ayer Collection, The Warshaw Collection of Business Americana); the National Library of Medicine (Stanhope Bayne-Jones); and the National Archives (The Surgeon General's Advisory Committee). He has also reviewed internal documents of Defendants, including correspondence, reports, and memoranda on tobacco industry activities and programs. Id. at 26:14-28:13.

537. Much of the Government's evidence relating to the history of scientific research on lung cancer relies on Dr. Brandt's testimony. Defendants did not call any expert witnesses or present any testimony in this area.

538. By the middle of the twentieth century, physicians and public health officials in the United States had widely noted an alarming increase in the number of cases of lung cancer. Virtually unknown as a cause of death in 1900, by 1935 there were an estimated 4,000 deaths annually attributed to lung cancer. A decade later, the estimate of deaths attributed to lung

cancer had nearly tripled. VXA1601844-2232 at 1986 (US 64057) (1964 Surgeon General Report); Brandt WD, 31:16-32:1.

539. The rise in lung cancer had followed the dramatic increase in cigarette consumption which began early in the twentieth century. Annual per capita consumption of cigarettes in 1900 stood at approximately forty-nine cigarettes; by 1930, annual per capita consumption was over 1,300; by 1950, it was over 3,000. Even though the increases in lung cancer cases and deaths substantially lagged behind the increase in cigarette use, the apparent association led to considerable speculation about what, if any, relationship existed between the two. VXA1601844-2232 at 1895-1898 (US 64057) (1964 Surgeon General Report); Brandt WD, 32:2-17; Samet TT, 9/29/04, 01031:13-01033:25.

540. The dangers of smoking, including its connection to lung cancer, began to attract the more concerted attention of scientists in the 1920s, when researchers began to focus on the specific health consequences of smoking. Brandt WD, 32:18-34:13.

541. As early as 1928, researchers conducting a large field study associated heavy smoking with cancer. 2060544267-4274 (US 39010) (Lombard, Herbert L. and Carl R. Doering, Cancer Studies in Massachusetts: Habits, Characteristics and Environment of Individuals With and Without Cancer, New England Journal of Medicine, 196.10: 481-487 (1928)); Brandt WD, 33:14-34:13.

542. In 1931, Frederick L. Hoffman, a well-known statistician for the Prudential Insurance Company, linked smoking with cancer, although the research left him with lingering methodological questions about representativeness, sample size, and the construction of control groups. VXA2510202-0219 (US 63597) (Hoffman, Frederick L., Cancer and Smoking Habits,

Annals of Surgery, 93: 50-67 (1931)); Brandt WD, 33:21-34:4.

543. In 1938, a population biologist and biometrician from Johns Hopkins, Raymond Pearl, published one of the first significant statistical analyses of the health impact of smoking. Pearl's conclusion was that individuals who smoked could expect shorter lives. 503285883-5884 (US 20714) (Pearl, Raymond, Tobacco Smoking and Longevity, Science, 87:2253 (1938)); Brandt WD, 34:5-13.

544. Early research efforts led to publication in Germany in 1939 of the first case control study that showed the connection between smoking and lung cancer. VXA2510202-0219 (US 63597) (Hoffman, Frederick L., Cancer and Smoking Habits, Annals of Surgery, 93:67 (1931)); VXA251-0239 (US 63595) (F. H. Muller, Abuse of Tobacco and Carcinoma of the Lungs, Journal of the American Medical Association (translation of the original from Zeitschrift fur Krebsforschung, Berlin) (1939)); Brandt WD, 34:5-36:7.

545. In the 1930s, chest surgeons such as Alton Oschner and Richard Overholt published observations that the patients they saw with advanced lung malignancies were typically smokers. Oschner and another surgeon, DeBakey concluded that: "In our opinion the increase in smoking with the universal custom of inhaling is probably a responsible factor, as the inhaled smoke, constantly repeated over a long period of time, undoubtedly is a source of chronic irritation to the bronchial mucosa." 85868807-8823 at 8807 (US 63596) (Oschner, Alton, DeBakey, Michael, Primary Pulmonary Malignancy, Surgery, Gynecology and Obstetrics, 68:435-45 (1939)); Brandt WD, 34:14-36:7.

546. By the end of the 1940s, more evidence linking smoking to disease began to appear. Beginning in 1948, under the auspices of the Medical Research Council, a unit of the

recently created National Health Service in the United Kingdom, Bradford Hill and Sir Richard Doll conducted a study to investigate the rising incidence of lung cancer. Following World War I, Hill had become one of the most distinguished medical statisticians in Great Britain. Doll, a physician, also possessed sophisticated training in statistics and epidemiologic methods. They realized that questions concerning the causality of systemic chronic diseases would not readily succumb to experimental laboratory investigation (unlike the study of infectious disease where specific causality was important). TIMN0145510-5519 at 5510, 5518 (US 62855) (Doll, Richard, and A. Bradford Hill, Smoking and Carcinoma of the Lung: Preliminary Report, British Medical Journal (1950)); Brandt WD, 32:18-34:13; 40:19-44:2.

547. From their data from lung cancer patients and a control group in late 1948 and early 1949, it became clear to Doll and Hill that cigarettes were the crucial factor in the rise of lung cancer. With data on almost 650 lung cancer patients, they concluded that “smoking is an important factor in the cause of carcinoma of the lung.” The findings were impressive: among the 647 lung cancer patients in Doll and Hill's study, all 647 were smokers. They waited to publicize their results, however, until they had data on 1400 lung cancer patients, which further strengthened their conclusions. TIMN0145510-5519 (US 62855) (Doll & Hill, Smoking and Carcinoma), supra; Brandt WD, 42:1-44:2.

548. In the early 1950s, Doll and Hill understood that some critics might dismiss findings linking smoking to disease as "merely" statistical -- which is precisely what Defendants did. As a result, Doll and Hill meticulously described the specific criteria that they required before an "association" could be identified as a genuine causal relationship. First, they worked to eliminate the possibility of bias in the selection of patients and controls, as well as in reporting

and recording their histories. Second, they emphasized the significance of a clear temporal relationship between exposure and subsequent development of disease. Finally, they sought to rule out any other factors that might distinguish controls from patients with disease. This explicit search for possible "confounders" and their elimination marked a critical aspect of their arrival at a causal conclusion. They insisted on carefully addressing all possible criticisms and all alternative explanations for their findings. In this respect, Doll and Hill expressed a strong commitment to inductive science, hypothesis-testing, and scientific method:

> Consideration has been given to the possibility that the results could have been produced by the selection of an unsuitable group of control patients, by patients with respiratory disease exaggerating their smoking habits, or by bias on the part of the interviewers. Reasons are given for excluding all these possibilities, and it is concluded that smoking is an important factor in the cause of carcinoma of the lung.

VXA2510117-0126 at 0125 (US 63604) (Doll & Hill, Smoking and Carcinoma of the Lung: Preliminary Report, supra); Brandt WD, 42:10-43:9.

549. Noted historian Charles Webster observed of the first Doll and Hill paper, published in 1950:

> This modest paper is now regarded as a classic. From these findings emerged the realization that smoking has been responsible for as many deaths per annum as were claimed by the great cholera epidemics of the nineteenth century. Smoking was thus established as a major cause of preventable disease.

VXA2510301-0310 at 0301 (US 63589) (Webster, Charles, Tobacco Smoking Addiction: A Challenge to the National Health Service, British Journal of Addiction, 79:7 (1984)); Brandt WD, 46:4-47:23.

550. Doll and Hill's work withstood scientific scrutiny. Two years later, in a 1952

follow-up report, Doll and Hill offered additional evidence for sustaining their conclusion, again fully considering alternative explanations:

> The present analysis of nearly 1,500 cases, or more than double the number dealt with in our preliminary report, supports the conclusion then reached and has revealed no alternative explanation -- for example, in the use of petrol lighters.
>
> It has been suggested that subjects with a particular physical constitution may be prone to develop (a) the habit of smoking and (b) carcinoma of the lung, and that the association might therefore be indirect rather than causal (Parnell,1951). We know of no evidence of such a physical constitution characteristic of patients with lung carcinoma. If it does exist we should still have to find some environmental factor to account for the increased incidence of the disease in recent years.

VXA2510127-0142 at 0139 (US 63603) (emphasis in original) (Doll, Richard, and A. Bradford Hill, A Study of the Aetiology of Carcinoma of the Lung, British Medical Journal (1952)); Brandt WD, 43:10-44:2. This alternative explanation for the relationship between smoking and lung cancer came to be labeled the "constitutional hypothesis" by Defendants. See also Section III(C)(1)(¶55), supra.

551. Doll and Hill also sought to confirm the findings of their retrospective study through prospective investigation. They gathered data from 40,000 British physicians who were followed in order to see whether they would develop lung cancer. This study showed over time that heavy smokers had death rates 24 times higher than those of nonsmokers. Doll and Hill's research continued through June of 2004 when Doll and his colleagues published a fifty year observational study in the British Medical Journal. Brandt WD, 46:1-20; VXA2510001-0005 (US 63612) (Doll, Richard, and A. Bradford Hill, The Mortality of Doctors in Relation to Their Smoking Habits: A Preliminary Report, British Medical Journal (1954));VXA2510006-0021 (US

63611) (Doll, Richard, and A. Bradford Hill, Lung Cancer and Other Causes of Death in Relation to Smoking, British Medical Journal (1956)).

552. Other researchers studied the connection between smoking and lung cancer during the same time period. In 1949, Evarts Graham, a leading surgeon at Barnes Hospital in St. Louis, and Ernst Wynder, a medical student at Washington University, designed and implemented a study to address and directly resolve the persistent and increasingly important questions concerning the possible harms of cigarette smoking. Graham, a nationally known surgeon who had performed the first pneumonectomy, was a heavy smoker himself and skeptical of the cigarette-lung cancer hypothesis.

553. Wynder and Graham collected extensive data on a group of 684 patients with lung cancer located in hospitals throughout the United States. These patients were extensively interviewed about their smoking levels and histories. Histological exams confirmed the diagnosis in all cases. This group was then compared to a "control group" of non-smokers, similar in age and other demographic characteristics. Wynder and Graham explained, "[T]he temptation is strong to incriminate excessive smoking, and in particular cigaret smoking, over a long period as at least one important factor in the striking increase of bronchiogenic carcinoma." They offered four reasons to support this conclusion. First, it was very unusual to find lung cancers among non-smokers. Second, among patients with lung cancer, cigarette use tended to be high. Third, the distribution of lung cancer among men and women matched the ratio of smoking patterns by gender. And finally, "the enormous increase in the sale of cigarettes in this country approximately parallels the increase in bronchiogenic carcinoma." These results were reported in the Journal of the American Medical Association ("JAMA"), a prestigious, peer

reviewed journal, on May 27, 1950. VXA2510109-0116 at 0114 (US 63605) (Wynder, Ernst L., and Evarts A. Graham, Tobacco Smoking as a Possible Etiologic Factor in Bronchiogenic Carcinoma: A Study of Six Hundred and Eighty Four Proved Cases, JAMA, 143.4: 329 (1950)); Brandt WD, 32:18-34:13, 37:13-40:15.

554. That 1950 issue of JAMA also included the report of an investigation reaching similar conclusions by scientist Morton Levin and others. In his commentary on research into the connection between cigarettes and lung cancer, Levin compared the current epidemiological research on cigarette smoking to research on the smoking/lung cancer connection done in the preceding twenty years, arguing that the past work was "inconclusive because of lack of adequate samples, lack of random selection, lack of proper controls or failure to age-standardize the data." In the case of the data gathered for his study, careful attention to "excluding bias" had been central. Levin concluded that "in a hospital population, cancer of the lung occurs more than twice as frequently among those who have smoked cigarets [sic] for twenty-five years than among other smokers or nonsmokers of comparable age." VXA2510106-0108 at 0106, 0107 (US 63606) (Levin, Morton L., Hyman Goldstein, and Paul R. Gerhardt, Cancer and Tobacco Smoking; A Preliminary Report, JAMA, 143:4 (1950)); Brandt WD, 39:23-40:18.

555. By the 1950s, animal research was also pointing to the carcinogenicity of cigarettes. Wynder and Graham turned their attention to the question of the "biological plausibility" of their epidemiological findings. In conducting animal investigations, Wynder reasoned that if tumors could be produced in animals, it would be an important step in confirming the early epidemiologic findings. Noting that smoke condensates, also known as tars, contained benzopyrenes, arsenic and other known carcinogens, he painted the backs of mice to

evaluate their effects. Fifty-eight percent of the mice developed cancerous tumors. Wynder concluded that "the suspected human carcinogen has thus been proven to be a carcinogen for a laboratory animal." These findings were reported in Cancer Research in December 1953. The study was often referred to as the Sloan-Kettering study because Wynder was affiliated with the Sloan-Kettering Institute of the Memorial Center for Cancer and Allied Diseases. CW00860130-0144 at 0137 (US 58868) (Wynder, Ernst L., Evarts A. Graham, and Adele B. Croninger, Experimental Production of Carcinoma with Cigarette Tar, Cancer Research, 13.12 (1953)); Brandt WD, 62:13-63:13; Harris WD, 62:4-63:10.

556. By late 1953, there had been at least five published epidemiologic investigations, as well as others, pursuing carcinogenic components in tobacco smoke and its impacts. These researchers' understanding of the link between smoking and lung cancer was markedly more certain than the case studies and preliminary statistical findings concluded earlier in the century. While some of the epidemiological methods were innovative, they were completely consistent with established scientific procedure and process. Epidemiology was not just based on statistics, but also was an interdisciplinary, applied field. The studies had substantially transformed the scientific knowledge base concerning the harms of cigarette use. Unlike earlier anecdotal and clinical assessments, these studies offered new and path-breaking approaches to investigating and resolving causal relationships. Brandt WD, 46:21-47:17.

557. Medical historians would come to view these studies as among the most important contributions to public health and medicine in the twentieth century. They offered a sophisticated scientific methodology for resolving central questions of causality. Id. at 46:21-48:6.

### b. By 1953, Defendants Recognized the Need for Concerted Action to Confront Accumulating Evidence of the Serious Consequences of Smoking

558. The studies connecting smoking and lung cancer were receiving attention outside the scientific community by 1953. For example, published reports like a Readers' Digest article titled "Cancer by the Carton" shared the scientific findings in national media, creating public concern. 03358234-8235 (US 46459); Brandt WD, 48:1-18.

559. The "Cancer by the Carton" article, published in 1952 explained:

> A study of 684 cases, made by Ernest L. Wynder and Evarts A. Graham for the American Cancer Society and published in the AMA Journal, May 27, 1950, stated this conclusion: "Excessive and prolonged use of tobacco, especially cigarettes, seems to be an important factor in the induction of bronchiogenic carcinoma."
>
> More recently Wynder, now associated with Memorial Cancer Center in New York, expanded the statement: "The more a person smokes the greater is the risk of developing cancer of the lung, whereas the risk was small in a nonsmoker or a light smoker."

03358234-8235 at 8235 (US 46459).

560. In late 1953, shortly after the Wynder and Graham study was published, tobacco stocks declined. Overall cigarette sales had also declined about 2% in 1952, which was the first time sales had declined since the Great Depression. Harris WD, 63:11-64:12; 01138541-8542 (US 34313).

561. As already discussed, by 1953-1954, tobacco company executives were aware both of the significant scientific studies establishing smoking as a cause of lung cancer and the public attention the studies were receiving. Defendants' executives well understood that this new scientific evidence constituted a full-scale crisis for their respective companies. Brandt WD,

48:19-51:23.

562. As evidence regarding the harms of smoking surfaced, Defendants engaged in advertising campaigns to induce the public to believe that cigarette smoking was actually beneficial to one's health. Some examples of Defendants' advertisements include: Kent Micronite filters, which were supposedly "developed by researchers in atomic energy plants," Kent cigarettes, which claimed "No other cigarette approaches such a degree of health protection and taste satisfaction," and a Chesterfield ad claiming to cite test results that "smoking Chesterfields would have no adverse effects on the throat, sinuses, or affected organs." ADV1100001-0003 at 0002-03 (US 88703); LW02427396-7397 at 7396 (US 74413); ADV1110007-0009 at 0008 (US 88728); ADV1100040-0043 at 0042 (US 88715); Harris WD, 67:11-70:20.

563. While continuing to insist that there was no indication that cigarettes were unsafe, Defendants moved aggressively to market products which they implied were safer. In 1953, Defendant Liggett hired Arthur D. Little, Inc. ("ADL") to test tobacco condensates on mice in an attempt to develop strategies for removing carcinogens, at the same time that it advertised that its filters were "Just What the Doctor Ordered." VXA2611190-1190 (US 63543) (Liggett Advertisement, "Fredric March Says -- This Is It L & M Filters Are Just What the Doctor Ordered").

564. Defendants also developed the Tobacco Industry Research Committee ("TIRC") to sponsor research into "all phases of tobacco use and health" and to handle public relations for the tobacco industry in response to the growing body of scientific knowledge. See extended discussion of TIRC in Section III(C). The first Scientific Director of TIRC, appointed in 1954,

was a well-respected geneticist and cancer researcher, Clarence Cook Little. A former president of the University of Maine and the University of Michigan, founder of the Roscoe B. Jackson Memorial Laboratory, and member of the National Academy of Sciences, Little quickly became a steadfast critic of the emerging scientific data linking cigarettes to cancer. Brandt WD, 86:4-88:5.

565. A confidential report of a TIRC meeting held October 19, 1954, made explicit Little's and Defendants' agenda: "[Little] declared that both he and the members of the board were aware of the attacks which had been made on tobacco for over 200 years, and wished to build a foundation of research sufficiently strong to arrest continuing or future attacks." CTRMN007295-7297 at 7295 (US 22900); Brandt WD, 86:4-88:5.

566. Little criticized those whose findings showed harms from tobacco use:

> The right of an individual to determine his own level or threshold of convincibility is unquestioned.
>
> There are and will always be individuals who are convinced without the need of experimental evidence that <u>all</u> tobacco in <u>any</u> form is evil, noxious and toxic. There are individuals with a similar attitude toward alcohol, coffee, and the use of drugs, sera or medicines.
>
> * * *
>
> Such assumptions [that smoking caused cancer] stimulated some investigators to begin an enthusiastic hunt for <u>the</u> "component" or "components" in tobacco smoke that can be blamed for the unproved cause-and-effect relationship as well as for the reported production of skin cancer in some experiments with certain strains of laboratory mice.

501773418-3466 at 3428-3429 (US 20686) (emphasis in original); Brandt WD, 86:4-88:5.

567. Little continually called for more research: "In the active and continuing

discussions about tobacco use and health, there seems to be nearly complete agreement among scientists on only one point: The need for much more intensive research into the subject." 501773418-3466 at 3425 (US 20686); Brandt WD, 86:4-88:5.

568. Under Little's leadership, the major thrust of TIRC was to emphasize that human cancers were complex processes -- difficult to study and difficult to understand. Little directed TIRC towards what he called "pioneer research." He claimed that studies which focused on cigarettes could "stifle or delay needed research to find the basic origins of lung cancer or cardiovascular diseases, which are most powerful, diversified and deadly enemies to our well-being." 85865874-5946 at 5878 (US 21084); Brandt WD, 86:19-88:5.

569. Little also argued that there were no known carcinogens in tobacco tars (despite Defendants' clear knowledge to the contrary, as addressed in Section V(A)(5)(b)). He repeatedly centered attention on the so-called "constitutional hypothesis," other environmental risks, and the need for more research:

> Too little is known about many factors, including why people smoke or what kind of people become particularly heavy smokers.
>
> * * *
>
> The problem of causation of any type of cancer is complex and difficult to analyze. All research on this so-called constitutional disease is, and must be, painstaking and time-consuming. There is not known today any simple or quick way to answer the question of whether any one factor has a role in causing human lung cancer.
>
> Despite all the attention given to smoking as an accused factor in human lung cancer, no one has established that cigarette smoke, or any one of its known constituents, is cancer-causing to man [sic].

501773418-3466 at 3422-3423 (US 20686); Brandt WD, 85:10-86:3.

### 3. Developments Between 1953 and 1964

#### a. Between 1953 and 1964, the Evidence Demonstrating that Smoking Causes Significant Adverse Health Effects Grew Although No Consensus Had Yet Been Reached

570. During the 1950s, the evidence implicating smoking as a cause of lung cancer continued to grow. The published research employed different methodologies and was reported in well-respected peer reviewed journals. Id. at 66:10-73:10. Such research utilized clinical observation, population studies and laboratory investigation, all of which, alone or in combination, are traditional methods of scientific investigation. Brandt TT, 9/27/04, 643:5-652:11.

571. During the late-1950s, particularly 1957-1959, the scientific and medical evidence was mounting that smoking causes disease. However, there was still ongoing debate amongst respected and independent researchers and public health experts about both the substantive evidence showing causation and about the proper technical terminology to describe the degree of association between smoking and the disease.

572. Even as the evidence mounted demonstrating the causal link between smoking and disease, scientists equivocated on the exact nature of such causation. For example, in 1956, Dr. C.S. Cameron, the Medical and Scientific Director of the American Cancer Society ("ACS"), wrote an article, appearing in The Atlantic, on the history and ongoing research on smoking and lung cancer, which stated:

> Most of the scientists who have given thought and study to the matter appear to agree that an association between cigarette smoking and cancer of the lung does exist. Whether that association is one of cause and effect is as yet unanswered in terms of major scientific opinion. . . . [The American Cancer Society]

> does not hold that smoking causes cancer of the lung.

(no bates) (JD 000310 at 71, 75) (C.S. Cameron, Lung Cancer and Smoking: What We Really Know, The Atlantic, 197(1):71-75 (Jan. 1956)). Cameron went on to state, however:

> The American Cancer Society, along with a growing body of professional and scientific opinion, has taken this position: Although the complicity of the cigarette in the present prevalence of cancer of the lung has not been proved to the satisfaction of everyone, the weight of evidence against it is so serious as to demand the stewards of the public welfare that they make the evidence known to all.

Id.

573. The debate on causation in the 1950s stemmed from those who believed that a causal judgment required experimental confirmation. Brandt TT, 9/27/04 at 726:13-21. For example, one respected researcher wrote: "proof is lacking and will remain absent until it becomes possible to produce cancer experimentally from some or all of the products contained in cigarette smoke." (no bates) (JD 002521 at 267) (E. Graham, Primary Cancer of the Lung With Special Consideration Of Its Etiology, Bulletin of the New York Academy of Med., 27:261-76 (1951)). As one article explained it, many scientists were skeptical of the epidemiologic evidence:

> There is a history of skepticism toward field-based population studies, in contrast with studies performed in the laboratory . . . the epidemiologic and biostatistical techniques used in the retrospective studies of smoking and lung cancer were relatively new. Skepticism and misunderstanding of this new methodology played an important role in the debate over the health effects of cigarettes.

The article also states:

> [T]he surgeon general and US Public Health Service (PHS)

> scientists had concluded as early as 1957 that smoking was a cause of lung cancer, indeed, "the principle etiologic factor in the increased incidence of lung cancer." Throughout the 1950s, however, the PHS rejected further tobacco-related public health actions . . . . It was not until pressure mounted from outside the PHS in the early 1960s that more substantive action was taken. Earlier action was not taken because of the way in which PHS scientists (particularly those within the National Institutes of Health) and administrators viewed their roles in relation to science and public health.

(no bates) (JD 004238 at 197) (M. Parascandola, Public Health Then and Now: Cigarettes and the US Public Health Service in the 1950s, Am. J. Pub. Health, 91(2):196-205 (2001)). In this good faith, professional debate, scientists seeking such experimental confirmation did not doubt the causal link between smoking and disease but rather doubted that it had been proven with scientific rigor. Brandt WD, 67:19-68:19.

574. Given this diversity of views amongst respected and independent scientists, the Court does not find, as the Government has argued, that, as of the mid-1950s, a consensus had yet been reached on whether cigarette smoking "caused" -- in the precise scientific meaning of that term -- cancer.

575. In 1956, at the urging of Surgeon General Leroy Burney, a Study Group on smoking and health was organized by the American Cancer Society, the American Heart Association, the National Cancer Institute, and the National Heart Institute. This group of distinguished experts met regularly to assess the character of the scientific evidence relating to tobacco and health. At that time, the Group noted that sixteen studies had been conducted in five countries all showing a statistical association between smoking and lung cancer. Among the studies they summarized, it was demonstrated that: lung cancer occurs five to fifteen times more

frequently among smokers than nonsmokers; on a lifetime basis one of every ten men who smoke more than two packs a day will die of lung cancer; and cessation reduces the probability of developing lung cancer. VXA2510023-0027 (US 63610) (Strong, Frank M., et al., Smoking and Health: Joint Report of the Study Group on Smoking and Health, Science, 125:1129-1133 (1957)); Brandt WD, 69:22-71:7.

576. The Group also noted that the epidemiological findings were supported by animal studies in which malignant neoplasms had been produced by tobacco smoke condensates. Further, human pathological and histological studies added evidence to strengthen the "concept of causal relationship." The authors concluded:

> Thus, every morphologic stage of carcinogenesis, as it is understood at present, has been observed and related to the smoking habit.
>
> The sum total of scientific evidence establishes beyond reasonable doubt that cigarette smoking is a causative factor in the rapidly increasing incidence of human epidermoid carcinoma of the lung.

VXA2510023-0027 at 0023 (US 63610) (Strong, Frank M., et al., Smoking and Health: Joint Report of the Study Group on Smoking and Health, Science, 125:1129-1133 (1957)); Brandt WD, 69:22-71:7.

577. However, the Study Group's judgment that smoking causes disease was not widely accepted. Dr. Michael Shimkin, a PHS researcher and a member of the Study Group, stated the Study Group's report "created no particular stir . . ." and was not widely accepted outside of the group itself. (no bates) (JD 060636) (Shimkin, M.B., In the Middle: 1954-63 – Historical Note, JNCI 62(5)-1295-1317 (May 1979)). Some of the very organizations which had sponsored the Study Group, including the National Heart Institute and the American Heart Association (US

63610 at 1129), did not accept its report as "sufficiently convincing." (no bates) (JD 060636 at 1297)). Individual scientists within NCI disagreed with the Group's conclusion, and there was definitely no clear consensus at NCI on the issue. Brandt TT, 9/27/04, 712:25-713:5, 715:9-16.

578. In 1957, NCI's Director, John Heller, gathered together the chiefs of four major NCI sections, Drs. Gilliam (Chief of Epidemiology), Hueper (Chief of the Environmental Cancer Section), Shear (NCI's expert on carcinogenesis), and Stewart (NCI's head pathologist) to determine their stance on the issue of whether smoking caused disease. He "received more denials than support." (no bates) (JD 060636 at 1298) (Shimkin, supra). "[T]heir paradigm of cancer research simply did not encompass the epidemiologic method." Id. Thus they "refused to recognize epidemiologic data that were not confirmed in laboratory animals." Id.

579. Because of the dissension within NCI over the causation issue, and its refusal to accept the conclusions of the Study Group, Surgeon General Burney appointed Dr. Lewis Robbins to be NCI's point person to deal with the issue of causation. Brandt TT, 9/27/04, 716:2-15; see also (no bates) (JD 060636 at 1298) (Shimkin, supra) ("[Burney] then ordered a fuller account to be prepared for his signature; this task was assigned to Dr. Lewis Robbins. . . .").

580. Dr. Robbins's first task was to write a brochure for physicians on smoking and lung cancer. Brandt TT, 9/27/04, 720:23-721:5; (no bates) (JD 004252 at 609). As the brochure "went through numerous reviews at the National Cancer Institute throughout the next 16 months" (no bates) (JD 004252 at 609), Dr. Robbins faced internal opposition. Within NCI's Carcinogenesis Branch, Drs. Hueper (Chief of the Environmental Cancer Section), Shear (NCI's expert on carcinogenesis) and Stewart (NCI's head pathologist) all opposed publication because

they "disagreed with any emphasis that cigarette smoking induced lung cancer." Id. at 610.

581. In 1961, the editors of The New England Journal of Medicine stated that while:

> the editors of the Journal have on occasion revealed their own suspicion that one side of this controversy is probably the one to which to cleave, it is perhaps not completely judicious for them to offer any extraneous comments at this time that might seem to favor either faction.
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> * * *
>
> It is enough to say that most of the evidence is statistical and demonstrates a close association between heavy cigarette smoking and lung cancer.
>
> * * *
>
> Many conscientious observers believe that there are strong indications in favor of a causal relation in the vast majority of cases. . . . Others remain unconvinced. . . . Each individual must choose his own course, whether to woo the lady nicotine or abjure the filthy weed, while the search for truth continues.

(no bates) (JD 020447).

582. Based on the Study Group's review of existing material, Dr. Robbins's brochure, and subsequent research results, Surgeon General Burney believed in 1959 that the link between smoking and disease was significant and that, as a result, there were important and timely opportunities to prevent disease:

> The Public Health Service believes that the following statements are justified by studies to date.
>
> 1. The weight of evidence at present implicates smoking as the principal etiological factor in the increased incidence of lung cancer.
>
> 2. Cigarette smoking particularly is associated with an increased chance of developing lung cancer.

3. Stopping cigarette smoking even after long exposure is beneficial.

4. No method of treating tobacco or filtering the smoke has been demonstrated to be effective in materially reducing or eliminating the hazard of lung cancer.

5. The nonsmoker has a lower incidence of lung cancer than the smoker in all controlled studies, whether analyzed in terms of rural areas, urban regions, industrial occupations, or sex.

6. Persons who have never smoked at all (cigarettes, cigars, or pipe) have the best chance of escaping lung cancer.

7. Unless the use of tobacco can be made safe, the individual person's risk of lung cancer can best be reduced by elimination of smoking.

VXA2510046-0054 at 0052-0053 (US 63608) (Burney, Leroy E., Smoking and Lung Cancer: A Statement of the Public Health Service, JAMA, 71: 1828-1837 (1959)); Brandt WD, 76:13-77:21.

583. While Dr. Burney believed the link between smoking and disease was significant, his article did not come to a categorical conclusion. The PHS itself labeled Dr. Burney's conclusion "weasel words" that were necessitated by the strong disagreement over the issue within the agency itself. Brandt TT, 9/27/04, 707:4-708:3, 722:1-12; (no bates) (JD 022706 at 1) (Letter from L.C. Robbins, M.D., Chief, Cancer Control Program, to H.S. Diehl, M.D. (July 8, 1960)). The debate over what was proof of a "cause" is unmistakable in the early drafts of the Surgeon General's 1959 statement. To try to reach agreement on how the PHS would describe the evidence and the relationship, a number of drafts were circulated. (no bates) (JD 004252 at 611). Weeks before publication, in a November 1959 draft marked "final," the PHS planned to

state that the area was "highly controversial," that there was "no scientific proof" of causation, and that the Surgeon General's article would "admit[] this":

> [W]e feel justified to make a further observation which seems pretty well established. There exists no scientific proof that smoking causes lung cancer. Even the Surgeon General's special article admits this. . . . Today we have this "coincidence" of a statistical relationship between smoking and lung cancer. The pathological evidence of the relationship between the two, if not weak, is at least highly controversial.

(no bates) (JD 020373 at 1).

584. The dissent over the issue also led to PHS publication of an editorial opposing the Surgeon General's own article, which was published two weeks later. (no bates) (JD 023196) (at Tab 7); Brandt TT, 9/27/04, 722:13-723:4, 724:9-15 (written because of disagreement within Surgeon General's office and NCI). The editorial criticized Surgeon General Burney's statement on two related grounds. First, it acknowledged disagreement over its conclusion:

> A number of authorities who have examined the same evidence cited by Dr. Burney do not agree with his conclusions.

Second, it pointed out the lack of evidence to support an authoritative position:

> Neither the proponents nor the opponents of the smoking theory have sufficient evidence to warrant the assumption of an all-or-none authoritative position.

(no bates) (JD 000716 at 2104) (Smoking and Lung Cancer, JAMA, 171(15):2104 (1959)). See also Brandt TT, 9/27/04, 722:13-723:30.

585. In addition, outside of the public health community, surgeons and pathologists published clinical reports associating cancer in their patients with their smoking habits. In 1957, Oscar Auerbach and his colleagues first reported in the New England Journal of Medicine on

"Changes in the Bronchial Epithelium in Relation to Smoking and Cancer of the Lung." Auerbach's study evaluated patients with confirmed smoking histories who died and were autopsied. In order to avoid any potential bias, microscopists were kept ignorant of the smoking histories in the 30,000 examinations that they made. Auerbach and his co-authors concluded:

> These findings are fully consistent with the hypothesis that inhalants of one sort or another are important factors in the causation of bronchogenic carcinoma. The findings are also consistent with the theory that cigarette smoking is an important factor in the causation of bronchogenic carcinoma.

Auerbach presented additional confirmatory findings in 1961 and 1979. 682628764-8771 at 8771 (US 54185) (Auerbach, Oscar, et al., Changes in the Bronchial Epithelium in Relation to Smoking and Cancer of the Lung: A Report of Progress, New England Journal of Medicine, 256.3:97-104 (1957)); VXA2511322-1328 (US 63538) (Auerbach, Oscar, E. Cuyler Hammond, and Lawrence Garfinkel, Changes in the Bronchial Epithelium in Relation to Cigarette Smoking, 1955-1960 vs. 1970-1977, New England Journal of Medicine, 300.8:381-386 (1979)); Brandt WD, 63:14-64:11.

586. During the same time period, E. Cuyler Hammond and Daniel Horn conducted a massive epidemiological study of smoking and lung cancer under the auspices of the American Cancer Society. In the Hammond and Horn study, more than 200,000 men were followed prospectively for nearly four years; during this period 12,000 died. The authors found that not only was lung cancer far more prevalent as a cause of death among those who smoked (twenty-four times more than nonsmokers), so too were heart disease and circulatory disease. Hammond and Horn estimated that among smokers, smoking might account for up to 40% of their mortality. VXA2510028-0045 (US 63609) (Hammond, E. Cuyler, and Daniel Horn, Smoking

and Death Rates -- Report on Forty-four Months of Follow-up of 187,783 Men, JAMA, 2840-2857 (1958)); Brandt WD, 65:16-66:9.

587. These results were consistent with research being carried on outside the United States. In 1957, the Medical Research Council of Great Britain issued a statement printed in the British Medical Journal and the Lancet which read:

> Evidence from many investigations in different countries indicates that a major part of the increase [in lung cancer] is associated with tobacco smoking, particularly in the form of cigarettes. In the opinion of the Council, the most reasonable interpretation of this evidence is that the relationship is one of direct cause and effect. The identification of several carcinogenic substances in tobacco smoke provides a rational basis for such a causal relationship.

01149261-9264 at 9264 (US 63537); Brandt WD, 75:23-76:12. However, at that point in time, the Medical Research Council was not prepared to reach a categorical conclusion on causation.

588. In January 1959, Jerome Cornfield, who was Assistant Chief of the Biometrics Section at the National Cancer Institute and Chairman of the Department of Biostatistics at Johns Hopkins University, offered a substantive review of the available evidence linking cigarettes to lung cancer. Cornfield and his colleagues carefully considered the range of alternative hypotheses to account for the significant rise in cases of, and deaths from, lung cancer. They concluded:

> The magnitude of the excess lung-cancer risk among cigarette smokers is so great that the results can not be interpreted as arising from an indirect association of cigarette smoking with some other agent or characteristic, since this hypothetical agent would have to be at least as strongly associated with lung cancer as cigarette use; no such agent has been found or suggested. The consistency of all the epidemiologic and experimental evidence also supports the conclusion of a causal relationship with cigarette smoking, while there are serious inconsistencies in reconciling the evidence with

> other hypotheses which have been advanced. Unquestionably there are areas where more research is necessary, and, of course, no single cause accounts for all lung cancer. The information already available, however, is sufficient for planning and activating public health measures.

This paper also explicitly refuted ongoing critiques by two well-known statisticians, Fisher and Berkson:

> We see nothing inherently contradictory or inconsistent in the suggestion that one agent can be responsible for more than one disease, nor are we lacking in precedents. The Great Fog of London in 1952 increased the death rate for a number of causes, particularly respiratory and coronary disease, but no one has given this as a reason for doubting the causal role of the Fog. Tobacco smoke, too, is a complex substance and consists of many different combustion products. It would be more "incredible" to find that these hundreds of chemical products all had the same effect than to find the contrary. A universe in which cause and effect always have a one-to-one correspondence with each other would be easier to understand, but it obviously is not the kind we inhabit.

VXA2510068-0098 at 0068, 0091 (US 63607) (Cornfield, Jerome, et al., Smoking and Lung Cancer: Recent Evidence and Discussion of Some Questions, Journal of the National Cancer Institute, 22.1:173-203 (1959)); Brandt WD, 71:23-73:10.

589. In 1960, the World Health Organization ("WHO") also issued a statement signaling its agreement with the Surgeon General's and Medical Research Council's conclusions. After conducting a review of the scientific findings, the WHO found a causal link to be the "most reasonable interpretation." Brandt WD, 77:22-78:1; Brandt TT, 9/27/04, 704:12-14.

590. In 1962, yet another thorough and far-reaching assessment of the scientific evidence reached the same conclusions as previous studies. The British Royal College of Physicians, after two years of investigation, stated, "[d]iseases associated with smoking now

cause so many deaths that they present one of the most challenging opportunities for preventive medicine today." The report concluded:

> The strong statistical association between smoking, especially of cigarettes, and lung cancer is most simply explained on a causal basis. . . . The conclusion that smoking is an important cause of lung cancer implies that if the habit ceased, the death rate from lung cancer would eventually fall to a fraction, perhaps to one fifth or even, among men, to one tenth of the present level. Since the present annual number of deaths attributed to lung cancer before the age of retirement is some 12,000 . . . a large amount of premature shortening of life is at issue.

(no bates) (JD 001007); Brandt WD, 78:2-17.

591. From 1953 to 1964, in articles, speeches, and testimony, the debate continued amongst many of the most respected scientists and organizations in the country:

> 1953: NCI's Director, Dr. John R. Heller, "testified that there has not been any conclusive proof that smoking causes cancer." Brandt TT, 9/28/04, 885:10-13. See also (no bates) (JD 004219 at 1018) (Department of Labor-Federal Security Agency Appropriations for 1954: Hearings Before the Subcomm. of the Comm. on Appropriations, 83rd Cong. 1018 (1953) (testimony of Dr. John Heller: "As you are well aware, the correlation of heavy cigarette smoking has been mentioned in connection with the occurrence of lung cancer, but this has not, to our satisfaction, definitely been established. . . .")).
>
> 1953: Three senior PHS scientists noted the statistical association, but stated "the etiological significance of these associations remains unestablished." (no bates) (JD 000720 at 1256) (D.A. Sadowsky, et al., The Statistical Association Between Smoking and Carcinoma of the Lung, JNCI, 13:1237-58 (Aug. 1952-June 1953)).
>
> 1954: Dr. Hueper, NCI's Chief of the Environmental Cancer Section stated that "causation had not been proven." Brandt TT, 9/27/04, 709:10-19.
>
> 1954: Surgeon General Scheele stated the "not proven" position

and the clear need for "much more study." (no bates) (JD 020490 at DMA001 0629) ("Heavy cigarette smoking and the allegation that it causes lung cancer have received much attention lately. There appears to be a statistical correlation between heavy cigarette smoking and the occurrence of lung cancer, however, we do not believe that adequate evidence of a positive causal relationship has been proven. Much more study is required and is now in progress.").

1954: Dr. Jesse Greenstein, Chief of NCI's Biochemistry Laboratory, wrote a biochemistry book which states: "At this time, the etiological significance of the apparent association of lung cancer and smoking remains unestablished." (no bates) (JD 000719 at 167) (Greenstein, J.P., Biochemistry of Cancer: Chapter III -- Extrinsic Factors (Academic Press 2nd ed.) (1954)).

1955: NCI's Chief of Environmental Cancer, Dr. Hueper, lectured that the value of statistical data was "at best circumstantial." (no bates) (JD 000467 at 67, 69) (Cigarettes, Laboratory Tests . . . The Industry . . . Medical Aspects, Consumer Reports, 20(2):56-73 (Feb. 1955) ("Dr. Hueper and some other experts regard the evidence linking lung cancer and cigarette smoking as insufficient or contradictory, and the theory generally as not proven. . . . [A]ccording to Dr. Hueper, a world-renowned authority on environmental carcinogens, 'the cigarette theory is almost entirely based on statistical data having at best circumstantial value and being in part of questionable origin.'")). See also (no bates) (JD 020522 at 173-74) (An Analysis of the Environmental Causes of Lung Cancer, American Pharmaceutical Manufacturers's Ass'n Proceedings of the Mid-Year Meeting at 149-178 (Dec. 6-8, 1954)).

1955: NCI's scientists reported to be "pretty well divided" on the possible causal relationship . (no bates) (JD 000711 at 8) (Edward R. Murrow, Cigarettes Lung Cancer, CBS television broadcast transcript, June 7, 1955). However, by 1957, NCI's Director, Dr. Heller "made it clear that 'only one or two' scientists in the NCI were not in agreement with the PHS [Public Health Service] view on the evidence." (no bates) (JD 004238 at 200).

1956: NCI's Director, Dr. Heller, testified before Congress that it was NCI's view that a cause and effect relationship between smoking and lung cancer had not yet been demonstrated. Brandt

TT, 9/28/04, 886:3-9.

1957: Surgeon General Burney testified before Congress that final answers had not been secured, and, without "much more definitive information," a warning campaign should not be commenced. False and Misleading Advertising: Hearing Before the Legal & Mon. Aff. Subcommittee of the Committee on Government Operations, 85th Cong., 133-162 (1957). Surgeon General Burney went on:

> We believe that ["it is confirmed beyond a reasonable doubt that there is a high degree of statistical association between lung cancer and heavy and prolonged cigarette smoking"], and Dr. Heller's group agrees with that. . . . I would like to say again, however, that we do not believe the final answers have been secured and that there is a limit to what a responsible, official Federal agency can or should do before they have all available information. That is why I think we have stopped at a certain point. Using our particular judgment, and that until such time as we have much more definitive information, we should not go all out on a campaign and put stickers on cigarettes and certain other things.

Surgeon General Burney and Dr. Heller of the NCI testified about the agreement between scientists with respect to the role that smoking plays in lung cancer:

> [T]here are many scientists in the Cancer Institute, and many differences of opinion, scientists being scientists. However, I would disagree . . . that there is a wide variation in attitude. Even a particular scientist who believes that air pollution is much more of a factor, for example, than smoking, says, however, that there is no doubt that smoking is incriminated in this process and it is simply a matter of degree. . . . I would say that the consensus in the Cancer Institute -- I can't speak for the entire Public Health Service, but certainly in the Cancer Institute and in the National Institutes of Health -- the consensus is reflected in the statement which the

> Surgeon General has promulgated. . . . An overwhelming majority [agree]. I would say with the exception of only 1 or 2 who do not agree completely with this viewpoint, but the overwhelming majority of the scientists in the National Institute of Health agree.

(no bates) (JD 11816 at 160). Dr. Heller further explained the agreement among scientists.

> Taking the country as a whole . . . I would say the majority of them concur in this viewpoint. There are certain individuals . . . who do not agree. . . . This is characteristic of science in general, where there is a difference of opinion on many subjects. However, when one analyzes it to the utmost, there is not as much difference as one might think on the surface. . . . My best guess is that 75 percent of the physicians or scientists who have knowledge and some competence in this area would concur with this formula.

Id. at 161.

1957: NCI's Director, John Heller, told Congress that "elucidat[ing] the basic mechanism involved" was of the greatest importance in the direction of research. (no bates) (JD 000332 at 145) (Advertising (Filter-Tip Cigarettes), Hearings Before a Subcomm. of the Committed. on Government Operations, House of Representatives, 85th Cong. 145 (1957)).

1960: Biometrics Branch Chief, Dr. Harold Dorn, co-reporter for WHO's Technical Report No. 192, "Epidemiology of Cancer of the Lung," stated that "epidemiological studies of a disease such as lung cancer identify general factors that affect the incidence of the disease. The identification of the specific agent responsible for the effect of a general factor (for example, cigarette smoking or air pollution) must usually be made by laboratory or experimental studies. The Study Group recommends that such studies be encouraged. . . . The Study Group also wished to call attention to the fact that existing knowledge of the etiology of lung cancer is already sufficiently well established to justify prophylactic action aimed at reducing exposure to known etiological factors." FED 100017175-7184 at 12-13 (JD 045987).

592. As the debate continued, by the early 1960s, the overwhelming majority of the scientific and medical community had come to believe that smoking was causally linked to disease. For example, in 1962, Dr. Lewis C. Robbins, of NCI, acknowledged that although science could not yet take an "authoritative position" on the issue of causation, the public health stakes were too great to wait for submission of the complex experimental proof required by traditional causation standards. Instead, PHS would send its message to the public based on a less stringent "public health" viewpoint:

> While one may be unable to take an authoritative position concerning proof of a relationship between smoking and lung cancer, there is a public health viewpoint which is of the greatest importance: It appears that there may not be definitive studies concerning this relationship in our lifetime. . . . There comes a time when science can show a high degree of probability but cannot answer the final question: Should this be applied to people? It is here that the practice of preventative medicine must pick up and take the final step.

(no bates) (JD 020481 at 2).

593. In sum, by the early 1960s, the view of the scientific community had reached the conclusion that the evidence supporting a causal relationship between smoking and lung cancer was sufficiently established and recognized -- albeit not to a scientific certainty -- that it was appropriate to warn the public of the dangers it faced.

**b. Before 1964, Defendants Internally Recognized the Growing Evidence Demonstrating that Smoking Causes Significant Adverse Health Effects**

594. Internal documents reveal that Defendants' knowledge of the potential harm caused by smoking was markedly different from their public denials on the same subject. Defendants specifically recognized the validity of the growing body of scientific evidence that

existed in the 1950s.

595. At the same time that Defendants assured the public through their 1953 "Frank Statement" that "there is no proof that cigarette smoking is one of the causes [of cancer]," they documented a large number of known carcinogens contained in cigarette smoke. 86017454-7454 (US 21418).

596. For example, a December 24, 1952 memorandum titled "Report of Progress -- Technical Research Department" contained a "Cancer" section, which noted: "The B&W lab has in the past made a partial isolation and identification of the aromatic hydrocarbon, benzopyrene, in both smoke and original tobacco from RALEIGH blend cigarettes." The report refers to benzopyrene as a "carcinogenic hydrocarbon." 65020084-0095 at 0092 (US 21388).

597. Beginning in 1954, the BAT Group's major research laboratory performed research into the carcinogenicity of cigarette smoke by conducting skin-painting experiments on mice. As noted at Section V(A)(5)(b)(¶671), infra, this research showed that when compounds in cigarette smoke were painted onto mouse skins, they caused cancerous tumors. 682621615-1617 at 1615 (US 54180).

598. RJR recognized smoking as a cause of disease in mice as early as 1953. This knowledge is documented in a February 1953 Report drafted by Claude Teague, an RJR research scientist, titled "Survey of Cancer Research with Emphasis on Possible Carcinogens from Tobacco." It was clear to Teague that, "[s]ome workers have attempted to produce experimental cancers in test animals by application of tars obtained from tobacco, tobacco smoke, and other materials derived from tobacco." Teague further acknowledged: "On the basis of the information at hand, it would appear that polynuclear aromatic compounds occur in the pyrolytic products of

tobacco. Bensyprene and 'N-bensyprene[sic], both carcinogens, were identified in the distillates. . . . Studies of clinical data tend to confirm the relationship between heavy and prolonged tobacco smoking and incidence of cancer of the lung." 501932947-2968 at 2952-2953, 2961, 2963 (US 21407).

599. A 1959 RJR document written by Alan Rodgman, an RJR scientist, discusses a 1954 report of a "carcinogenic (cancer producing) polycyclic hydrocarbon, 3, 4-benzpyrene" and elaborates on RJR's in-house research which corroborated this finding:

> There is no evidence that any of these compounds will produce cancer in man. Nonetheless, there is a distinct possibility that these substances would have a carcinogenic effect on the human respiratory system. Medical experience has shown that man responds to various chemical substances in the same manner as experimental animals. It follows therefore that it would be better for the consumer if cigarette smoke were devoid of such compounds.
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> * * *
>
> Some thirty-odd polycyclic hydrocarbons have since been similarly characterized in these laboratories. Of these, eight are carcinogenic to mouse epidermis.

500945942-5945 at 5942 (US 21249).

600. RJR sought to remove some of the cancer-causing compounds at the same time it was publicly denying that the compounds even existed: "[H]aving confirmed and extended the early published findings on polycyclic hydrocarbons in cigarette smoke, we initiated a lengthy research program to develop methods to lessen the amounts of these potentially dangerous compounds in cigarette smoke." 500945942-5945 at 5943 (US 21249).

601. Rodgman's later work corroborated his prior findings. In 1956, he wrote an extensive paper on "The Analysis of Cigarette Smoke Condensate." In it, Rodgman explained:

> The research described in this report represents a concerted effort to determine whether or not the polycyclic aromatic hydrocarbons are present in cigarette smoke condensate. One of the major objections offered to previous investigations is that the identification of specific compounds solely on the basis of ultraviolet absorption studies is not definitive. Since the present research describes the actual isolation, identification and characterization of several polycyclic aromatic hydrocarbons including the highly carcinogenic 3, 4-benzpyrene, the major criticisms of past research are now nullified.

Rodgman further wrote of the studies undertaken using standard Camel cigarettes:

> In view of this data, it is logical to assume that the carcinogenic activity of cigarette smoke condensate is due to the presence of one or more carcinogenic polycyclic aromatic hydrocarbons.
>
> * * *
>
> Since it is now well-established that cigarette smoke does contain several polycyclic aromatic hydrocarbons, and considering the potential and actual carcinogenic activity of a number of these compounds, a method of either complete removal or almost complete removal of these compounds from cigarette smoke is required.

501008241-8293 at 8254, 8279, 8280 (US 20667).

602. Rodgman's views were consistent with what visiting scientists from the United Kingdom observed in 1958 about researchers working for Defendants. The three British scientists reported widespread acceptance among top officials and scientists in the United States tobacco industry, including those at TIRC, Liggett, Philip Morris, and American, that smoking causes disease. They further noted that there was virtual consensus among researchers within the industry that cigarettes played a role in the production of human cancers:

> With one exception (H.S.N. Greene) the individuals whom we met believed that smoking causes lung cancer if by "causation" we mean any chain of events which leads finally to lung cancer and

> which involves smoking as an indispensable link. In the U.S.A. only Berkson, apparently, is now prepared to doubt the statistical evidence and his reasoning is nowhere thought to be sound.
>
> * * *
>
> In their [Liggett's] opinion T.I.R.C. has done little if anything constructive, the constantly re-iterated "not proven" statements in the face of mounting contrary evidence has thoroughly discredited T.I.R.C., and the S.A.B. of T.I.R.C. is supporting almost without exception projects which are not related directly to smoking and lung cancer. Liggetts [sic] felt that the problem was sufficiently serious to justify large-scale investment by the Company directly in experimental research on smoke and cancer, accepting privately that a strong case against tobacco had been made out and avoiding any public comment until their own research had provided something concrete to offer.
>
> * * *
>
> The majority of individuals whom we met accepted that beyond all reasonable doubt cigarette smoke most probably acts as a direct though very weak carcinogen on the human lung. The opinion was given that in view of its chemical composition it would indeed be surprising if cigarette smoke were <u>not</u> carcinogenic. This undoubtedly represents the majority but by no means the unanimous opinion of scientists in U.S.A. These individuals advised us that although it is not possible to predict unambiguously the effect of any substance on man from its effect on experimental animals the generally successful use of animals in other fields as a model for man fully justifies their use in our problem.

TINY0003106-3116 at 3108, 3111, 3112 (US 21369) (emphasis in original); Brandt WD, 94:8-96:13; Brandt TT, 9/28/04, 820:6-20.

603. In 1962, Rodgman offered his assessment of "the smoking and health problem":

> Although the major part of the sales of this Company consists of cigarettes, what the Company sells is <u>cigarette smoke</u>. This Company, therefore, should be concerned with the physiological properties and composition of cigarette smoke. The benefits from such knowledge are obvious, particularly [sic] it anticipates

> possible governmental regulation. During the past two decades, cigarette smoke has been the target of a host of studies relating it to ill-health and particularly to lung cancer. The majority of these studies incriminate cigarette smoke from a health viewpoint.
>
> * * *
>
> Epidemiological data: The results of 34 different statistical studies show that cigarette smoking increases the risk of developing lung cancer. Many authorities believe the relationship to be one of cause-and-effect. . . . The statistical data from the smoking-health studies are almost universally accepted. After more than ten years, criticisms of the studies have been reduced to the dictum. A statistical study cannot prove a cause-and-effect relationship between two factors.

Rodgman made explicit that he considered the evidence of smoking's harm convincing:

> The Evidence to Date: Obviously, the amount of evidence accumulated to indict cigarette smoke as a health hazard is overwhelming. The evidence challenging this indictment is scant. Attempts to shift the blame to other factors, e.g., air pollutants, necessitates acceptance of data similar to those denied in the cigarette smoke case.
>
> * * *
>
> It has been repeatedly stated that some scientists discount the cigarette smoke-lung cancer theory. This is true. But it should be noted that many of those quoted in this regard are on record with contrasting views, e.g., Berkson, the statistician, has stated "...the definitive important finding of these statistical studies is not that there is an association between smoking and lung cancer, but that there is an association between smoking and deaths from all causes generally. . . ."

504822847-2852 at 2847-2848, 2850-2852 (US 20735) (emphasis in original); Brandt WD, 96:14-99:4.

604. Despite these writings, in 1995, Dr. Rodgman stated under oath that, as of 1962, he disagreed that it was “more likely than not that cigarette smoking caused health problems.

This explanation is in direct contradiction to the clear wording of his own documents, set forth above, written 40 years before his 1995 testimony. Moreover, Dr. Rodgman had a financial incentive to offer favorable testimony to RJR when he testified. He worked for RJR as a scientist from 1954 to 1987, rising to the level of R&D Director of Fundamental Research. Since his retirement from RJR in 1987, Rodgman has been retained as a paid smoking and health litigation consultant to Womble Carlyle PLLC ("Womble"), earning as much as a total of $600,000. Rodgman PD, United States v. Philip Morris, 6/26/02, 23:20-32:8. At the same time that he was being paid as a consultant to Womble, Rodgman also served as a fact witness for RJR in its defense of various smoking and health cases. Id. at 12:10-16, 27:1-32:8, 33:2-25, 37:1-41:12, 42:14-43:11. Dr. Rodgman's recantation of the extensive analysis and findings of his research of the late 1950s and 1960s is patently not credible.

605. Lorillard also conducted research which pointed to cigarette smoking as a cause of cancer and other diseases. In the early 1960s, Lorillard conducted in-house experiments on animals that showed ciliastatic effects of tobacco smoke on the respiratory tract. The cilia are small hair-like structures in the lungs which help move particles out and keep the airways clean. Spears PD, Blue Cross/Blue Shield of New Jersey v. Philip Morris, 3/23/00, 144:4-22.

606. Philip Morris also recognized the link between cigarette smoking and disease. A July 24, 1958 memorandum written by C. Mace, head of research for Philip Morris, admitted that Philip Morris was aware that smoking was linked to lung cancer. The memorandum stated that "the evidence . . . is building up that heavy cigarette smoking contributes to lung cancer either alone or in association with physical and physiological factors." 1000305086-5087 at 5086 (US 20090).

607. Dr. Helmut Wakeham, a high-ranking Philip Morris scientist, wrote in a September 22, 1959 memorandum regarding nicotine:

> One of the main reasons people smoke is to experience the physiological effects of nicotine on the human system. Nicotine, to the best of present knowledge, does not produce cancer. Hence, in theory one could achieve the major advantage of smoking without the hazard of cancer. But nicotine in tobacco smoke is present in the tar phase, and so far a reduction in tar by filtration or otherwise has been accompanied by a comparable reduction in nicotine.

1005039423-9424 at 9424 (US 21657).

608. Liggett internally linked smoking and disease, and sought to reduce or remove hazardous constituents. In a memorandum dated March 15, 1961, Arthur D. Little, Inc., Liggett's outside research consultant, summarized the results of the work it performed for Liggett:

> 1. There are biologically active materials present in cigarette tobacco.
>
> These are: a) cancer causing
>
> b) cancer promoting
>
> c) poisonous
>
> d) stimulating, pleasurable, and flavorful.
>
> 2. There is no reason why the poisonous group, CO, HCN, NO2, etc., cannot be reduced, even though they are not seen as a primary health hazard. Methods for removal are:
>
> a) filtration (treated carbon, etc.)
>
> b) treatment for removing precursors, CN elimination
>
> c) addition as a reactant (urea for NOs).
>
> 3. Cancer promoting materials, esters, phenols, amines, can

possibly be reduced by some treatment, extraction, etc.

4. The cancer-causing materials apparently are in many substances that are pyrolyzed but seem to be associated with tobacco in greater concentration than for primarily cellulose.

These findings were marked "confidential." 2021382496-2498 at 2496 (US 20345).

609. A Liggett working memorandum titled “Alternative Theories of Carcinogenesis,” prepared on April 24, 1963, acknowledged a causal relationship between “the chemical properties of ingested tobacco smoke” and development of carcinoma that was suggested by Defendants’ scientists. 2022969727-9728 (US 20368).

**c. In the 1950s, Defendants Began Their Joint Campaign to Falsely Deny and Distort the Existence of a Link Between Cigarette Smoking and Disease, Even Though Their Internal Documents Recognized Its Existence**

610. Beginning in the 1950s, all Defendants, including TIRC, the Tobacco Institute and TIRC's successor, The Council for Tobacco Research–U.S.A., Inc. ("CTR"), issued numerous false public statements designed to mislead the public about the connection between cigarette smoking and disease.

611. A March 1954 public speech to the National Association of Tobacco Distributors by George Weissman, a Vice President with Defendant Philip Morris, captured Defendants' public position that there was no link between smoking and disease:

> For never in the history of American industry -- a history that not so incidentally had its origins in tobacco -- has one industry been under such attack as we are today, never has an industry's very existence been so dependent on its relations with the public.
>
> * * *

> Which brings me to another, and even more important current problem! -- the current medical propaganda being directed against the cigarette industry by a small number of doctors and a large number of magazines, and newspapers. As many, if not more, distinguished scientists have disputed the arbitrary statements of the few doctors. As many, if not more, distinguished researchers, have pointed out other factors such as air pollution rather than cigarette smoking. There are many scientists who question the statistics and even doubt the fact that there is a health question involved in cigarette smoking. Yet, who rated the headlines when the charges were made? Unfortunately, the cigarette industry. Where were the denials and counterclaims? You sometimes had to use a microscope to find them. . . . If we had any thought or knowledge that in any way we were selling a product harmful to consumers, we would stop business tomorrow.

2022239339-9343 at 9339, 9341 (US 21766) (emphasis in original); Brandt WD, 49:23-50:10.

612. On April 14, 1954, TIRC published "A Scientific Perspective on the Cigarette Controversy," which restated the Frank Statement's pronouncement that the Defendants had accepted "an interest in people's health as a basic responsibility, paramount to every other consideration in our business." A total of 205,000 copies were printed and sent to 176,800 doctors, general practitioners and specialists. It was also sent to the deans of medical and dental colleges. The book and an accompanying press release went to a press distribution of 15,000, including editors of daily and weekly newspapers, consumer magazines, veterans magazines, and medical and dental journals, news syndicate managers, business editors, editorial writers, science writers, radio and television commentators, news columnists, and Members of Congress. The Sunday New York Daily News (circulation 3,800,000) gave feature treatment to the booklet, devoting a major part of the page to comment and a cartoon. The story was also sent to some 1,400 radio stations. 1005039987-0008 at 9990 (US 20192); TLT0902954-2955 (US 88388).

613. In a July 1, 1954 statement by TIRC, Defendants promised not only to conduct

research on the relationship between smoking and disease, but also to make their findings known to the public. VXA2511193-1194 (US 63544).

614. On October 13, 1954, in newspapers such as the New York Daily Mirror, Timothy Hartnett, Chairman of TIRC, was quoted as saying that "no clinical evidence has yet established tobacco to be the cause of human cancer." ATC2454770-4770 (US 87049).

615. TIRC issued a July 15, 1957 press release titled "Scientist Comments on Benzypyrene Report," where it disputed the United States Surgeon General's report that benzypyrene had been identified in cigarette smoke, and stated that scientists had concluded that benzypyrene in cigarette smoke cannot be a cause of cancer in smokers. This public statement contradicted internal B&W research. 11313243-3244 (US 20280); 650200084-0095 (US 21388).

616. The Tobacco Information Committee, a TIRC subcommittee, published the first in a series of Tobacco and Health newsletters in October 1957. The newsletters contained articles that disputed the relationship between smoking and disease, criticized research that supported such a relationship, and asserted that differing opinions existed regarding tobacco use and health. The newsletter was sent to the medical and scientific communities. It reached a circulation of 520,000 in 1962, with about 315,000 copies being sent to doctors, dentists, and medical schools. The admitted purpose of the publication was to rebut and discredit the charges against tobacco. TIMN123324-3327 (US 21282); 511018410-8413 (US 22459); TIMN0070640-0656 (US 21299); TIMN0070657-0674 (US 22983); TIMN0081443-1457 (US 21307).

617. A December 16, 1957 press release from TIRC falsely stated that "[n]o substance has been found in tobacco smoke known to cause cancer in human beings." 500518708-8711 at 8708 (US 21834).

618. With the rising popularity of filters, Defendants attempted to promote their new filtered cigarettes as safer, without explicitly admitting that their previous products caused health problems. They continued to insist that the rise of filter cigarettes merely reflected the nature of consumer demand. James P. Richards, President of the Tobacco Institute, explained on June 30, 1958:

> The cigaret industry has not changed its mind. Our position was and is based on the fact that scientific evidence does not support the theory that there is anything in cigaret smoke known to cause human lung cancer. . . . [The Tobacco Institute] believes that the health of the people is more important than dividends for any industry.

TIMN0122775-2775 (US 21326).

619. In a newspaper article published on November 19, 1958, Clarence Cook Little was quoted as saying that there was scant clear evidence that smoking caused lung cancer, that much more research was needed, and that TIRC would continue to provide funds for independent research in universities and hospitals until the final answers were obtained. 501860595-0595 (US 21233).

620. In a December 27, 1958 public statement, Hartnett, still TIRC's Chairman, emphasized that links to smoking and disease remained undetermined and asserted that an increasing number of factors were being associated statistically with lung cancer. He cited occupational exposures, specific air pollutants, place of birth and residence, previous lung ailments, and nutrition, claiming that these factors and others were subjects of much scientific investigation. He said that:

> at its formation in January 1954, the Tobacco Industry Research Committee stated its fundamental position: “We believe the

> products we make are not injurious to health." We are pledging aid and assistance to the research effort into all phases of tobacco use and health. That statement and pledge are reaffirmed today by the members of the Tobacco Industry Research Committee.

500518759-8761 at 8761 (US 20636); Brandt WD, 88:6-89:4.

621. In another Tobacco and Heath newsletter, TIRC claimed:

> Continuing scientific research lends support to the position that too many unknowns exist today concerning lung cancer to warrant conclusions placing a major causative role on cigarette smoking, according to the 1957 Report of the Scientific Director of the Tobacco Industry Research Committee.

The publication also declared:

> Cigarette smoking is compatible with normal health, and even heavier-than-average cigarette smoking is compatible with better-than-average mortality rates, according to a scientific report presented before the Southern Medical Association.

MNAT00515648-5651 at 5648 (US 72185); Brandt WD, 84:10-85:2.

622. On November 27, 1959, the Tobacco Institute issued a statement attacking the article written by Surgeon General Burney on the hazards of cigarette smoking. See ¶¶137, 624; TIMN0110091-0091 (US 21319).

623. Little issued the following statement one day after publication of Burney's 1959 evaluation:

> Despite the recent research trends, the conclusions set forth in the Public Health Service review rely almost entirely on past reports that are no more conclusive today than when these reports were first published. Most of the points are not new but are familiar to the American public because they were first advanced some years ago in statistical studies that admittedly are not supported by experimental evidence.

503283464-3467 at 3465-3466 (US 22981); Brandt WD, 90:20-92:5.

624. Hill and Knowlton, TIRC's public relations counsel, explained its strategy in anticipation of the Burney report:

> Comment from TIRC for the press remains an effective way to meet anti-tobacco publicity efforts and emphasizes the multiple factors that should be considered. This, of course, is complemented with a continuing program of supplying information to give editors and writers a balanced perspective on questions of tobacco and health.
>
> * * *
>
> Published in the November 28 issue of the Journal of the American Medical Association, the article signed by the Surgeon General presented a selection of published data about smoking as related to lung cancer. Anticipating the appearance of the Burney article and learning of its contents in advance of publication, it was possible to provide the press promptly with statements from Dr. C.C. Little, Mr. James P. Richards, president of The Tobacco Institute, and others. Press stories used the tobacco industry comment in covering the Surgeon General's article.

HT0145148-5150 at 5148 (US 21177); Brandt WD, 92:23-94:7.

625. Internally, Defendants acknowledged that, as William Kloepfer, Vice President of Public Relations for the Tobacco Institute wrote to Earle Clements, President of the Tobacco Institute:

> Our basic position in the cigarette controversy is subject to the charge, and may be subject to a finding, that we are making false or misleading statements to promote the sale of cigarettes.

TIMN0072354-2356 at 2354 (US 63576).

626. But Defendants' campaign continued. On July 6, 1961, the Tobacco Institute issued a press release that quoted the Tobacco Institute President George Allen's comments on current health concerns regarding cigarette smoking: "The tobacco industry itself is more

interested than anyone else in finding out and making public the true facts about tobacco and health." Allen further claimed that "research in recent years has produced findings that weaken rather than support the claim that smoking is a major contributor to lung cancer." TIMN0104428-4429 at 4428 (US 21762).

627. George Allen, President of the Tobacco Institute, explained the Defendants' ongoing position in a radio interview:

> ALLEN: . . . All the medical authorities as far as I know, or practically all of them, agree that nobody knows what causes cancer, and specifically lung cancer, and this is a matter that remains to be found by thorough and energetic scientific investigation.
>
> * * *
>
> ALLEN: . . .That study [from the Royal College of Physicians, 1962], while considered very strong in its accusations, charges regarding smoking, nevertheless that study itself said that the majority of people smoke without any harm to their system. So if you say, am I going to get lung cancer if I smoke, a lot of people get lung cancer who have never smoked in their lives. We had a recent case, in which 27 nuns had died of lung cancer, not all together, not in the same place, but among the statistics . . . who had never been near tobacco. So, certainly one would have to say that if you just ask the question flatly, if I smoke, will I get lung cancer, there are many, many cases and evidences -- cited statements to the fact that there is no proved cause and effect relationship between the two.

500062010-2018 at 2011, 2015-2016 (US 20619); Brandt WD, 114:6-115:7.

628. On March 14, 1963, eleven months before the release of the 1964 Surgeon General's Report, the Tobacco Institute issued a press release to the New York Times containing a statement by Allen:

> Scientific opinions differ widely. Many scientists say that more

> must be learned before it will be known whether any of the factors now under study, including smoking, has a role in causation of diseases such as lung cancer, and, if so, whether that role is direct or indirect, primary or incidental. In the opinion of these scientists, singling out tobacco as a major factor is not warranted by scientific knowledge.

TIMN0131426-1426 (US 21336).

629. On April 15, 1963, ten months before the release of the 1964 Surgeon General's Report, Allen commented on a recent booklet issued by the American Cancer Society:

> There is dispute among scientists as to the causes of lung cancer. Many differing opinions exist. . . .
>
> The booklet does not purport to contribute new knowledge. It is our belief that the answers to questions about diseases such as lung cancer will come through the research laboratory, not through booklets or campaigns for or against smoking.

TIMN0118348-8349 at 8348 (US 21320).

630. A June 1963 Tobacco Institute statement by Allen similarly claimed that there was "dispute among scientists as to the causes of lung cancer." Allen reported that since 1954 the tobacco manufacturers had supported grant-in-aid research through TIRC and had contributed more than $6 million in funds towards independent medical and scientific research. While the research programs were continuing, the press release claimed that research findings regarding underlying causes of cancer and cardiovascular diseases were to that date inconclusive. TIMN0104311-4312, at 4311 (US 21317).

631. A July 9, 1963 press release reaffirmed the Tobacco Institute's public position to not accept any claims that smoking played a part in causation of human disease until further research provided facts to link smoking to certain health effects. The release quoted Allen:

> With the numerous theories, statements, and resolutions that have been presented to the public, there is some danger of losing sight of what ought to be the basic objective of all who are concerned. That is, doing the needed research. We believe the answers will be found. And they will be found in the scientific laboratory, not through pronouncements either for or against tobacco.

TIMN0098597-8598 at 8598 (US 21270).

632. In September 1963, the Tobacco Institute issued a publication titled "Tobacco and The Public Interest." It provided: "[t]here ought to be a respite from theories, resolutions and emotional statements for a time at least, so that scientists can objectively evaluate what is known and what is not known." He reaffirmed Defendants' purported commitment to research to find necessary facts:

> That is what this industry has tried to do in the past, through the research program of the [TIRC]. And that is what we shall do in the future, until enough facts are known to provide solutions to the health questions involved.

TIMN0104251-4256 at 4254, 4256 (US 21316).

633. On October 11, 1963, in order to intensify Defendants' public relations campaign in anticipation of the 1964 Report, the Tobacco Institute issued a press release: "Allen Outlines Some of Reasons Why Smoking-Health Theory is Disputed." It provided:

> [P]eople sometimes forget that there are good reasons why the theories about smoking and health problems are in dispute, and are often questioned by responsible scientists. . . . [T]he original theory about smoking and lung cancer -- the theory that smoke was a direct, contact carcinogen -- has virtually been abandoned.

He asserted that the case against smoking rested largely on statistical studies, whose meanings were questioned by many leading medical statisticians, and that there was a growing interest among scientists studying the issue as to the possible role of constitutional and genetic factors.

TIMN0118249-8250 at 8249 (US 21561).

634. On November 3, 1963, a Tobacco Institute news release titled "Tobacco Industry Confident Research Will Find Answers, George Allen Says," stated that Allen was "convinced that scientific research will discover the answers to questions about smoking and health and the causes of the diseases with which smoking has been associated." After cataloguing Defendants' positions on smoking and health, Allen "suggested a moratorium on resolutions and emotional statements about smoking and health, so that scientists can objectively evaluate what is known and what is not known." TIMN0118245-8246 at 8245, 8246 (US 77055).

635. The Surgeon General's Report was released on January 11, 1964. Following the release of the Report, Defendants continued to assert alternative causation theories. Despite overwhelming evidence from a wide range of disciplines including statistics and epidemiology, pathology and chemistry, clinical observation, and animal experimentation, as well as their own internal research, Defendants continued to claim "no proof" and continued to attempt to create doubt about the scientific findings.

636. Defendants recognized -- and used -- the denial and rationalization used by smokers. In a memo to Joseph F. Cullman of Philip Morris, George Weissman, Executive Vice President Overseas (International), described how, in response to the 1964 Surgeon General's Report, "we must in the near future provide some answers which will give smokers a psychological crutch and a self-rationale to continue smoking." Among the "crutches" and "rationales" proposed to be offered to the smokers were questions of medical causation, "that more research is needed," and that there are "contradictions" and "discrepancies." 1005038559-8561 at 8559-8560 (US 20189).

637. In testimony on June 25, 1964, five and a half months after issuance of the 1964 Surgeon General's Report, at a hearing of the Committee on Interstate and Foreign Commerce, Bowman Gray, Chairman of the Board of RJR, stated:

> I believe . . . that nearly everyone familiar with these difficult problems would agree that there are large and basic areas where there is lack of knowledge, uncertainty, and where a great deal more research is essential before definitive answers can be made. Many distinguished scientists are of the opinion that it has not been established that smoking causes disease.

501935056-5071 at 5060 (US 20690).

638. In a newspaper article dated July 12, 1964, Horace Kornegay, the Chairman and President of the Tobacco Institute, was quoted as saying: "There exists no definite proof that smoking cigarettes causes lung cancer or any other dreaded disease." TIMN013181-3181 (US 88779)3.

639. On August 17, 1964, CTR issued a press release quoting Little: "The fact remains that knowledge is insufficient either to provide adequate proof of any hypothesis or to define the basic mechanisms of health and disease with which we are concerned." MNAT00287815-7818 at 7815 (US 21224).

640. On December 29, 1965, the Tobacco Institute issued a press release reiterating that research had not established whether smoking causes disease and that it was still an "open question." The release went on to state that "[i]f there is something in tobacco that is causally related to cancer or any other disease, the industry wants to find out what it is, and the sooner the better." TIMN0123790-3793 at 3790, 3791 (US 21330).

641. On October 21, 1966, more than two years after issuance of the 1964 Surgeon

General's Report, the Tobacco Institute issued a public statement to newspapers that stated that the tobacco industry knew "of no valid scientific evidence demonstrating that either 'tar' or nicotine is responsible for any human illness." TIMN0099040-9041 at 9040 (US 21550).

### 4. The 1964 Surgeon General Report Represented a Scientific Consensus that Smoking Causes Disease

#### a. The Process and Methodology of the Surgeon General's Report

642. In 1961, the Surgeon General created his Advisory Committee on Smoking and Health to perform a comprehensive evaluation of all the existing research regarding cigarettes and disease and offer a definitive assessment. The process of the Committee's formation, its selection, its substantive work, and its findings were designed to represent a model of objective, public scientific and medical inquiry based on a rigorous and systematic assessment of the health implications of smoking. Brandt WD, 99:5-112:1. The findings of the Advisory Committee would become the Surgeon General's Report.

643. Surgeon General Luther Terry first drew up a list of some 150 individuals as potential Advisory Committee members. None were known to have taken a public position regarding the relationship of smoking and health. These individuals represented a number of fields and medical specialties from pulmonary medicine to statistics, cardiology to epidemiology. This list was then circulated to the American Cancer Society, the American Heart Association, the National Tuberculosis Association, and the American Medical Association, as well as the Tobacco Institute. Each group was permitted to eliminate any name, without citing any reason. Individuals who had already published on the issue or had taken a public position were also eliminated. The selection process indicated Terry's commitment to a process that would produce

a genuine and definitive consensus. Dr. Terry had wanted to ensure that the Report could not be attacked on the basis of its membership. All ten of the members finally selected were eminent physicians and scientists; eight were medical doctors, one was a chemist and the other a statistician. Three of the panelists smoked cigarettes, two others occasionally smoked pipes or cigars. VXA1601844-2232, at 1864-1867 (US 64057) (1964 Surgeon General Report); Brandt WD, 100:8-102:8.

644. All of the major companies manufacturing cigarettes and other tobacco products were invited to submit statements and any information pertinent to the inquiry. The replies which were received were taken into consideration by the Committee. VXA1601844-2232 at 1870 (US 64057) (1964 Surgeon General Report); Brandt WD, 100:8-102:8.

645. Terry's first ten selections all agreed to serve on the Advisory Committee, indicating to him "that these scientists were convinced of the importance of the subject and of the complete support and confidence of the Public Health Service." VXA2511396-1397 at 1396 (US 21376) (Terry, Luther L., The Surgeon General's first report on smoking and health: A challenge to the medical profession, New York State Journal of Medicine, 1254 (1983)); Brandt WD, 102:4-23.

646. The Report drew on the respective disciplinary strengths of the Advisory Committee members. Walter J. Burdette was a prominent surgeon and chair of the Surgery Department at the University of Utah; John B. Hickman was the Chair of Internal Medicine at the University of Indiana; and Charles LeMaistre was a pulmonary specialist and head of a very large cancer treatment center. The pathologists joining the Committee were: Emmanuel Farber, Chair of Pathology at the University of Pittsburgh; Jacob Furth from Columbia, an expert on the

biology of cancer; and Maurice Seevers, Chair of the University of Michigan Pharmacology Department. Louis Feiser of Harvard University was an eminent organic chemist. Completing the Committee were: Stanhope Bayne-Jones, a bacteriologist, former head of New York Hospital and Dean of Yale Medical School; Leonard H. Schumann, epidemiologist at the University of Minnesota; and William G. Cochran, a Harvard University mathematician with expertise in statistical methods. VXA1601844-2232 at 1864-1867 (US 64057) (1964 Surgeon General Report); Brandt WD, 102:9-23.

647. Terry divided the preparation of the 1964 Report into two distinct phases. The first phase, the work of the Advisory Committee, was to determine the "nature and magnitude of the health effects of smoking." The Committee sought to arrive at a clinical judgment on smoking. As one public health official explained, "What do we (that is, The Surgeon General of the United States Public Health Service) advise our patient, the American public, about smoking?" VXA2511346-1350 at 1346 (US 63531).

648. The Advisory Committee met together nine times in just over a year. In between these meetings, both Committee members and staff worked to review, critique, and synthesize what had become a formidable volume of scientific work on tobacco. Terry promised that the report on these findings would be followed by phase II, proposals for remedial action, thereby insulating the Committee from the politics that swirled around the tobacco question. Terry recognized that the Advisory Committee could only speak with authority about the scientific nature of the health risks of smoking; he would leave the policy questions to the political process. Brandt WD, 103:23-104:19.

649. Beginning with the first Report in 1964, the United States Public Health Service

has followed the scientific consensus formation approach when producing a Report of the Surgeon General on Smoking and Health. The scientific community forms a consensus on issues of causation by reviewing all of the scientific evidence available; examining that evidence for its strength, consistency, coherence, temporal association and biological plausibility; and then reaching a judgment as to whether the data support a causal relationship between smoking and a disease. Burns WD, 14:13-19.

650. The Reports go through a careful process to ensure that individual biases play no role in determining the conclusions or statements reached. That process occurs through a set of expert reviews of the Report at various stages in its preparation. Individual scientists, usually outside of the government, are first selected and asked to write chapters on a given topic. Sometimes the entire Report will be devoted to a specific topic, like cancer or heart disease or lung disease. In that case, individuals are asked to write chapters or sections on specific questions that relate to the general issue examined, so that chapters can be assembled to cover the entire topic. The individual authors selected are extremely knowledgeable in the specific area that they are asked to write about. They are directed to consider all of the pertinent scientific literature and to base the chapter's conclusions on the data presented in that literature rather than on the author's personal views. Initial drafts of chapters are prepared for each Report by the individual authors, and the initial drafts are received and then edited into chapters. Id.

651. Once the chapters are submitted by the initial author, the editors make all subsequent changes and the chapters are not resubmitted to those authors for their approval of the changes. The chapters are next sent out to a group of expert scientific reviewers for peer review of their scientific accuracy and completeness, as well as for balance, tone and appropriateness of

the conclusions drawn from the scientific data. These comments are integrated into the volume, and the entire volume is then sent out to a group of senior scientists in the academic community for further review for its accuracy, balance and tone. The Report is also formally reviewed by each of the agencies of the Public Health Service. Id.

652. Once these many reviews are completed, the editors again integrate the comments into the text to strengthen its substance. Each Report is then submitted for final formal clearance by the Centers for Disease Control, by the Assistant Secretary for Health, by the Surgeon General, and by the Secretary of Health and Human Services. Once the Report is cleared, it is transmitted as a formal requirement of law to Congress as the official position of the HHS on the issue. It is also released to the public and the press. Id. at 15:3-16:7. In the 1960s and 1970s, it took approximately one year to complete the Report preparation process. More recently, given the vast expansion in the body of smoking and health literature, it has required two to three years to accomplish the task of preparing a Report of the Surgeon General on Smoking and Health. Burns WD, 16:8-11.

653. As part of that process, the Advisory Committee established a set of criteria to evaluate the significance of a statistical association. Recognizing that such evaluation requires judgment, the Committee sought to specifically define the process, as rigorously as possible, and set forth five specific conditions for judging causal relations:

a. Consistency of the Association. Nearly all the retrospective and prospective studies produced comparable results, despite the fact that different methods were employed for collecting data.

b. Strength of the Association: the ratio of lung cancer rates for smokers versus nonsmokers. The Committee assessed

the significance of the dose effect phenomenon, finding that risk increased with amount smoked. According to the Report:

> [A]verage smokers of cigarettes have a 9- to 10 fold risk of developing lung cancer, and heavy smokers, at least a 20-fold risk. Thus it would appear that the strength of the association between cigarette smoking and lung cancer must be judged to be high.

c. Specificity of Association. This criteria, according to the Report:

> implies the precision with which one component of an associated pair can be utilized to predict the occurrence of the other, i.e. how frequently the presence of one variable (e.g., lung cancer) will predict, in the same individual, the presence of another (e.g., cigarette smoking).
>
> In a discussion of the specificity of the relationship between any factor possibly causal in character and a disease it may produce, it must be recognized that rarely, if ever, in our biologic universe, does the presence of an agent invariably predict the occurrence of a disease. Second, but not less important, is our growing recognition that a given disease may have multiple causes.

In the current case, the specificity of the association was especially strong. The Report explained, "of the total load of lung cancer in males about 90 percent is associated with cigarette smoking."

d. Temporal Relationship of Associated Variables: the Advisory Committee wrote:

> Exposure to an agent presumed to be causal must precede, temporally, the onset of a disease which it is purported to produce. . . . [N]o evidence has thus far been brought forth to indicate that the initiation of the carcinomatous process in a smoker who developed lung cancer antedated the onset of smoking.

e. Coherence of the Association: the Advisory Committee concluded:

> A final criterion for the appraisal of causal significance of an association is its coherence with known facts in the natural history and biology of the disease.

VXA1601844-2232 at 2033-2036 (US 64057) (1964 Surgeon General Report); Brandt WD, 105:6-111:7.

654. The 1964 Surgeon General's Advisory Committee's assessment of causality was based on a coherent and logical set of criteria, which have become the basic methodology for causal inference concerning disease since issuance of the Report. Brandt WD, 104:20-108:21.

**b. The Conclusions**

655. The 387-page 1964 Surgeon General's Report, citing 7,000 articles, came to the following conclusions:

> Cigarette smoking is associated with a 70 percent increase in the age-specific death rates of males. The total number of excess deaths causally related to cigarette smoking in the U.S. population cannot be accurately estimated. In view of the continuing and mounting evidence from many sources, it is the judgment of the Committee that cigarette smoking contributes substantially to mortality from certain specific diseases and to the overall death rate.
>
> * * *
>
> Cigarette smoking is causally related to lung cancer in men; the magnitude of the effect of cigarette smoking far outweighs all other factors. The data for women, though less extensive, point in the same direction.
>
> * * *
>
> The risk of developing lung cancer increases with duration of smoking and the number of cigarettes smoked per day, and is diminished by discontinuing smoking.

VXA1601844-2232 at 1884 (US 64057) (1964 Surgeon General Report); Brandt WD, 108:22-

111:7.

656. The 1964 Report carefully evaluated the animal studies that had been conducted up to that time:

> Condensates of tobacco smoke are carcinogenic when tested by application to the skin of mice and rabbits and by subcutaneous injection in rats.
>
> * * *
>
> Bronchogenic carcinoma has been produced in laboratory animals by the administration of polycyclic aromatic hydrocarbons, certain metals, radioactive substances, and viruses. The histopathologic characteristics of the tumors produced are similar to those observed in man and are predominantly of the squamous variety.

VXA1601844-2232 at 1884, 1994-1997, 2016 (US 64057) (1964 Surgeon General Report); Brandt WD, 108:22-111:7.

657. The 1964 Report found much higher death rates among smokers, as compared with nonsmokers; these rates increased with consumption:

> The death rate for smokers of cigarettes only, who were smoking at the time of entry into the particular prospective study, is about 70 percent higher than that for nonsmokers. The death rates increase with the amount smoked. For groups of men smoking less than 10, 10-19, 20-39, and 40 cigarettes and over per day, respectively, the death rates are about 40 percent, 70 percent, 90 percent, and 120 percent higher than for nonsmokers. The ratio of the death rates of smokers to nonsmokers is highest at the earlier ages (40-50) represented in the studies, and declines with increasing age. The same effect appears to hold for the ratio of the death rate of heavy smokers to that of light smokers. In the studies that provided this information, the mortality ratio of cigarette smokers to nonsmokers was substantially higher for men who started to smoke under age 20 than for men who started after age 25. The mortality ratio was increased as the number of years of smoking increased. In two studies which recorded the degree of inhalation, the mortality ratio for a given amount of smoking was greater for inhalers than for

> non-inhalers.

VXA1601844-2232 at 1888-1889 (US 64057) (1964 Surgeon General Report); Brandt WD, 108:22-111:7.

658. The 1964 Report also reached conclusions as to coronary heart disease:

> Although the causative role of cigarette smoking in deaths from coronary disease is not proven, the Committee considers it more prudent from the public health viewpoint to assume that the established association between cigarette smoking and coronary disease has causative meaning than to suspend judgment until no uncertainty remains.

The 1968 Report went a step further, concluding that

> [b]ecause of the increasing convergence of epidemiological and physiological findings relating cigarette smoking to coronary heart disease it is concluded that cigarette smoking can contribute to the development of cardiovascular disease and particularly to death from coronary heart disease.

VXA1601844-2232 at 1885 (US 64057) (1964 Surgeon General Report); ATC1081418-1542 at 1430 (US 65351) (1968 Surgeon General Report).

659. From both a clinical and a public health perspective, the 1964 Report concluded that stopping smoking lowered an individual's risk of disease and health:

> Cigarette smokers who had stopped smoking prior to enrollment in the study had mortality ratios about 1.4 as against 1.7 for current cigarette smokers. The mortality ratio of ex-cigarette smokers increased with the number of years of smoking and was higher for those who stopped after age 55 than for those who stopped at an earlier age.

VXA1601844-2232 at 1888-1889 (US 64057) (1964 Surgeon General Report).

660. The 1964 Surgeon General's Report on Smoking and Health is widely considered by historians to be one of the most significant documents in the history of twentieth century

public health. Brandt WD, 99:5-112:1.

### 5. Post-1964 Research on the Adverse Health Effects of Smoking and Defendants' Persistent Denials Thereof

#### a. Following Publication of the 1964 Report, the Scientific Community Continued to Document the Link Between Smoking and an Extraordinary Number of Serious Health Consequences

661. Smoking and health is one of the most studied subjects in the field of public health. The Smoking and Health Database, maintained by the Centers for Disease Control and Prevention, United States Department of Health and Human Services, is a bibliographic database -- accessible via the internet -- which includes more than 62,000 items on smoking and health and covers over thirty years of information. The medical literature is replete with extensive epidemiological studies, conducted over decades, comparing the disease and death rates of millions of smokers and nonsmokers. Every relevant population and demographic group has been examined. Examples of these studies are: American Cancer Prevention Study I and II; British Physicians Study; Dorn Study of United States Veterans; National Health Interview Study; Current Population Survey; and the Behavioral Risk Factor Survey. Burns WD, 9:2-16.

662. This body of literature has been cited, reviewed, and discussed in Reports of the Surgeon General on Smoking and Health published in 1964, 1967, 1968, 1969, 1971, 1972, 1973, 1974, 1975, 1976, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1988, 1989, 1990, 1992, 1994, 1998, 2000, and 2001. Id.

663. The scientific conclusions presented in each of the Reports of the Surgeon General are based on the consensus of then-existing scientific understanding. Burns WD, 14:10-12.

### b. Defendants' Internal Documents and Research from the 1960s, 1970s, and Beyond Reveal Their Continued Recognition That Smoking Causes Serious Adverse Health Effects and Their Fear of the Impact of Such Knowledge on Litigation

664. By at least January 1964, with the issuance of the Surgeon General's 1964 Report, Defendants knew there was a consensus in the scientific community that smoking caused lung cancer and other diseases. Despite that fact, they publicly insisted that there was a scientific controversy and disputed scientific findings linking smoking and disease knowing their assertions were false.

665. Following issuance of the 1964 Surgeon General's Report, Helmut Wakeham, then Vice-President of Research and Development at Philip Morris Inc., admitted in a research report that there was "little basis for disputing the findings [of the 1964 Surgeon General's Report] at this time" and acknowledged that the Report reflected a "professional approach" of the Advisory Committee. However, Philip Morris continued to maintain – for another thirty-five years – its public position that the causal link between smoking and health was an "open question." 1000335612-5625 at 5615, 5616 (US 22986).

666. According to a February 1964 report prepared by Alan Rodgman at RJR, "Cigarette smoke from any tobacco type or tobacco blend contains carcinogenic components." The report also indicated that "[n]one of the chemical data acquired in our studies or in studies conducted elsewhere is inconsistent with reported biological, pathological, or statistical data indicting cigarette smoke as a health hazard." 504912643-2713 at 2704 (US 20736).

667. In August 1964, Rodgman recognized in an internal RJR document:

> Many nitrosamines [substances in tobacco smoke] have been shown to be carcinogenic for different organs in several species of

> animals. As nitrosamines are formed by the reaction of oxides of nitrogen with secondary amines, it is possible that cigarette smoke could contain nitrosoanabasine and nitrosonornicotine. Nitroanabasine, which is a derivative of the carcinogenic nitrosopiperidine, has now produced many tumors of the esophagus when given orally to rats.

501013277-3277 (US 20670).

668. In 1966, in a semi-annual report on Philip Morris's "Project 6900," which explored the biological activity of tobacco smoke, Project Director Peter C. Luchsinger noted that "cigarettes will most likely be implicated as one of the causative agents in these diseases [emphysema and bronchitis]." Luchsinger noted that in a series of long-term primate experiments financed by Philip Morris, monkeys forced to inhale smoke had a higher rate of emphysema than those in a non-smoking control group. Project 6900 included other experiments with smoking rodents, cats and other animals to determine whether different cigarettes affected lung function in a different manner or to a different degree. Luchsinger's report, never released to the public and marked "[n]ot to be taken from this room," concluded that, based on long-term inhalation studies, "gross lung pathology can be induced by smoking cigarettes." 100341400-1414 at 1402, 1406 (US 20095).

669. A May 1967 report on "Project 6900" described further tests with mice, pigs, monkeys and cats, concluding that filtered smoke was "no less tumorigenic than nonfiltered smoke." 1000342063-2073 at 2065 (US 20096).

670. Philip Morris Senior Scientist, Dr. Helmut Wakeham, informed Philip Morris executives on January 10, 1969, that "[n]ow we have a study of the effect of smoking in pregnancy which supports previous conclusions that smoking mothers produce smaller babies,"

and that the medical field recognized that "smaller babies suffer detrimental effects all through life," including "lower intelligence test scores at age 10." 1000211305-1307 at 1306 (US 20080).

671. A 1969 Phillip Morris memorandum revealed:

> A review of recent mouse skin painting data from the Harrogate Laboratories appearing in progress reports of the Tobacco Research Council (Great Britain) indicates strong support for previously published data on the following points: Cigaret smoke condensate painted on the backs of mice over a two-year period produces tumors in numbers proportionate to the amount of condensate applied. In other words, the dose-response relationship is clearly being followed in these experiments.

2025010581-0583 at 0591 (US 20405).

672. In the 1960s, RJR established a facility in Winston-Salem, North Carolina, which used mice to research the health effects of smoking. In this facility, nicknamed the "Mouse House," RJR scientists researched a number of specific areas, including studies of the actual mechanism whereby smoking causes emphysema. Internally, an RJR-commissioned report favorably described the Mouse House work as the most important of the smoking and health research efforts because it had come close to determining the underlying mechanism of emphysema. Bumgarner PD, Texas v. American Tobacco, 11/11/86, 32:9-33:5

673. Research done in RJR's science and health group located at the Mouse House was routinely withheld from the scientific community -- scientists were forbidden to both discuss and publish their findings. Id. at 35:3-38:18.

674. As a result of the Mouse House work, RJR was aware that smoking was linked to emphysema. After extended exposure to smoke, the animals suffered weight loss and changes in

metabolism of lipids both in surfactant and in lung and liver. Id. at 63:17-66:15, 68:14-20.

675. RJR knew that exposing rabbits to tobacco smoke led to: slowing of heartbeat during puffs, decrease in pulse pressure, increased number of goblet cells, alveolar collapse, erythema of nasopharynx, acute pulmonary edema, erythema, endocardial hemorrhage, kidney disease, bronchial hyperplasia, emphysema, epithelial hyperplasia, bronchial edema, bronchiolar plugs, and gross lesions on lungs. 515384994-4999 (US 87983) (1969 Research Report titled "Initial Attempts at Exposing Rabbits to Whole Cigarette Smoke").

676. Moreover, the fact that RJR scientists had produced emphysema in chronic-smoke- exposed rats was known to Philip Morris. In a 1969 Philip Morris document concerning the biological research program at the Mouse House and the linkage it showed to smoking and disease, a Philip Morris scientist wrote:

> I met Dr. Price from R.J Reynolds at the CTR-USA meeting of December 11 and 12, 1969. He mentioned doing chronic cigarette smoke exposure studies with rats. The animals received up to 500 cigarettes and emphysema was produced.

1001882748-2749 at 2748 (US 26123).

677. In 1970, Philip Morris's President complained to RJR about the work going on in the Mouse House. Despite the progress made there, RJR responded to the complaint by abruptly closing the Mouse House -- disbanding the entire research division in one day, without giving notice to the staff, firing all twenty-six scientists at the Mouse House, and destroying years of smoking and health research. 110315968-5971 (US 26378). The scientists were told that the terminations were not a reflection on their work, but that "economic reasons" caused a change in the direction of the company. When they were dismissed, they were reminded that they had

signed confidentiality agreements that meant they were not to discuss company research. Bumgarner, PD, Texas v. American Tobacco, 11/11/96, 38:19-44:4, 44:5-53:24.

678. At the meeting informing employees working at the Mouse House of its disbanding, the group was informed by its supervisor that the legal department had requested their lab notebooks. They were initially told that the notebooks would be returned to them, but they were not. Later, Anthony V. Colucci, Director of the company's Scientific Litigation Support Division, informed them that some of the notebooks had been accidentally destroyed in the legal department. Id. at 38:19-44:4. Only one was ever produced as evidence in this case.

679. Defendants also obtained evidence about the health effects of smoking that was contrary to their public statements from research they funded jointly. Dr. Gary Huber conducted smoking and health research funded by Defendants from 1972 to 1980 while working at Harvard University Medical School. Huber's research was conducted pursuant to a written agreement between Harvard and B&W, Liggett, Lorillard, RJR, and Philip Morris. The agreement created the Harvard Research Tobacco and Health Program, with Huber as its head and chief investigator. Huber PD, Texas v. American Tobacco, 9/20/97, 11:9-12:16, 24:1-11, 24:13-25:9.

680. Huber and his group used laboratory animals to conduct numerous studies into the response of the lungs to tobacco smoke. These studies assessed the effects of smoke on lung airways, lung parenchyma, and the heart and cardiovascular systems of animals. The studies also looked at COPD, emphysema, chronic bronchitis and coronary artery disease. Huber's animal studies utilized commercially available and research cigarettes, including commercially available cigarettes supplied by Defendants, and produced human-type diseases in the lungs of animals that inhaled cigarette smoke. The inhalation studies demonstrated changes in animal lungs that

Huber's group concluded were analogous to human diseases. Id. at 12:4-13:20, 40:13-15, 40:17-25, 42:2-43:3.

681. Huber specifically reported to his sponsors -- B&W, Liggett, Lorillard, RJR, and Philip Morris -- that his research demonstrated a response to inhaled cigarette smoke, including disease mechanisms similar to those associated with diseases in humans. Id. at 12:20-13:20, 14:17-15:1, 15:6-16, 17:24-18:14, 18:22-24, 19:3-9.

682. Huber also conducted research funded by Defendants that studied changes in human smoking behavior as a function of lower and higher nicotine levels in cigarettes. The research demonstrated that smokers of lower nicotine cigarettes had an increased risk of developing pulmonary disease. Huber found that "compensation," or smoking behavior modifications, exhibited by smokers of lower nicotine cigarettes, rendered such cigarettes potentially more harmful than higher nicotine counterparts because more intense inhalation carried the smoke deeper into the lung where adenocarcinoma generally occurs. Id. at 49:6-50:3, 50:5-51:4, 51:6-11.

683. Another group of inhalation studies conducted by Huber focused on rats. The research showed that rats exposed to cigarette smoke developed emphysema. Huber reported these results to Defendants. Id. at 17:16-18, 18:21-24, 19:3-9.

684. Huber had frequent contact with scientists working for Defendants, including Alexander Spears of Lorillard, Alan Rodgman of RJR, and Thomas Osdene of Philip Morris. Spears made several site visits to Huber's laboratory and reviewed his progress reports. Spears admitted that the research conducted by Huber concluded that tobacco smoke caused changes in the respiratory tracts of the animals consistent with chronic obstructive lung disease. Id. at

27:15-28:23, 29:4-13; Spears PD, Texas v. American Tobacco, 7/24/97, 233:1-238:12, 239:8-16; Spears PD, Cipollone v. Liggett, 7/26/84, 177:1-181:25.

685. On September 26, 1977, Philip Morris's Assistant General Counsel, Alexander Holtzman, sent a warning to the company President, Joseph Cullman, informing him that the results from the Harvard Project had led Huber to the conclusion that exposure of rats to cigarette smoke for six months causes emphysema and that a paper announcing those results would be delivered at the American College of Chest Physicians meeting in October, 1977. Holtzman indicated that attorney William Shinn of Shook, Hardy & Bacon, under the direction of industry counsel at the Tobacco Institute, had been sent to modify Huber's views on the results of his research. The attorney did not succeed in altering Dr. Huber's interpretation of the results of his study. The Tobacco Institute prepared a press release to mitigate the damage in the event Huber's interpretation received any media attention. 1005053856-3856 (US 20197).

686. In 1980, Huber sought to continue his smoking and health research on animals at a time when he was making significant progress, but Defendants cut off funding for his research at Harvard and denied his request for funding after he moved later that year to the University of Kentucky. In a 1980 meeting, Defendants' attorneys told Huber that the reason funding for his research had been discontinued was because he was "getting too close to some things." The attorneys included Lee Stanford from Shook, Hardy & Bacon, Ernest Pepples from B&W, and Arthur Stevens from Lorillard. Huber PD, Texas v. American Tobacco, 9/20/97, 41:4-17, 43:21-44:15, 46:6-10, 46:12-24, 47:2-5, 73:12-74:18.

687. A number of exhibits were identified and introduced by plaintiff's and defendant's counsel during Dr. Huber's September 20, 1997 deposition in the State of Texas litigation. The

documents shed light on Dr. Huber's relationship with Defendants and provide specific examples of information withheld from him by Defendants. HTT0010212-0214 (US 88807); HTT0010215-0216 (US 88808); HTT0010217-0219 (US 88809); HTT0010220-0222 (US 88810); HTT0010223-0225 (US 88811); 1335866-5870 (US 88812); HTT0010359-0360 (US 88815); HTT0010361-0363 (US 88816); HTT0010364-0368 (US 88817); 1000037069-7069 (US 88818); 501009723-9727 (US 88819); 01421596-1600 (US 88820); 03540193-0194 (US 88821); 01346204-6208 (US 88822); HTT0010392-0404 (US 88823); 504822923-2923 (US 88824); 504912643-2713 (US 88825); HTT0010502-0503 (US 88826); 0000130803-0803 (US 88827); 01370915-0915 (US 88828); HTT0010508-0510 (US 88829); HTT0010511-0513 (US 88830); HTT0010514-0516 (US 88831); HTT0010517-0531 (US 88832); HTT0010532-0534 (US 88833).

688. When Huber was subpoenaed by the State of Texas to testify in its case against the Defendants in 1997, lawyers for Defendants, including Robert McDermott at Jones Day and Lee Stanford at Shook, Hardy & Bacon, contacted him and urged him "to keep the faith, to hold the line." Huber PD, Texas v. American Tobacco, 9/20/97, 99:21-100:2, 100:4-8. The attorneys implied to Huber that he did not "fully appreciate the full weight of Shook, Hardy & Bacon and Jones Day" representatives of the tobacco industry. The calls caused Huber to fear for the safety and financial security of his family. Id. at 101:4-8, 10-21. Huber perceived a clear message: Defendants wanted to keep him silent. Id. at 102:3-17.

689. After the conclusion of his Texas case deposition, Defendants obtained an order sealing the transcript to keep Dr. Huber's testimony from public view and vigorously opposed efforts by litigants to obtain the transcript. Those efforts continued in this case, before this Court

and in the Eastern District of Texas. Defendants succeeded in keeping the transcript sealed for almost seven years, but ultimately, the United States obtained an order from the Eastern District of Texas in 2004, unsealing the transcript, which is cited at length, supra. In re United States' Motion to Modify Sealing Orders, 5:03-MC-2 (E.D.Tex. June 18, 2003), Order of June 8, 2004.

690. Scientists working for Defendants also recognized the validity of research that Dr. Oscar Auerbach conducted with smoking beagles in the 1960s and early 1970s.

691. Principal Philip Morris scientist Raymond Fagan sent a memorandum dated February 25, 1970 to Helmut Wakeham, then Philip Morris's Research Director, on "Auerbach's Smoking Beagles" that described his visit to Auerbach's laboratory to observe the smoking dogs and tissue slides. Fagan observed:

> I would say that the experiment is a crude one but effective in that carcinoma in dogs has been produced. . . . The crux of the situation is whether there is general agreement by qualified pathologists that carcinoma . . . has indeed been produced. And even if the cancer-production is invalidated the obvious emphysema produced cannot be denied.

1000837391-7392 at 7392 (US 20109).

692. On April 3, 1970, a company researcher of Gallaher Ltd. (American Tobacco Company's British-based sister company) wrote his managing director a confidential memo titled "Auerbach/Hammond Beagle Experiment" describing Auerbach's research as "undoubtedly a significant step forward" and noting: "[W]e believe that the Auerbach work proves beyond reasonable doubt that fresh whole cigarette smoke is carcinogenic to dog lungs and therefore it is highly likely that it is carcinogenic to human lungs." The research manager continued, "[t]he results of the research would appear to us to remove the controversy regarding the causation of

the majority of human lung cancer," and "[t]o sum up, we are of the opinion that Auerbach's work proves beyond all reasonable doubt the causation of lung cancer by smoke." 321993992-3995 at 3992, 3993, 3994 (US 21688).

693. After a review of a presentation before the Tobacco Working Group, Lorillard's Alexander Spears admitted that "[t]he slides (shown by Auerbach) represented obvious lung pathology with increased cellular proliferation with smoke exposure." Spears PD, Cipollone v. Liggett, 7/26/84, 190:1-191:25.

694. A July 21, 1970 letter from B&W outside counsel Shook, Hardy, Ottman, Mitchell & Bacon to B&W General Counsel Debaun Bryant, reveals that B&W was concerned that statements of B&W and BAT employees, “which appear to demonstrate a belief on the part of company personnel that cigarette smoking has been established as a general health hazard or a cause of some particular disease or diseases,” would expose B&W and BAT to smoking and health litigation. As examples, the letter discusses statements memorialized in the minutes of a conference at Kronberg, Germany, held from June 2 through 6, 1969 that was attended by both BAT and B&W researchers. It was David Hardy's opinion that such statements "constitute a real threat to the continued successful defense of smoking and health litigation." The statements which generated concern included, but were not limited to:

> There is a possibility that the experiments taking place at R. & D. E., Southampton, with the membrane of the chicken embryo, might be showing genuine carcinogenic effects in days; and
>
> The conclusion of the Conference was that at the present time the Industry had to recognize the possibility of distinct adverse health reactions to smoke aerosol: (a) Lung Cancer (b) Emphysema and Bronchitis. . . .

The letter also discusses additional concern stemming from the existence of a "'BAT/B&W Cost & Risk Pooling Agreement' executed in July 1969." 681805313-5319 at 5313, 5314, 5316 (US 30935).

695. Defendants also reviewed outside research that confirmed that smoke constituents were carcinogenic. A February 14, 1973 research report distributed to Defendants and their outside law firms linked smoking to cancer. The report, titled "Cigarette Smoke Condensate Preparation and Dermal Application to Mice," was prepared by Hazelton Laboratories and submitted to American, B&W, Liggett, Lorillard, Philip Morris, RJR, and the law firm of Covington & Burling. It reported that "97 of the 100 mice developed gross lesions in the skin in the area of dermal applications of benzo(a)pyrene." Examination indicated that these were squamous cell carcinomas. 501547434-7448 at 7444 (US 20682).

696. On January 7, 1969, Wakeham informed his superiors at Philip Morris that an abstract of a paper prepared by a researcher receiving CTR funding stated: "scientific findings suggest that inhalation of fresh cigarette smoke may enhance carcinogenesis in mice." 682011667-1671 at 1668 (US 21021).

697. In 1974, David Hardy of Shook, Hardy & Bacon advised BATCo against admitting to the public what its scientists knew internally -- that smoking causes disease. At the time, BATCo was considering placing a warning on cigarette packages sold in England -- with no government attribution -- that stated that smoking "causes lung cancer, bronchitis, heart disease." In a letter addressed to BATCo, Hardy advised that this admission of fact would impede the defense of smoking and health litigation in the United States. He wrote:

> The proposed new warning removes the attribution of the warning

> to "H.M. Government," and instead appears to be a voluntary and direct admission by the cigarette manufacturer that the cigarettes contained in the package cause "lung cancer, bronchitis, heart disease." A wholly owned subsidiary of the manufacturer would, in our opinion, be adversely and prejudicially effected by such a voluntary warning even though it is a separate entity.
>
> * * *
>
> Once the fact and content of the warning got before a jury in the United States in a case involving the subsidiary, the defense of "no proof of causation" would be lost for all practical purposes. Such a result would indeed be unfortunate in view of the fact that in every instance where the matter has been explored in our Courts through expert testimony and otherwise, the cigarette manufacturer has prevailed.

110318156-8157 at 8156, 8157 (US 34974).

698. Similarly, a January 1, 1976 letter from B&W Vice President and General Counsel, Ernest Pepples, to BATCo General Counsel, H.A. Morini, discusses B&W's concern that voluntary consent by BAT to placing additives under the Tobacco Medicine Act would prejudice B&W, because it could attribute to B&W knowledge of specific hazards, which would badly weaken B&W's litigation position. MNATPRIV00023457 (US 86869).

699. In 1980, in a confidential memo analyzing BAT public positions and their impact on B&W's stance in litigation , BATCo internally admitted: "It is simply incorrect to say, 'There is still no scientific proof that smoking causes ill-health.'" 680050983-1001 at 0998 (US 20981).

700. Philip Morris scientist James Charles (who would later serve as the company's Vice President of Research) sent a February 23, 1982 memorandum to department head Thomas Osdene, responding to the 1982 Surgeon General's Report on Smoking and Health: "Cigarette smoke <u>is</u> biologically active" and "cigarette smoke condensate applied to the backs of mice

causes tumors." He listed nine facts relating to the biological activity of cigarette smoke and told Osdene "you may shred this document . . . or use [it] in any way you see fit." 1003171563-1567 at 1564, 1566 (emphasis in original) (US 26137).

701. On May 4, 1982, a BATCo consultant, Francis Roe, wrote to BAT and explained why he believed the industry position on causation to be unsupported, noting that "[i]t is not really true, as the American Tobacco industry would like to believe, that there is a raging worldwide controversy about the causal link between smoking and certain disease." 100432193-2203 at 2194 (US 20182).

702. RJR's recognition of the validity of epidemiological and scientific studies led Anthony V. Colucci, Director of the company's Scientific Litigation Support Division, to write to attorney James E. Young of Jones, Day, Reavis & Pogue to push the "mechanistic argument" of causation. In a 1986 memorandum, Colucci explicitly admitted: "that cigarettes are a risk factor for human lung cancer is an irrefutable fact." 507910855-0856 at 0855 (US 20803).

703. By 1980, Lorillard was aware that every major medical and scientific group in America that had studied the question had concluded that smoking causes disease. The company was equally aware that the only scientific studies to disagree with that conclusion were performed or funded by the tobacco industry. Spears PD, Texas v. American Tobacco, 7/24/97, 58:3-60:12.

704. The testimony of two high-level Philip Morris scientists fully corroborates the documentary evidence cited above that Defendants were totally aware of and convinced that smoking caused disease. First, former Philip Morris scientist Dr. William Farone, who worked at Philip Morris for 18 years and was impressive and credible as both a fact and expert witness,

when asked what the view was among Philip Morris scientists on the question of whether smoking cigarettes is a cause of lung cancer and other diseases, responded:

> There was widespread acceptance that smoking caused disease. I never talked with a scientist at Philip Morris who said that smoking doesn't cause disease.

When asked what the basis was for this understanding, he stated:

> The compelling epidemiology such as that recounted in the Surgeon's General's reports, and our knowledge about the chemicals that were created by cigarettes and what was delivered to the smoker, hundreds of times per day on average.

Dr. Farone was also asked whether any of these executives in his discussions with them challenged the validity of the scientific evidence that smoking causes disease, and answered:

> No. Their comments generally focused on how the company could or should respond, not to whether the scientific evidence was valid. Remember, a main reason why they hired me in 1976 was to help develop a less hazardous cigarette. It seemed to me at the time I was hired, and certainly was the case during my entire time there, that hiring me for that job was itself implicit recognition that the cigarettes that were out there being sold were causing disease.

Farone WD, 66:11-18, 68:22-69:10.

705. Second, Dr. Jerry Whidby, a former Philip Morris scientist who continues to appear as a fact and expert witness for the company and was paid $2800 per day by Philip Morris for his testimony in this case, responded to questions from the Court on the same subject:

> THE COURT: And you were asked in this question: "How long have you recognized that smoking was dangerous and caused cancer, emphysema and other disease?"
>
> And am I correct that you answered: "Since years before I went to work for Philip Morris."
>
> So the answer would be, I gather, that for years before 1972, you

> recognized that smoking caused cancer, emphysema and other disease, is that correct?
>
> THE WITNESS: Yes, that is correct. When I was in high school and grammar school, we talked about it in school.
>
> THE COURT: And the next question was: "Have you ever doubted that smoking was dangerous and caused cancer, emphysema and other diseases?"
>
> And you answered: "No, I have never doubted that." Is that correct?
>
> THE WITNESS: That's what I answered, yes.
>
> THE COURT: And were you aware from 1972 for at least 20 years, more than 20 years that you were working at Philip Morris, that Philip Morris was taking the public position that it was an open question as to whether smoking was dangerous and caused cancer, emphysema and other diseases?
>
> THE WITNESS: I was aware of some of those statements, not all the statements, no.
>
> THE COURT: . . . but did you not also testify in your direct that that was the common knowledge amongst your scientific colleagues at Philip Morris, that smoking was dangerous and caused cancer, emphysema and other diseases?
>
> THE WITNESS: People I worked around who shared their beliefs with me, yes, that's what we thought. We were there to make the cigarette better.

Whidby TT, 2/22/05, 14112:6-14113:11.

#### c. Despite Their Internal Knowledge, Defendants Continued, From 1964 Onward, to Falsely Deny and Distort the Serious Health Effects of Smoking

706. Defendants responded to the 1964 Surgeon General's Report, which reflected the scientific consensus that smoking causes lung cancer with a campaign of proactive and reactive

responses to scientific evidence that was designed to mislead the public about the health consequences of smoking. Defendants' goal was to create and maintain the smoking habit so as to enhance corporate profits.

707. In November 1967, at the direction of outside lawyers David Hardy of Shook, Hardy & Bacon, and Ed Jacobs of Cabell, Medinger, Forsyth & Decker, the Tiderock Corporation, the Tobacco Institute's public relations firm, prepared an action plan titled "The Cigarette Controversy." The action plan proposed to influence public opinion by creating specific initiatives to re-open the "open question" cigarette controversy. The program called for the creation of a position paper for intra-industry use as well as one for distribution to the media and public. The plan included targeted categories for mailings such as the medical profession, scientists, communicators (press, radio, television), educators, top public figures, and 10,000 top corporate presidents. It also detailed the publication of magazine articles. 1005109086-9106 (US 20211); TIMN0070816-0821 (US 77048); 502644592-4616 (US 20703).

708. In 1968, the Tobacco Institute published a pamphlet titled "The Cigarette Controversy: An Examination of the Facts by the Tobacco Institute -- The Tobacco Industry's Contribution to Health Research." It declared:

> In order to help advance scientific understanding of the causes, as well as the means of preventing and controlling disease, the American tobacco industry has contributed millions of dollars for independent research on smoking and health. During the past thirteen years, the industry has supported over 300 independent health studies through the industry's Council for Tobacco Research - U.S.A. Do cigarettes cause disease? In spite of all the debate -- in spite of all of the research -- that question is still unanswered. The industry will continue to seek the truth in the continuing cigarette controversy.

TINY0006498-6601 at 6534-6536 (US 87056); TIMN0104765-4868 at 4802-4803 (US 21613).

709. An April 23, 1968 publication of The Cigarette Controversy re-stated and re-emphasized Defendants' views:

> Q: Has any important new evidence against cigarettes been reported in recent years?
>
> A: No. Cigarettes today are branded guilty on virtually the same kind of evidence that was considered insufficient only a few years ago.
>
> * * *
>
> Q: Is smoking a health hazard?
>
> A: That question is still an open one.
>
> * * *
>
> At that time [the early 1950s], most scientists considered the findings of these studies insufficient to prove a case against smoking. Since then, many other studies have been done. But there is still no proof that cigarette smoking is a cause of lung cancer -- or any other disease.

502644592-4616 at 4595, 4596 (US 20703).

710. In a 1969 press release titled "American Tobacco Refutes Anticigarette Charges," American announced it was distributing another version of "The Cigarette Controversy." The booklet purported to review research done over the prior fifteen years and concluded that, in the absence of medical evidence, "the question is still an open one." It was mailed to more than 140,000 stockholders of American. TLT0962304-2309 at 2304 (US 88668).

711. This updated version presented "facts" explaining that there was "controversy" surrounding the science of smoking and health that must be answered by further scientific

research and public discussion. The pamphlet was reviewed by CTR's Scientific Director Robert Hockett prior to publication. According to a letter from David Hardy to Hockett, this Tobacco Institute booklet was written to explain to the public the "reasons why representatives of the Cigarette Industry contend that the case against cigarettes has not been proved." Hardy explained that "the Tobacco Institute has felt it desirable to have some readable document or pamphlet to give them which spells out some of the unanswered questions." 1005152849-2896 (US 20226); HK0108004-8004 (US 21171).

712. In 1971, the Tobacco Institute revised and republished another edition of "The Cigarette Controversy -- eight questions and answers." It was distributed by direct mail to physicians, librarians, newspaper and magazine editors, Members of Congress and their top aides, members of public relations groups, medical school faculties, leading tobacco growers and executives of industry supplier firms, other United States business leaders, college and university presidents and department heads, science writers, and business and financial writers and securities analysts. Copies were also mailed to a large list of ministers. The mailing went to nearly 350,000 persons. It was sent to over 300 radio and television station managers together with a sixty second announcement. TIMN300233-0257 (US 21675); 690014815-4838 (US 21041); TIMN0080470-0477 (US 21716); 03768320-8337 (US 20064).

713. In 1971, the Tobacco Institute published a shorter summary of the 1970 "Cigarette Controversy" pamphlet titled "Smoking/Health An Age-Old Controversy." This leaflet briefly stated Defendants' opinions on the questions of causation and the validity of the scientific research conducted to date. A November 9, 1973 Tobacco Institute memorandum described "Smoking/Health An Age-Old Controversy" as a "good synopsis of the [1970] pamphlet" and a

"shorter version of the industry stand on the cigarette controversy" that should "be put to good use." TIMN0121524-1527 (US 21710); TIMN0395428-5429 at 5429 (US 21365).

714. In November 1971, RJR requested and received from the Tobacco Institute 1,000 copies of the pamphlet "Smoking/Health An Age Old Controversy" for use in responding to inquiries from children about smoking and health. In February 1973, 500 more copies were requested, again for responding to school children. TIMN0121524-1527 (US 21710); 500005148-5148 (US 21323); 500013882-3882 (US 20611).

715. After the publication of "The Cigarette Controversy," the Tobacco Institute published a series of advertisements in various magazines, inviting readers to request copies of the pamphlet. For example, on November 6, 1972, the Tobacco Institute ran an advertisement in The Nation that stated "YOU HAVE A RIGHT TO A FULL DISCUSSION ABOUT smoking and health. The cigarette question is still a question. Send for free booklet, 'The Cigarette Controversy.'" TIMN0124460-4460 (US 21333).

716. The Tobacco Institute published a 1974 version of "The Cigarette Controversy" and continued to argue that objective research was needed to explore questions about smoking and health. The Cigarette Controversy stated that a causal relationship between smokers and illness or death had not been established and that such claims were unproven. Over one million copies of the Cigarette Controversy, which was described as "the basic guide for other forms of communication," were in print by the end of the year. TIMN0017604-7612 (US 23020); TIMN217628-7639 at 7634 (US 21263).

717. In an address delivered on October 3, 1967, Paul D. Smith, Vice President and General Counsel of Philip Morris, stated: "The truth of the matter is this: No one knows whether

cigarette smoking causes any human disease or in any way impairs human health." Smith also claimed that "[n]obody has yet been able to find any ingredient as found in tobacco or smoke that causes human disease." He also criticized the Public Health Service's accusations against tobacco and claimed that the public research community was biased due to its receipt of federal funds. 2015068601-8612 at 8603, 8611 (US 20337); 2010035814-5818 (US 21603).

718. In 1968, a sportswriter named Stanley Frank, who worked for Hill & Knowlton was paid $500 by the Tobacco Institute, to write an article titled "[T]o smoke or not to smoke -- that is still the question," which appeared in the "Science" section of True Magazine. In the article, Frank stated that he had reviewed the evidence on smoking and disease and found it inconclusive and contradictory. See, III(D)(3)(¶167-168). TIMN462375-2380 (US 21660); 690012994-2994 (US 54322).

719. The Tobacco Institute ordered millions of reprints of the Stanley Frank article for mass mailings. In April 1968, Lorillard, RJR, Philip Morris, and B&W purchased reprints of the article for further mailings. 690012994-2994 (US 54322); TIMN0070307-0307 (US 21571); TIMN0070324-0335 (US 21592); TIMN0071398-1401 (US 21301).

720. In an internal memorandum outlining the Tobacco Institute's involvement with the Frank article, William Kloepfer, Vice President of Public Relations at the Tobacco Institute, noted with approval that the Tobacco Institute's involvement in another article, "the Barron's editorial," had not been uncovered:

> It should be noted that our earlier project, the advertisement of the Barron's editorial, escaped noticeable rebuttal. The editorial will be remembered, however, as an independent criticism of government activity, with no reasonable suspicion possible that cigarette interests were responsible for its preparation.

TIMN0071398-1401 (US 21301); 1005112459-2461 at 2460 (US 20213).

721. All these activities, such as the Cigarette Controversy series, the Frank article, and public statements of the industry were undertaken as part of a concerted, wide-ranging public relations strategy on the part of Defendants to mislead the public. A 1968 Tobacco Institute "Tobacco and Health Research Procedural Memo" lays out the basic strategy:

> The most important type of story is that which casts doubt on the cause and effect theory of disease and smoking. . . . [T]he headline should strongly call out the point -- Controversy! Contradiction! Other factors! Unknowns!

TIMN0071488-1491 at 1489 (US 21302).

722. In 1969, the Tobacco Institute prepared an article titled "Centuries-old Smoking/Health Controversy Continues," which asserted that the causes of cancer and heart disease were still unknown. The article stated that evidence concerning smoking and cardiovascular disease was, if anything, more confused than it was in 1964 and did not permit the conclusion that there was a causal relationship between smoking and cardiovascular disease. TIMN395434-5437 (US 21664).

723. Claims that smoking was only statistically linked to disease persisted. A February 3, 1969 CTR press release explained:

> The scientist who has been associated with more research in tobacco and heath than any other person [Clarence Cook Little, Executive Director of CTR] declared today that there is no demonstrated causal relationship between smoking and any disease. The gaps in knowledge are so great that those who dogmatically assert otherwise -- whether they state that there is or is not such a causal relationship -- are premature in judgment. If anything, the pure biological evidence is pointing away from, not toward, the causal hypothesis. . . . Statistical associations between smoking and lung cancer, based on study of those two factors

> alone, are not proof of causal relationship in the opinion of most epidemiologists.

670307882-7891 at 7882 (US 21867).

724. On February 6, 1969, the general counsels for Philip Morris, RJR, B&W, Lorillard, and Liggett, all of whom were members of the Committee of Counsel, approved publication of the foregoing press release under the headline: "How much is known about smoking and health." The ad was run in major newspapers around the country, advertising journals, and medical journals, including papers in Richmond, Raleigh, Knoxville, Nashville, Washington, New York, Louisville, Lexington and Columbia; in the eastern edition of the Wall Street Journal, Advertising Age, Broadcasting, Editor and Publisher, Southern Advertising and Publishing, National Association of Retail Druggist Journal, Food Topics, VEND, Retail Tobacconist, Southern Tobacco Journal, Tobacco, Tobacco Distributor and Confectionary Guide, Tobacco Jobber, Tobacco Leaf, Tobacco Record, Tobacco Reporter, US Tobacco Journal, Medical World News, Medical Economics, and US Medicine. 1005132848-2849 (US 20222); 1005153098-3099 (US 20227); TIMN0081698-1698 (US 21309); TIMN0000560-0561 (US 21874); TIMN0081695-1696 (US 21308).

725. Defendants realized that they needed to change public opinion in order to sustain the viability of the tobacco industry given the fact that there was little, if any, evidence to support their position. In an August 10, 1967 RJR memorandum from J.S. Dowdell to C.B. Wade, Dowdell acknowledged:

> Despite the fact that the industry has very little, if any, positive evidence upon which to base the aggressive campaign necessary at this late date to materially change public opinion, public attitudes can be changed. At least to the extent that the majority who now

> believe smoking is a proven cause of lung cancer could become doubtful; and, others who are now skeptical could be convinced that before the industry is further penalized more evidence is required. However, the unfavorable opinion on the hazards of smoking will remain definitely high, and will not shift in a favorable direction, until positive action is taken by the industry to counter the anti-smoking propaganda and publicity.

Dowdell advocated that the Tobacco Institute Executive Committee approve the 1967 Public Relations Program and begin an aggressive public relations campaign. 500006192-6194 at 6193 (US 47761) (emphasis in original).

726. At the same time, an internal B&W document titled "Smoking and Health Proposal" explained: "Doubt is our product since it is the best means of competing with the 'body of fact' that exists in the mind of the general public. It is also a means of establishing a controversy." 690010951-0959 at 0954 (US 21040).

727. In a 1969 B&W document prepared for public dissemination titled "How Eminent Men of Medicine and Science Challenged the Smoking-and-Health Theory During Recent Hearings in the U.S. Congress," B&W stated that "the question of smoking and health remains an open, not a closed, issue." B&W also asserted that "[t]he cause of cancer in humans, including the cause of cancer of the lung, is unknown" and that "[t]he concept that cigarette smoking is the cause of the increase in lung cancer and emphysema is a colossal blunder." 650332832-2839 at 2833, 2835-2836 (US 20947).

728. On November 11, 1969, the Tobacco Institute published an advertisement titled "All Advertising Should be Truthful," containing a reprint of an Advertising Age article titled "The Truth Seems a Little Twisted." The article attacked the American Cancer Society and the American Heart Association commercials informing the public about the risks of cigarette

smoking. The article stated that the commercials were untruthful and misleading and that "wild" unsupported statements should not be permitted on the air. The Tobacco Institute ran these advertisements in newspapers in New York, Boston, Philadelphia, Washington, Chicago, Los Angeles and San Francisco and in issues of Time, Newsweek, and the Wall Street Journal. 1005132842-2842 (US 21667); 1005132840-2840 (US 21668); 1005132841-2841 (US 21669).

729. In February 1970, the Tobacco Institute issued an announcement titled "The Tobacco Institute believes the American public is entitled to complete, authenticated information about cigarette smoking and health," with the subtitle "The American Cancer Society does not seem to agree." This announcement challenged information issued by the American Cancer Society concerning a research project published by Dr. Oscar Auerbach titled "The Effects of Cigarette Smoking Upon Dogs." For a complete discussion of Defendants' efforts with respect to the Auerbach Studies, see Section III(F)(3) and Section V(A)(5)(b)(¶690-693), supra. TIMN0081949-1949 (US 21686).

730. On April 30, 1970, the Tobacco Institute sent a press release that falsely claimed that the American Cancer Society had refused to release experimental data underlying the Auerbach/Hammond "smoking beagles" study, which discovered bronchial carcinoma in beagle dogs forced to smoke tobacco. T076378-6379 (US 21237).

731. In March 1970, the Tobacco Institute approved television spots which said:

> Today, we in this industry support more impartial research on the vital question of tobacco and health than any agency of the Federal Government, and more than all the voluntary agencies combined. We have great confidence that the findings of this research will lead the way in providing fair and accurate information regarding cigarette smoking.

* * *

> Do Smokers have common sense? We in the tobacco industry believe they do, and that millions of reasonable and responsible men and women who smoke will not be misled by the campaign of fear that is conducted against smoking. We believe that these emotional charges are no substitute for objective facts gathered from research.

2010008819-8822 at 8820 (US 20300).

732. On April 22, 1970, a CTR press release titled "Studies Raise Questions About Smoking as Health Hazard" quoted Clarence Cook Little as stating: "The deficiencies of the tobacco causation hypothesis and the need of much more research are becoming clearer to increasing numbers of research scientists." 500015901-5905 at 5902 (US 47778).

733. On September 7, 1970, Dr. Sheldon Sommers, Scientific Director of CTR and Chairman of the SAB, asserted in an article titled "Smoking and Health: Many Unanswered Questions": "I do not believe it has been scientifically established that cigarette smoking causes human disease," and, "The Council for Tobacco Research is deeply committed to the search for answers." ZN16062-6065 at 6063, 6065 (US 21161).

734. In December 1970, the Tobacco Institute issued yet another statement, published as an advertisement in major American newspapers, titled "The Question about Smoking and Health Is Still a Question":

> [A] major portion of this scientific inquiry has been financed by the people who know the most about cigarettes and have a great desire to learn the truth . . . the tobacco industry. And the industry has committed itself to this task in the most objective and scientific way possible . . .1115 reports in all. Through this work much valuable data have been produced about lung cancer, heart disease, chronic respiratory ailments and other diseases. However, there's still a lot more to be learned. . . . There are eminent scientists who

> believe that the question of smoking and health is an open one and that research in this area must go forward. From the beginning, the tobacco industry has believed that the American people deserve objective, scientific answers. With this same credo in mind, the tobacco industry stands ready today to make new commitments for additional valid scientific research that offers to shed light on new facets of smoking and health.

The "eminent scientists" in such pronouncements were never identified. Defendants widely distributed reprints of the advertisement and provided it to every member of Congress with a personal letter from Horace Kornegay, President of the Tobacco Institute. TIMN0081352-1352 (US 21305); 2010008873-8873 (US 22010); 1005132832-2832 (US 21666); 2010008878-8879 (US 36514); 500004807-4809 at 4807 (US 20608); Brandt WD, 128:14-129:11.

735. Defendants' executives also continued to insist in the 1970s, as they had in the 1950s, that "if and when" any harmful elements were identified in cigarettes, they would take necessary steps to remove them. For example, on January 3, 1971, Joseph Cullman III, President of Philip Morris, explained in a "Face the Nation" television interview:

> [T]his industry can face the future with confidence because when, as, and if any ingredient in cigarette smoke is identified as being injurious to human health, we are confident that we can eliminate that ingredient . . . . We do not believe that cigarettes are hazardous; we don't accept that. But we are working with the government, working very hard with the government, on various methods of ascertaining whether or not cigarettes can be found to be hazardous. . . . I believe they have not been proved to be unsafe.

1002605545-5564 at 5550, 5560 (US 35622).

736. During the same televised interview, Cullman falsely denied that cigarettes posed a hazard to pregnant women or their infants: "[I]t's true that babies born from women who smoke are smaller, but they are just as healthy as the babies born to women who do not smoke.

Some women would prefer to have smaller babies." His statement contradicted the information Helmut Wakeham, Philip Morris's Vice President for Corporate Research and Development, had given him two years earlier. 1002605545-5564 at 5561-5562 (US 35622); 1000211305-1305 (US 20080).

737. In an effort to detract attention from smoking as a cause of disease, Defendants pointed to other possible causes. On January 3, 1971, a Tobacco Institute press release contained statements criticizing public health efforts, and suggesting to the public that not enough was being done to investigate incidents of lung cancer in nonsmokers. The press release alleged that "thousands of lung cancer victims who have never smoked cigarettes [are] being neglected by expensive propagation of myths instead of scientific knowledge." It also quoted Tobacco Institute President Horace Kornegay: "Any organization in a position to apply resources in the search for those keys -- and which fails to do so -- will continue to be guilty of cruel neglect of those whom it pretends to serve." Kornegay told the public that the Defendants planned to provide more than four million dollars in 1971 for independent scientific research. 2001052715-2718 at 2716, 2718 (US 21719); TIMN0123716-3720 at 3717 (US 21328).

738. A May 25, 1971 Tobacco Institute press release publicly denied any links between smoking and health. In this press release, Defendants again represented that "many eminent scientists" (unidentified) believe that "the question of smoking and health is still very much a question." TIMN0131768-3769 at 3769 (US 21337).

739. In a press release dated November 15, 1971, the Tobacco Institute challenged the claim that smoking is harmful to pregnant women. Horace Kornegay, President of the Tobacco Institute, was quoted: "We just don't know, and only further research on smoking and all the

other possible factors that may affect pregnancy will answer the question." TIMN0100469-0470 at 0469, 0470 (US 21687).

740. The Tobacco Institute prepared an entire "backgrounder" on smoking and pregnancy which was sent to newspaper editorial writers throughout the country. A TI press release discussing the backgrounder claimed that ". . . opponents of cigarettes are endeavoring to scare pregnant women with such statements as that of the Surgeon General that 'we are losing babies because of mothers' smoking.'" TIMN0100469-0470 at 0469 (US 21687).

741. In the January 24, 1972 issue of the Wall Street Journal, Philip Morris's Senior Vice President James Bowling was quoted as stating: "[i]f our product is harmful . . . we'll stop making it. We now know enough that we can take anything out of our product, but we don't know what ingredients to take out." Bowling further stated that "[w]e don't know if smoking is harmful to health, and we think somebody ought to find out." 500324162-4164 at 4163 (US 20627).

742. On February 1, 1972, the Tobacco Institute issued a press release declaring that

> [t]he cigarette industry is as vitally concerned or more so than any other group in determining whether cigarette smoking causes human disease, whether there is some ingredient found in cigarette smoke that can be shown to be responsible, and if so, what it is

and that

> despite this effort [the commitment of $40 million by the tobacco industry for smoking and health research] the answers to the critical questions about smoking and health are still unknown.

TIMN0120596-0597 at 0597 (US 21321).

743. Defendants issued scathing comments about official reports demonstrating the

adverse health effects of smoking. For example, a February 26, 1972 Tobacco Institute press release asserted that the 1972 Surgeon General's Report on the Health Consequences of Smoking "insults the scientific community" and that the report was "another example of 'press conference science' -- an absolute masterpiece of bureaucratic obfuscation." The press release further asserted that "the number one health problem is not cigarette smoking, but is the extent to which public health officials may knowingly mislead the American public." TIMN0120602-0603 at 0602 (US 21322).

744. The reasoning behind the Tobacco Institute's public relations campaign based on the open question controversy is explained in a 1972 Tobacco Institute internal document, which stated:

> In the cigarette controversy, the public -- especially those who are present and potential supporters (e.g. tobacco state congressmen and heavy smokers) -- must perceive, understand, and believe in evidence to sustain their opinions that smoking may not be the causal factor.

87657703-7706 at 7705 (US 21098).

745. A May 1, 1972 memo written by Fred Panzer, Vice President of the Tobacco Institute, to Horace Kornegay described the strategy employed by Defendants:

> For nearly twenty years, this industry has employed a single strategy to defend itself on three major fronts -- litigation, politics, and public opinion.
>
> While the strategy was brilliantly conceived and executed over the years helping us win important battles, it is only fair to say that it is not -- nor was it intended to be -- a vehicle for victory. On the contrary, it has always been a holding strategy consisting of
>
> -- creating doubt about the health charge without actually denying it

-- advocating the public's right to smoke, without actually urging them to take up the practice

-- encouraging objective scientific research as the only way to resolve the question of health hazard.

On the litigation front for which the strategy was designed, it has been successful. While we have not lost a liability case, this is not because juries have rejected the anti-smoking arguments.

On the political front, the strategy has helped make possible an orderly retreat. But it is fair to say that it has not stemmed the pressure for new legislation, despite the major concessions we have made.

On the public opinion front, however, our situation has deteriorated and will continue to worsen. This erosion will have an adverse effect on the other fronts, because here is where the beliefs, attitudes and actions of judges, juries, elected officials and government employees are formed.

Panzer, like other industry executives, noted that the open question strategy was not likely to be successful much longer. Still, he believed the traditional defense was viable in some respects:

As things stand we supply them [the public] with too little in the way of ready-made credible alternatives.

* * *

Two such credible alternatives exist:

1) The Constitutional Hypothesis i.e. people who smoke tend to differ importantly from people who do not, in their heredity, in constitutional makeup, in patterns of life, and in the pressure under which they live.

2) The Multi-factorial Hypothesis i.e. as science advances, more and more factors come under suspicion as contributing to the illnesses for which smoking is blamed–air pollution, viruses, food additives, occupational hazards and stresses.

> Our 1970 public opinion survey showed that a majority (52%) believed that cigarettes are only one of the many causes of smokers having more illnesses. It also showed that half of the people who believed that smokers have more illnesses than nonsmokers accepted the constitutional hypothesis as the explanation.

TIMN0077551-7554 at 7551-7553 (US 63585) (emphasis in original).

746. Following this strategy, on January 14, 1975, the Tobacco Institute released another version of its booklet "The Cigarette Controversy." This announcement stated that:

> If smoking does cause disease, why, after years of intensive research, has it not been shown how this occurs? And why has no ingredient as found in smoke been identified as the causal factor? These are among the unanswered questions set forth in a new publication of the Tobacco Institute, titled The Cigarette Controversy.

TIMN0120638-0639 at 0638 (US 21698) (emphasis in original).

747. Defendants continued to recognize and exploit the fact that their public relations campaign provided rationalizations for the smoker. Their use of public relations was calculated and precise, and internal research done on it demonstrated its efficacy. As B&W stated in a November 29, 1976 memo titled "Cigarette Advertising History":

> Good cigarette advertising in the past has given the average smoker a means of justification on the two dimensions typically used in anti-smoking arguments: [risk to health and immorality] . . . All good cigarette advertising has either directly addressed the anti-smoking arguments prevalent at the time or has created a strong, attractive image into which the besieged smoker could withdraw.

680086039-6044 at 6039, 6040 (US 20984).

748. On June 6, 1977, Addison Yeaman, B&W's General Counsel, publically reaffirmed Defendants' promise to conduct meaningful research, as he explained in his remarks at

Maxwell Associates' Biannual Tobacco Seminar that:

> I am utterly secure in saying to you that the tobacco industry recognizes its responsibility and its duty and that it will continue its every effort and at whatever cost to find the answer to the question, “what part, if any, does tobacco play in human diseases.”

CTRPUBLICSTMT001437-1445 at 1445 (US 21164).

749. In a document distributed by B&W titled "Facts Every Tobacco Man Should Remember," which appeared in the October 27, 1977 edition of the United States Tobacco Journal, B&W claimed that "[t]he case against tobacco is not closed . . . in a sense, the jury still isn't able to retire to consider the case because it doesn't have all the relevant facts." 544001284-1297 at 1285-1286 (US 20935).

750. The Tobacco Institute's public relations strategy focused its attention on disseminating Defendants' message to the public that there was no definite link between smoking and health and that, until answers to these questions were found, smokers should not fear that their health was endangered. Defendants' four-point platform was set out in a December 29, 1977 Tobacco Institute press release:

> 1. The question of smoking and health is still a question requiring scientific resolution.
>
> 2. Tobacco smoke does not imperil normal nonsmokers.
>
> 3. The tobacco farm program is an essential part of public policy.
>
> 4. The freedom of choice of our industry's customers must be preserved.

TIFL0522279-2280 at 2280 (US 21424).

751. In 1977, the Tobacco Institute published a pamphlet titled "Facts About the

Smoking Controversy." The pamphlet claimed that the 1964 Surgeon General's Report “was essentially a 'study of numbers -- a selective review of population studies which compared disease rates among smokers, ex-smokers and nonsmokers.’” It also stated: “Has the Surgeon General's report established that smoking causes cancer or other diseases? No.” TIMN0055129-5135 at 5130 (US 21298).

752. Defendants aimed much of their public relations campaign at lung cancer and, as time went on, heart disease. In 1978, a Tobacco Institute pamphlet stated: "The flat assertion that smoking causes lung cancer and heart disease and that the case is proved is not supported by many of the world's leading scientists." TIMN319568-9604 at 9578 (US 62902).

753. On January 12, 1978, Ross Millhiser, President of Philip Morris, stated in a letter to the editor in the New York Times: "as for the lack of research on the 'harmful' effects of smoking, the fact is there is good reason to doubt the culpability of cigarette smoking in coronary heart disease." ATC2411308-1308 (US 21378).

754. In May 1978, the Tobacco Institute published a fifty-four page document titled "Fact or Fancy?" and sent it to broadcasters, editors, writers, and officers of women's associations and organizations "because the tobacco and health controversy has increasingly focused on women and smoking." The document claimed to have been produced "to present more factual and balanced answers on the health question about which mature women need to know more." It presented the controversy argument that causality had yet to be proven in any of the diseases and conditions linked statistically with cigarette smoking. 03731785-1838 (US 21466); 04326897-6897 (US 21468); 04326898-6898 (US21467); 04326900-6900 (US 21469); 04326901-6901 (US 21470).

755. Defendants also continued to insist publicly that there was no need to undertake research to develop "safer" cigarettes, since they asserted that the cigarettes then being sold were not harmful to health. In June 1978, William Dwyer, Vice President of the Tobacco Institute, explained in an article titled "Smoking: A Free Choice":

> A question often asked of the tobacco industry is whether researchers are developing a “safe” cigarette. A variation of that question is whether low “tar” nicotine cigarettes are safer. The tobacco industry is convinced that no cigarette has been proved unsafe. Therefore, they regard any suggestion of a “safe” or “safer” cigarette as tortured logic. The reduced “tar” and nicotine cigarettes represent about 20 percent of sales and are in the marketplace because of consumer demand. That demand obviously reflects the personal preferences of smokers.

TIMN0074796-4800 at 4797 (US 21480).

756. In December 1978, the Tobacco Institute published "The Smoking Controversy: A Perspective." The publication stated that society was on the "brink of paranoia" regarding smoking; that "[n]o one really knows whether this personalized warfare against tens of millions of Americans will prevent a single case of lung cancer"; that "[n]o one really knows the root or causes of cancer"; and that the "wars" against disease that were being "waged by the government and voluntary health agencies" were "beyond the realm of science." TIMN0129593-9628 (US 21499); MNAT00224317-4354 (US 21223).

757. In 1979, the Tobacco Institute published a document titled "TOBACCO from seed to smoke amid controversy." It stated flatly that "it has not been established that smoking causes any human disease." 690142176-2180 at 2178 (US 21512).

758. One year prior to the release of the 1979 Surgeon General's Report on Smoking and Health, Defendants started planning their response to what they expected it to say. That

response included establishing a task force to write and publish a rebuttal paper. Rather than have scientists evaluate the evidence or the Report's findings, once they were issued, the Tobacco Institute assigned a public relations staff member to research, write, and edit the rebuttal paper. Anne Duffin was given this responsibility, under the direction and guidance of the law firm Shook, Hardy & Bacon. Other public relations staff members re-read and edited chapters of the document as it was drafted. TIMN0073990-3992 at 3990 (US 21525).

759. On January 10, 1979, one day prior to the release of the 1979 Report of the Surgeon General on Smoking & Health, the Tobacco Institute published a document titled "Smoking and Health 1964-1979: The Continuing Controversy." The Tobacco Institute prepared it for distribution to the news media and tailored it to respond to the content of the 1979 Report. The Tobacco Institute had obtained three draft chapters of the Surgeon General's Report. The rebuttal document was 166 pages long and represented a major effort on the part of the tobacco industry to pre-empt the impact of the1979 Surgeon General's Report. TIMN0084430-4594 (US 21534).

760. Peter Lee, a long time industry consultant, characterized the Tobacco Institute's 1979 document "The Continuing Controversy" (referred to as "TA73") as "misleading." He wrote that the Tobacco Institute's counter publication did not appear to understand the idea of medical causation:

> Discussion of the role of other factors can be particularly misleading when no discussion is made of relative magnitudes of effects. For example, heavy smokers are observed to have 20 or more times the lung cancer rates of non-smokers. Sure, this does not prove smoking causes lung cancer, but what it does mean, <u>and TA73 never considers this,</u> is that for any other factor to explain this association, it must have at least as strong an association with

> lung cancer as the observed association for smoking (and be highly correlated with the smoking habit).
>
> * * *
>
> TA73 seems ready to accept evidence implicating factors other than smoking in the aetiology of smoking <u>without</u> requiring the same stringent standards of proof that it requires to accept evidence implicating smoking. This is blatantly unscientific .

100214029-4047 at 4046 (US 21515) (emphasis in original).

761. While he identified problems with the Tobacco Institute public relations document, Lee acknowledged that: "There is no doubt that [the Surgeon General's Report] is an impressive document." His memorandum dated February 9, 1979 also states: "The way in which the information was presented was on the whole sound, scientific and unemotive." He predicted that the Report would become "the Number One basic reference document for smoking and health researchers the world over." 100214029-4047 at 4030 (US 21515).

762. The day before the 1979 Report was released, Defendants held a press conference, distributed press kits, and arranged for several television appearances by Horace Kornegay, President of the Tobacco Institute. A January 25, 1979 Tobacco Institute document memorializes remarks made at a TI Executive Committee meeting where the goal of the TI approach to the 1979 Surgeon General's Report was explained. One of the goals was: ". . . to encourage the press and public officials to apply a skeptical, or at least questioning, attitude to the substance of the report, and its source." TIMN0073990-3992 at 3991-3992 (US 21525); TIFL0403308-3312 at 3308 (US 62631); TIMN0055304-5330 (US 62816).

763. Defendants' internal documents note that their public relations efforts received press coverage that equaled that received by the Report itself:

> Most of us are aware that news coverage of the 1979 Surgeon General's Report achieved a balance, of sorts, with attention given to the Tobacco Institute's views both before and after the actual event.

TIMN0073993-4002 at 3994 (JD 011663) (emphasis in original).

764. On January 11, 1979, for example, the News and Observer of Raleigh, North Carolina, quoted the Tobacco Institute as stating that "'many scientists' are becoming concerned that the focus on cigarette smoking diverts attention from other suspected health hazards." TIMN0122721-2721 (US 21325).

765. On January 17, 1979, the Tobacco Institute continued its aggressive public relations effort and issued a press release stating that the tobacco industry had spent $75 million on research over twenty years to learn whether smoking is harmful, but that "the case against cigarettes is not satisfactorily demonstrated." TIMN0074006-4006 (US 87985).

766. Philip Morris's 1979 Annual Report similarly declared: "No conclusive clinical or medical proof of any cause-and-effect relationship between cigarette smoking and disease has yet been discovered." 2043819548-9607 at 9561 (US 20451*).

767. While the public relations campaign continued, Defendants promised their commitment to disinterested research. In 1981, for instance, the Tobacco Institute published a document titled "On Smoking -- 21 questions and answers," written by the law firm Shook, Hardy & Bacon, which stated:

> The tobacco industry has committed more than $91 million for independent research on smoking and health questions. . . . The tobacco industry remains committed to advancing scientific inquiry into the gaps in knowledge in the smoking controversy.

TIEX0007587-8106 at 7589 (US 87061).

768. On December 31, 1981, the Tobacco Institute published a document titled "Tobacco Industry Research on Smoking and Health: A $104 Million Commitment" that again asserted: "questions of smoking and health are unresolved." 2046754709-4710 at 4710 (US 20474).

769. In 1982, the Tobacco Institute launched a national series of advertisements on behalf of Defendants that addressed smoking and health issues, environmental tobacco smoke ("ETS"), public smoking restrictions, and youth smoking. These ads asked readers to keep an open mind on tobacco issues and "[w]eigh both sides before [they] take sides." Readers were encouraged to request a free copy of the Tobacco Institute's booklet "Answers to the Most Asked Questions about Cigarettes." 03028799-8809 at 8801 (US 20053).

770. On February 18, 1982, "Smoking and Cancer -- A Scientific Perspective" was published by the Tobacco Institute in anticipation of the release of the 1982 Surgeon General's Report on Smoking and Health. The timing of the release was based on the Tobacco Institute's "axiom that it is more effective to take the initiative in situations involving a prospective negative news event." The press release accompanying the 104-page Tobacco Institute document stated that scientific research had not been able to establish a causal link between smoking and cancer. Copies were provided to correspondents and to various Members of Congress. 2025431644-1748 (US 20417); TIMN0245529-5529 (US 21340); 03762472-2472 (US 20063); TIMN0245530-5532 (US 21341); TIMN0245292-5292 (US 21339); 03762460-2461 (US 20062).

771. A May 7, 1982 memorandum to RJR executives advised that the key point to be made in any discussion of the issue of smoking and health "is that it is a legitimate scientific

controversy which continued unresolved." 502483421-3421 (US 20700).

772. In 1983, in anticipation of the 1983 Surgeon General's Report, "The Health Consequences of Smoking -- Cardiovascular Disease," the Tobacco Institute published a document titled "Cigarette Smoking and Heart Disease." It stated that smoking was not an important risk factor for heart disease, and that "[w]hether cigarette smoking is causally related to heart disease is not scientifically established." The document was first distributed to Defendants, who were asked not to distribute the publication widely, but to use it for internal purposes only until the Report was released. Upon release, the Tobacco Institute distributed the document, as did the Defendants' European information clearinghouse, known as "INFOTAB" (discussed in detail at Section III(I)(6), supra). 2501112047-2098 at 2090, 2091 (US 20561); 2023274132-4133 (US 20386); 2501023645-3645 (US 20556).

773. Sheldon Sommers, Scientific Director of CTR, testified before Congress in 1983 that "cigarette smoking has not been scientifically established to be a cause of chronic diseases, such as cancer, cardiovascular disease, or emphysema." 503685073-5075 at 5073 (US 88734).

774. In 1984, RJR placed an ad in numerous newspapers, including The New York Times, titled "Smoking and health: Some facts you've never heard about." This ad contained the statement:

> You hear a lot these days about reports that link smoking to certain diseases. This evidence has led many scientists and other people to conclude that smoking causes these diseases.
>
> But there is significant evidence on the other side of this issue. It is regularly ignored by the critics of smoking. And you rarely hear about it in the public media. But, it has helped persuade many scientists that the case against smoking is far from closed.

> No one wants to know the real answers more than RJR. That is why we are providing major funding for scientific research. The funds are given at arm's length to independent scientists who are free to publish whatever they find. We don't know where such research may lead. But this much we can promise: when we find the answers, you'll hear about it.

504100135-0136 at 0136 (US 50882).

775. In 1983, the Tobacco Institute published a pamphlet titled "Tobacco Industry Research on Smoking and Health: A $120 Million Commitment." This pamphlet stated:

> Since the first questions were raised about smoking as a possible health factor, the tobacco industry has believed that the American people deserve objective, scientific answers. The industry has committed itself to this task.

2045377870-7876 at 7871 (US 20460).

776. In January 1984, an RJR press release declared:

> After all of this study, there are many scientists who believe there is no laboratory or clinical proof that cigarette smoke does -- or does not -- cause disease. We believe that reasonable people who examine all the evidence concerning smoking and disease would agree this is an open scientific controversy, not a closed case.

504638054-8056 at 8056 (US 20733).

777. A month later, Edward Horrigan, Chairman of the Board at RJR, made the following comments as part of a panel discussion on the "Nightline" television program: (1) "It is not known whether cigarettes cause cancer"; (2) "Despite all the research to date, there has been no causal link established [between smoking and emphysema]"; and (3) "As a matter of fact, there are studies that while we are accused of being associated with heart disease, there have been studies conducted over 10 years that would say, again, that science is still puzzled over these forces." 502371212-1223 at 1216, 1217 (US 20699).

778. RJR placed an ad in daily newspapers in 1984 titled, "Can we have an open debate about smoking?" In this ad, RJR claimed that "[s]tudies which conclude that smoking causes disease have regularly ignored significant evidence to the contrary," and that those "scientific findings come from research completely independent of the tobacco industry." It also states that "reasonable people who analyze it [the evidence] may come to see the issue not as a closed case, but as an open controversy." 513943434-3434 (US 50268).

779. That same year, 1984, the Tobacco Institute published a document titled "Cigarette Smoking and Chronic Obstructive Lung Diseases: The Major Gaps in Knowledge." It declared that Defendants did not agree with the conclusion of the Surgeon General's Reports that cigarette smoking had been established as a cause of chronic bronchitis and further asserted that a causal relationship between smoking and either chronic bronchitis or emphysema had not been established scientifically. TI13062142-2156 (US 62409).

780. The Tobacco Institute published another report in 1984 titled "The Cigarette Controversy: Why More Research is Needed" as a formal statement of Defendants' position. It purported to review the testimony given at the 1982 and 1983 Congressional tobacco labeling hearings and stated:

> Thirty nine scientists presented testimony against proposals in the bills. Their evidence was based on their own published research or their review of scientific literature.
>
> Each of them in his or her own right is a recognized scientist, and most have reached eminence in their area of expertise.
>
> * * *
>
> The evidence presented by these men and women is summarized in the following pages. The scientists and their professional

> affiliations are listed in the Appendix. We publish this summary in the belief that the controversy about smoking must be resolved by scientific research and in the belief that informed discussion of the controversy is in the public interest.
>
> * * *
>
> Fifteen witnesses explained why they consider the hypothesis that cigarette smoking causes lung cancer to be unproven.
>
> * * *
>
> Witnesses also questioned the assertion that cigarette smoking causes emphysema in particular and chronic obstructive lung disease (COPD) in general.

The report failed to disclose that most of these scientific witnesses were tobacco industry consultants who were receiving funding from the lawyers' Special Account No. 4. TI12431636-1650 at 1638, 1642,1645 (US 62384).

781. In July 1984, RJR mailed letters from employee Ann Griffin addressed to various children who had written to the company. In the letters, RJR claimed to be engaged in an effort to determine the harmful effects of smoking for the benefit of smokers, promised to support disinterested research into smoking and health, and claimed that research had not revealed any "conclusive" evidence that any element in cigarettes causes disease. 505465919-5919 (US 20741).

782. Over time, RJR sent numerous letters to survivors of deceased smokers, denying any scientifically established links between smoking and disease. For instance, on August 18, 1988, RJR sent a letter to Anthony A. Christina (the widower of a lung cancer victim) in which the company denied that there was any causal link between smoking and disease. 515792869-2869 (US 2086).

783. As of January, 2005, RJR Chairman Andrew Schindler was asked what his current answer to the Christina letter would be, and whether he would still refuse to admit that smoking causes disease. The most he would say was that, as of January, 2005, smoking poses “significant health risks and may contribute to certain diseases in some people." Schindler TT, 1/24/05, 10810:9-21.

784. In January 1990, RJR's Public Relations Manager wrote in a letter to the principal of a grade school and one of the school's students:

> The tobacco industry is also concerned about the charges being made that smoking is responsible for so many serious diseases. Long before the present criticism began, the tobacco industry, in a sincere attempt to determine what harmful effects, if any, smoking might have on human health, established the Council for Tobacco Research -- USA. The industry has also supported research grants directed by the American Medical Association. Over the years the tobacco industry has given in excess of $162 million to independent research on the controversies surrounding smoking -- more than all the voluntary health associations combined. Despite all the research going on, the simple and unfortunate fact is that scientists do not know the cause or causes of the chronic diseases reported to be associated with smoking.

508466199-6200 at 6199 (US 20813).

785. Beginning in 1986, Brennan Dawson, spokesperson for the Tobacco Institute, reiterated in numerous television appearances the Tobacco Institute's public position that the links between smoking and disease were based on statistics, and that the causal relationship between smoking and disease had not yet been established. The Tobacco Institute's position that it had not been proven that smoking caused disease was not shared by a single public health organization during the entire time Dawson served as spokesperson for the organization. Dawson WD, 64:17-23, 76:8-11; Dawson TT, 1/3/04, 10102:5-24.

786. During an August 17, 1986 appearance on the television program "Newsmaker Sunday," Dawson stated, in response to a question about the Tobacco Institute's position on whether cigarette smoking is hazardous to the smoker, that "what we think . . . is that the facts are not clear. The causal relationship has not been established." (no bates) (US 89296).

787. In an April 8, 1987 appearance on the television show "Ask An Expert," when asked whether smoking causes lung cancer, Dawson stated, "[i]t's not a yes and it's not a no. . . . We're not going to tell anyone that smoking is good for them. We're not going to tell them that smoking is bad for them. It may be, it may not be." (no bates) (US 89292).

788. In a January 11, 1989 appearance on the television show "Good Morning America," Dawson stated that "all the links that have been established between smoking and certain diseases are based on statistics. What that means is that the causative [sic] relationship has not yet been established." This was twenty-five years after the Surgeon General announced a causal relationship between smoking and lung cancer. TIMN389474-9479 at 9475 (US 21286).

789. Similarly, in an appearance on CNN's “Crossfire” on April 18, 1989, Dawson claimed:

> Statistically there are associations. In terms of biological causation that hasn’t been found which is why I came to the conclusion that smokers have to make up their own minds. We all know what the Surgeon General’s warnings say. In fact, the vast majority of people believe it so I think we are intelligent enough as adults to make up our own minds.

(no bates) (US 89290).

790. In a February 27, 1990 appearance on CBS's “Nightwatch,” when asked whether she believed cigarette smoking "contributes to heart disease and cancer," Dawson refused to

provide a straight answer, instead responding that "I think that that's an individual decision that each person needs to make for themself." CORTI1731-1738 at 1737 (US 87735).

791. Dawson dismissed the overwhelming scientific evidence linking smoking and disease as merely "statistical." In a subsequent appearance on Crossfire on April 11, 1990, when asked whether smoking caused cancer, heart attacks, or strokes, Dawson again repeated: "The links that have been made between smoking and disease you just rattled off, for example, are statistical in nature. The industry sticks by that position." CORTI1828-1841 at 1831 (US 85150).

792. The Chief Executive Officer and Chairman of Philip Morris Companies, Geoffrey Bible, was the ultimate authority on what the content would be in public statements on smoking and health made by Philip Morris Companies subsidiaries, including Philip Morris USA. Bible PD, United States v. Philip Morris, 8/22/02, 83:9-84:9, 85:22-86:25.

793. When a company makes a statement about the carcinogens in its product, that has much more impact upon the consuming public than if some third party does. Bible PT, Minnesota v. Philip Morris, 3/2/98, 5762:5-9.

794. When Philip Morris made statements about smoking and health, the company intended the public -- including consumers and public health authorities -- to rely on them. Id. at 5718:7-14.

795. When Brown & Williamson puts statements on its website, it intends that consumers should act in reliance upon the information contained in those statements. Ivey TT, 11/16/04, 6098:16-19.

**6. As of 2005, Defendants Still Do Not Admit the Serious Health Effects**

**of Smoking Which They Recognized Internally Decades Ago**

796. More than forty years after Defendants issued the Frank Statement and created TIRC, Defendants' essential position on the relationship of smoking and health remains virtually unchanged. In April 1994, in the now-famous congressional hearings before the United States House of Representatives' Subcommittee on Heath and the Environment, Defendants' executives asserted yet again that the causal relationship of smoking and cancer had not been proven: the CEOs of Defendants B&W, Liggett, Lorillard, Philip Morris USA, and RJR publicly denied that smoking caused cancer. TLT0730001-0850 (US 77011); TLT0730851-1975 (US 77012); Brandt WD, 128:14-131:4; (no bates) (US 20468) (Cimons, Marlene, Cigarette Chiefs Steadfastly Deny Smoking Kills, Los Angeles Times, April 15, 1994, at A1.

797. The statements of the CEOs were restatements of positions the companies continued to take publicly and uniformly at that time. For instance, in 1991, Charles Wall of Philip Morris Companies sent a letter to international competitors discussing unified industry language to deny that cigarette smoking had been proven to "cause" lung cancer. 2023235511-5512 (US 22725).

798. Thomas Sandefur, CEO of B&W from 1993-1996, stated in 1994 that "there's a health risk with smoking and disease," but that it "hasn't been proven that it [smoking] causes lung cancer." Sandefur PD, Broin v. Philip Morris, 7/13/94, 84:22-86:5.

799. Sandefur also stated that he did not agree with the Surgeon General's conclusion that smoking causes cancer, heart disease, and other diseases because, as he stated, "[t]hey're not dealing with whole smoke. They're dealing with painting of mice and that kind of thing. I don't think that's valid in terms of human practices of smoking whole smoke." Id.

800. Sandefur admitted that he was unaware of any studies showing that whole smoke does not cause disease, and he was unable to name one scientist or medical doctor totally unconnected with the tobacco industry who said that it had not been established that cigarette smoking causes cancer. Id. at 86:6-87:4, 89:11-17, 125:13-16, 144:15-145:9.

801. In April 1995, B&W informed B&W Japan to answer inquiries about smoking and health by reassuring the person making the inquiries that whether or not smoking cause diseases "is still [an] inconclusive matter." 450180143-0143 (US 21885).

802. As of the early 1990s, Lorillard's position on causation was:

> Lorillard does not and will not authorize the use of the Risk Factor formulation for causation for public relations purposes. We wish to maintain the traditional articulation: unproven, statistical, lack of mechanism. Risk Factor discussion is for scientists only and only in the courtroom and its controlled circumstances.

92348935-8936 (US 57176); Stevens WD, 47:21-48:13.

803. Michael Prideaux, a spokesperson for BAT, stated in 1994 that BAT's current position was that there was no causal link between smoking and cancer. 502576028-6030 at 6028 (US 86882).

804. Martin Broughton, Chairman of BAT plc, the corporate parent of BATCo, stated in opening remarks to analysts, investors and journalists at a briefing held at Windsor House on October 30, 1996, that "We have no internal research which proves that smoking causes lung cancer or other diseases or, indeed that, smoking is addictive." 800113810-3812 at 3810 (US 85343).

805. In 1994, Philip Morris ran a paid newspaper statement about smoking, nicotine and addiction. It said: "Both smokers and nonsmokers deserve to know facts, not innuendo,

about cigarettes." The statement also said “Philip Morris does not believe cigarette smoking is addictive. People can and do quit smoking all the time.” 2023011263-1263 (US 20371); Keane WD, 36:21-37:16.

806. In 1997, Philip Morris Companies' Chief Executive Officer and Chairman, Geoffrey Bible, took the position that cigarettes were not a cause of lung cancer, but asserted that if they were shown to be, "[he’d] probably . . . shut [the] company down instantly to get a better hold of things." He made this statement four decades after Philip Morris USA recognized the carcinogenic and disease-causing nature of cigarettes in internal documents. Bible PD, Florida v. American Tobacco, 8/21/97, 27:1-24. In 1997, Bible also voiced his disagreement with an Australian cigarette label warning that stated: “Smoking causes lung cancer.” Id. at 32:16-33:8.

807. Bible stated in 2002 that he did not know if Philip Morris cigarettes had ever caused disease in any individual. Bible PD, United States v. Philip Morris, 8/22/02, 63:19-64:5.

808. Although Philip Morris expressed "differences" in opinions between it and the public health authorities, Senior Vice President and General Counsel Denise Keane could not, while testifying in this litigation, cite any peer-reviewed article, study, or consensus report from 1977-1997 that disputes the scientific conclusion that smoking causes lung cancer. Keane WD, 16:18-17:12.

809. Prior to October 1999, Philip Morris's public position on disease causation was that smoking cigarettes was a risk factor for many diseases, but may or may not cause them. Steve Parrish admitted that Philip Morris’s “risk factor” position was at odds with the position of the public health authorities who had stated for decades that smoking was not merely a risk factor for certain diseases, but caused these diseases as well. Parrish WD, 15:11-16:14.

810. Finally, on October 13, 1999, when Philip Morris launched a corporate website, it changed its public position on smoking and health issues. The website stated: "There is an overwhelming medical and scientific consensus that cigarette smoking causes lung cancer, heart disease, emphysema, and other serious disease in smokers." Steve Parrish, Senior Vice President of Corporate Affairs for Altria Group, acknowledged that the overwhelming scientific consensus referenced in the October 1999 statement had existed for decades. Parrish further conceded that Philip Morris's refusal to acknowledge prior to October 1999 that smoking caused disease had damaged the company's credibility because there was no support for Philip Morris's view outside of the tobacco industry. 2085240087-0089 at 0087 (US 45673); Parrish WD, 9:20-12:3, 15:5-10; Keane WD, 24:21-25:28:8.

811. Although Philip Morris recognized the "overwhelming medical and scientific consensus," regarding the causation of disease by cigarette smoking in 1999, it did not state its agreement with that consensus until October 2000. Keane WD, 27:11-28:11. Parrish acknowledged that Philip Morris changed its position on causation in 2000 because of criticism from the public health community, and that Philip Morris's decision to state its agreement with the "overwhelming medical and scientific consensus" was not based on any new scientific evidence. The scientific basis for the "overwhelming medical and scientific consensus" had existed for decades prior to Philip Morris's decision to state its agreement with it. Parrish WD, 19:13-21:21.

812. Although Philip Morris is free to voluntarily change the information it includes on its cigarette warning labels, it has chosen not to change those labels even though in October 2000, the company changed its public position to admit that smoking causes disease and is

addictive. Bible PD, United States v. Philip Morris, 8/22/02, 112:12-113:17.

813. Philip Morris has never told its customers on its cigarette packaging or in onserts that it agrees that smoking causes cancer and other diseases in smokers. Its packages merely direct smokers to its website address. Keane WD, 35:10-22.

814. Speaking on behalf of RJR, Chairman Andrew Schindler, who received between $44 and $45 million in compensation in 2004, has refused to admit that smoking causes disease, as the following colloquies demonstrate: (1) When asked, "you won't say sitting here today that cigarette smoking causes disease, right?," he responded: "Well, my testimony and what's on our Website today is cigarette smoking [has] inherent health risks [and] may contribute to causing certain diseases in some people." Schindler TT, 1/24/05, 10811:11-19; (2) when asked again, "So you say it's possible, it's likely, but you don't say it does, do I have that right?," Mr. Schindler admitted, "Yes." Id. at 10812:20-22; (3) RJR's website, like its Chairman, does not admit that smoking is a cause of disease. Instead, it states: "We produce a product that has significant and inherent health risks for a number of serious diseases and may contribute to causing these diseases in some individuals." Id. at 10814:11-15.

815. As late as 2004, Lorillard CEO Martin Orlowsky refused to admit the full extent of smoking's harm. He was specifically asked: "Why hasn't Lorillard specifically stated publicly that smoking causes any diseases other than smoking [sic] emphysema, COPD or heart disease?" He responded:

> We have -- in certain instances, we do not know if in fact the evidence, the scientific evidence is such that it warrants saying it does cause. However, Lorillard's longstanding position, as long as I've been with the company, is that certainly smoking can, and is a risk factor for those diseases.

Orlowsky TT, 10/13/04, 2303:7-15.

816. Arthur Stevens, former Senior Vice President and General Counsel of Lorillard responded in 2000 to the question of whether smoking causes disease:

> I am aware that the company and others are of the position and the view, and I embrace that, that cigarette smoking is a risk factor for disease and I have no argument with the public health and the medical and other authorities taking that position.

Stevens WD, 47:1-11.

817. The risk factor language was not and is not the position of the scientific community and Stevens knew that. When questioned regarding the distinction, Stevens said: "Q: Were you aware, Mr. Stevens, that the risk factor formulation you stated was not the position of public health authorities? A: Yes I was." Stevens WD, 47:12-14.

818. Lorillard continues to issue public statements on smoking and health issues through PR Newswire. Press releases are sent by interstate wire transmission by PR Newswire, which in turn sends the releases out to news media so that Lorillard can "get the message out." Milstein TT, 1/7/05, 9261:8-18, 9271:7-17.

819. Press releases are also kept on Lorillard's website, where they can be accessed and reviewed by the public. Id. at 9272:12-20.

820. Lorillard General Counsel Ronald Milstein admitted that the content of recent Lorillard press releases on smoking and health issues, including addiction and the health effects of exposure to ETS, is similar to statements that Defendants have made for decades. Id. at 9264:11-24, 9266:6-16, 9277:23-9278:12; TLT0961610-1610 (US 86693); USX5710001-0002 (US 89303); USX5710005-0006 (US 89305).

821. Two years after the effective date of the Master Settlement Agreement, in 2000, B&W told visitors to its website: "We know of no way to verify that smoking is a cause of any particular person's adverse health or why smoking may have adverse health effects on some people and not others." (no bates) (JD 012645).

**7. Conclusions**

822. Defendants have been aware since the late 1950s of substantial evidence demonstrating that smoking causes significant adverse health effects, in particular, lung cancer. The evidence was presented by practicing physicians, such as Michael DeBakey, Alton Oschner, and Richard Overholt, by academic scientists, such as Evarts Graham and Ernst Wynder, and by government officials such as Surgeon General Leroy Burney in his 1959 JAMA article.

823. By 1964, when the Surgeon General of the United States, Luther Terry, issued his ground-breaking Report considering some 7,000 scientific articles on the relationship between smoking and health, there could no longer be any question that there was a consensus in the American scientific community "that cigarette smoking contributes substantially to mortality from certain specific diseases and to the overall death rate," that "[c]igarette] smoking is associated with a 70 percent increase in the age-specific death rates of males," that "[c]igarette smoking is causally related to lung cancer in men," and that the "data for women, though less extensive, point in the same direction." In 1968, the Surgeon General concluded that "cigarette smoking can contribute to the development of cardiovascular disease and particularly to death from coronary heart disease."

824. From at least 1953 until at least 2000, each and every one of these Defendants repeatedly, consistently, vigorously -- and falsely -- denied the existence of any adverse health

effects from smoking. Moreover, they mounted a coordinated, well-financed, sophisticated public relations campaign to attack and distort the scientific evidence demonstrating the relationship between smoking and disease, claiming that the link between the two was still an "open question." Finally, in doing so, they ignored the massive documentation in their internal corporate files from their own scientists, executives, and public relations people that, as Philip Morris's Vice President of Research and Development, Helmut Wakeham, admitted, there was "little basis for disputing the findings [of the 1964 Surgeon General's Report] at this time."

825. Indeed, as far back as 1968, William Kloepfer, Vice President of Public Relations for the Tobacco Institute recognized that "[o]ur basic position in the cigarette controversy is subject to the charge, and may be subject to a finding, that we are making false or misleading statements to promote the sale of cigarettes." Mr. Kloepfer was both correct and prescient.

826. For more than forty years after issuance of the Frank Statement in 1954, and for more than thirty years after issuance of the Surgeon General's first Report on smoking and health, Defendants maintained their position denying the causal relationship between smoking and disease. Finally, in 1999, Philip Morris launched a corporate website acknowledging the "overwhelming medical and scientific consensus that cigarette smoking causes lung cancer, heart disease, emphysema, and other serious disease in smokers." Despite this acknowledgment of the "overwhelming medical and scientific consensus," Philip Morris could not bring itself to clearly state its agreement with that consensus until October 2000. Philip Morris still does not include the information on its cigarette packaging that it agrees that smoking causes cancer and other diseases in smokers.

827. Neither RJR, Lorillard, nor B&W, have openly admitted that smoking causes

cancer. Indeed, in 2000, two years after the effective date of the Master Settlement Agreement, B&W was putting the following message on its website: "We know of no way to verify that smoking is a cause of any particular person's adverse health or why smoking may have adverse health effects on some people and not others."

## B. The Addictive Properties of Nicotine

### 1. Introduction

828. Cigarette smoking is an addictive behavior, characterized by drug craving, compulsive use, tolerance, withdrawal symptoms, and relapse after withdrawal. Underlying the smoking behavior and its remarkable intractability to cessation is the drug nicotine. Nicotine is the primary component of cigarettes that creates and sustains addiction to cigarettes. While the terminology of addiction has evolved over time, the underlying facts about the addictive nature of smoking and the centrality of nicotine to the addiction have been known and have not changed in over 40 years.

829. Since the 1950s, Defendants have researched and recognized, decades before the scientific community did, that nicotine is an addictive drug, that cigarette manufacturers are in the drug business, and that cigarettes are drug delivery devices. The physiological impact of nicotine explains in large part why people use tobacco products and find it so difficult to stop using them. Moreover, Defendants have sought to exploit the addictive quality of smoking and nicotine for decades in order to develop new products and increase sales.

830. Notwithstanding the understanding and acceptance of each Defendant that smoking and nicotine are addictive, Defendants have publicly denied and distorted the truth as to the addictive nature of their products for several decades. Defendants have publicly denied that

nicotine is addictive, have suppressed research showing its addictiveness, and have repeatedly used misleading statistics as to the number of smokers who have quit voluntarily and without professional help.

831. Defendants have intentionally maintained and coordinated their position on addiction and nicotine as an important part of their overall efforts to influence public opinion and persuade people that smoking was not dangerous; in this way, the cigarette company Defendants could keep more smokers smoking, recruit more new smokers, and maintain or increase their earnings. Additionally, Defendants have sought to discredit evidence of addiction in order to preserve their "smoking is a free choice" argument in smoking and health litigation.

832. Defendants, with the exception of Philip Morris, continue to publicly deny and distort the truth as to the addictiveness of cigarette smoking and nicotine's role in the addiction. Defendants ignore their own internal statements acknowledging and exploiting nicotine addiction. While nicotine shares certain key attributes of heroin, cocaine, and other drugs, Defendants continue to assert that smoking is no more addictive than coffee, chocolate, and exercise, and (with the exception of Philip Morris) continue to deny that nicotine is addictive at all.

### 2. Cigarette Smoking Is Addictive and Nicotine Is the Primary Element of That Addiction

#### a. How Nicotine Operates within the Body

833. When a person puffs a cigarette, she inhales cigarette smoke, which consists of an aerosol of particles and gases, including water, nicotine, and tar. Nicotine, a chemical found primarily in tobacco plants, has a structure similar to a chemical in the body called acetylcholine,

a neurotransmitter which provides the pathway of communication from one nerve cell to another. Nicotine competes with and blocks the effects of acetylcholine in the body. When cigarette smoke is inhaled deeply into the lungs, nicotine particles impact the breathing tubes in the lungs and nicotine is rapidly absorbed into the blood stream. It then rapidly moves to the heart and from there through the arterial blood vessels to the rest of the body, including the brain. It takes about 15-20 seconds from the time a smoker puffs on a cigarette for its nicotine to enter the brain. Benowitz WD, 15:13-16:13.

834. The more quickly nicotine is absorbed, the higher its concentration in the body and the greater its effects. Smoking nicotine provides the fastest rate of absorption and highest blood levels of nicotine. On average, one cigarette delivers 1mg to 1.5 mg of nicotine. In comparison, when nicotine is absorbed from a skin patch, blood levels rise gradually over 4 to 6 hours; when it is absorbed from gums or lozenges, blood levels rise over 30 minutes. Again, in comparison, caffeine and alcohol absorb into the body over 30 minutes. Id. at 18:9-11, 18:18-24, 19:18-20:13.

835. Nicotine binds to receptors that are intended to bind to the body's own neurotransmitter, acetylcholine. When nicotine binds to receptors, it artificially stimulates the acetylcholine system and causes the release of a number of hormones, including dopamine, norepinephrine, serotonin, and endorphins, which then affect mood and behavior. In addition, nicotine affects virtually every body organ. For example, nicotine increases the rate and force of heart contractions and constricts blood vessels. Id. at 16:14-17:23.

836. Nicotine produces two different kinds of effects. First, there are certain primary effects of nicotine on the brain that smokers find desirable. For example, the first cigarette in the

morning usually has a stimulating or alerting effect. Similarly, if a person is feeling stressed or anxious, nicotine may reduce that stress or relieve that anxiety and make a person feel better. Smokers may, however, develop tolerance to many of these primary effects. As occurs with the use of all psychoactive drugs, the brain attempts to adapt to the persistent presence of nicotine. This adaptation, or tolerance, produces actual changes in the brain's structure. Over time, the brain becomes tolerant to the effects of nicotine and needs even greater amounts of it to produce the same effects on hormones as it once did before the development of tolerance. Id. at 22:5-23:17.

837. Second, because the smoker's brain has adapted to the constant presence of nicotine, it becomes dependent on nicotine to function normally. When a smoker doesn't have nicotine, the brain functions abnormally and most people, approximately 80%, experience withdrawal symptoms. Those symptoms, which are the very opposite of the primary effects of nicotine, include irritability, lethargy, restlessness, sleeplessness, anxiety, depression, hunger, and weight gain. Withdrawal symptoms begin to occur as soon as nicotine levels in the body start to decline. When a person is experiencing nicotine withdrawal symptoms, ingestion of nicotine reverses the effects. This reversal of unpleasant withdrawal effects is perceived by the smoker as having beneficial effects on mood and arousal. Id. at 23:18-24:9. Thus, as tolerance develops, the smoker gets fewer pharmacological benefits from each cigarette and smokes more and more to avoid withdrawal symptoms. Id. at 24:18-20; See also Farone WD, 73:2-20. However, the smoker’s need for even greater amounts of nicotine does eventually plateau. It take an average of seven years to reach a plateau level of cigarette consumption. Id. at 24:22-24.

838. In commonly understood terms, smokers become dependent on the significant

pharmacological and psychoactive effects of the nicotine in cigarettes, resulting in craving, compulsive use, difficulty in quitting, and relapse after withdrawal. Farone WD, 73: 2-20.

839. There is compelling evidence that smoking behavior is motivated by a need to maintain a preferred dose or level of nicotine intake, leading to the phenomenon of nicotine compensation, or titration, in response to the use of cigarettes with lower nicotine yields. Although it may be correct that addiction to smoking is, in part, an addiction to a set of behaviors, i.e., opening a pack, taking out a cigarette, lighting up, tapping ashes, etc., the fact is that nicotine is the essential ingredient which creates and maintains the addiction. To give a simplistic example, denicotized cigarettes have attracted virtually no smokers even though the behaviors involved are the same. See Farone WD, 73:21-74:3.

840. This understanding supports the now overwhelming consensus in the scientific and medical community that cigarette smoking is an addictive behavior and that nicotine is the component in cigarettes that causes and sustains the addiction. Henningfield WD, 114:9-12; Burns WD, 13:16-14:19. However, it has taken over 50 years for this full understanding of nicotine's role and addictiveness to evolve.

**b. Evolving Definitions of "Addiction" and Classification of Nicotine**

841. In the last fifty years, as the scientific, regulatory, and public health communities have developed greater understanding of drug use, they have adopted a more nuanced definition of what constitutes an addiction to drugs. As the definition of addiction evolved, so did the classification of nicotine.

842. In its 1957 Report, the World Health Organization ("WHO") Expert Committee

on Addiction Producing Drugs set forth criteria for determining both drug dependence and drug habituation:

| Drug Addiction | Drug Habituation |
|---|---|
| Drug addiction is a state of periodic or chronic intoxication produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include: | Drug habituation (habit) is a condition resulting from the repeated consumption of a drug. Its characteristics include: |
| 1) An overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means; | 1) A desire (but not a compulsion) to continue taking the drug for the sense of improved well-being which it engenders; |
| 2) A tendency to increase the dose; | 2) Little or no tendency to increase the dose; |
| 3) A psychic (psychological) and generally a physical dependence on the effects the effect of the drug; | 3) Some degree of psychic dependence on the effects of the drug, but absence of physical dependence and hence of an abstinence syndrome; |
| 4) Detrimental effect on the individual and on society. | 4) Detrimental effects, if any, primarily on the individual. |

See Benowitz TT, 11/2/04, 4621:28, 4623:1-20; Henningfield TT, 11/23/04, 6866:20-6867:11; (US 64057). The 1957 WHO Report emphasized the importance of intoxication as a component of addiction, which it labeled a personality disorder. A drug addiction was used to describe drugs that produced marked intoxication with concomitant impairment of performance and severe physical dependence. A drug addiction at that time also meant damage not only to the individual but to society (e.g., anti-social behavior and criminality). A drug habit, on the other hand, was considered to be a psychological dependence involving no physical dependence and/or no damage to society. Henningfield WD, 114:18-116:14.

843. In 1964, shortly before the issuance of the Surgeon General's 1964 Report, the WHO Expert Committee on Addiction Producing Drugs published a new Report abandoning its prior definitions of habituation and addiction. Instead, the WHO committee recommended the

adoption of the term "dependence," which it defined as "a behavioral pattern in which the use of a given psychoactive drug is given a sharply higher priority over other behaviors which once had a significantly higher value." Most importantly, the 1964 WHO Report determined that intoxication and personality disorder were not accurate criteria for determining addiction, replacing them with measurements of addictive effects including physiological dependence, withdrawal, reinforcement, and psychoactive effects. Henningfield WD, 109:3,20, 110:8-22, 114:18-116:14, 122:20-123:16.

844. Because the 1964 WHO Report was issued so shortly before the 1964 Surgeon General's Report, the Surgeon General was unable to take its new definitions into account when considering the proper classification of nicotine. Consequently, in his January 1964 Report, the Surgeon General, using the earlier criteria established by the WHO in 1987 for "addiction" and "habituation," concluded that smoking, nicotine, and cocaine were not addictions. Smoking in particular was termed a "habituation" rather than an "addiction." The criteria for addiction that the 1964 Report used were: (1) periodic intoxication; (2) overpowering desire or need; (3) tendency to increase dose; (4) psychic and physical dependence; and (5) detrimental effects on society. The 1964 SG report concluded, based on the 1957 WHO definition and the limited data available at the time, that smoking produced only a "psychiatric but not physical dependence." VXA1601844-2232 (US 64057); Henningfield WD, 114:18-117:5.

845. Between 1964 and 1988, when the Surgeon General finally did apply the term addiction to smoking, many individuals and organizations within the public health community struggled with the classification of nicotine. Each examined the issue from the perspective of their own particular discipline and constituency.

846. Despite the fact that there were a few early studies suggesting that nicotine could create pleasurable effects or withdrawal symptoms, the state of knowledge in the public health community about nicotine's role in behavior was limited. For example, in 1962, the Larson, Haag, and Silvette compendium was published, with the financial support of Philip Morris. This highly respected reference book summarized much of the world literature on the effects of tobacco and nicotine. Although it found that nicotine is a powerful and potent nerve acting drug, it did not address the issue of addiction. In addition, there was evidence suggesting that nicotine could serve as a reinforcer for monkeys, generated by work in the later 1960s at the University of Michigan. There was evidence suggesting the existence of a nicotine withdrawal syndrome dating to the Finnegan, Larson, and Haag study in 1945. There was evidence suggesting that injected nicotine could cause psychoactive effects and provide a substitute for tobacco from the Lennox Johnston study of 1942. While there was some indication of the important role played by nicotine, all such studies left too many significant gaps in the analysis of nicotine to draw definitive conclusions. Id. at 117:2-118:11.

847. In 1979, Michael Russell, one of the most prominent public health researchers on nicotine, wrote a chapter in a NIDA monograph, titled "Tobacco Dependence: Is Nicotine Rewarding or Aversive," exploring whether nicotine was an important factor in smoking. He concluded that it remained unproven "that nicotine is what smokers seek." ATX02 0068361-10068383 (US 65420). Dr. Russell noted key gaps in knowledge, and that animal models of nicotine self-administration had proven inconclusive. Henningfield WD, 126:18-127:10. At that point, the scientific and medical community simply did not have the knowledge of nicotine's pharmacological effects and the greater impact that a faster rate of delivery of the dose could

provide. Id.

848. It was not until 1980 that clinical psychiatrists determined that there was sufficient evidence of dependence and withdrawal from smoking to include these symptoms in the APA's Diagnostic and Statistical Manual ("DSM-III"). Even then, the syndromes were called "tobacco dependence" and "tobacco withdrawal" rather than "nicotine dependence" and "nicotine withdrawal," because of psychiatrists' insufficient knowledge and understanding of the specific role of nicotine. It was clear to the developers of the DSM-III that nicotine played a role in making smoking addictive, but there were unresolved questions as to the importance of nicotine as opposed to the numerous other constituents of tobacco smoke and behavioral components of smoking that were the possible addictive elements. Henningfield WD, 123:23-128:21.

849. It was not until 1982 that the National Institute of Drug Abuse ("NIDA") concluded that scientific evidence demonstrated that nicotine is addictive. Id. at 132:10-13. The Director of NIDA, Dr. William Pollin, testified to that conclusion before Congress in 1982 and 1983. HHA5002584-2590; US 58808. NIDA applied the 8 factors listed in the Controlled Substances Act of 1970 (“CSA”), all of which were used by the Food and Drug Administration ("FDA") and Drug Enforcement Agency ("DEA"), to determine if a substance should be officially designated an addictive drug, which is a "controlled substance" under the CSA. NIDA concluded that smoking met the following criteria for nicotine drug dependency: (1) persistent regular use of a drug; (2) attempts to stop such use which lead to discomfort and often result in termination of the effort to stop; (3) continued drug use despite damaging physical and/or psychological problems; and (4) persistent drug-seeking behavior. NIDA also concluded that "not only has tolerance to some of the effects of smoking been demonstrated but metabolic

tolerance to various components of cigarette smoke, including nicotine, has been documented." NIDA relied upon previously existing data as well as findings from its own Addiction Research Center showing that nicotine met key criteria as a reinforcing and euphoriant drug in animal and human studies. Id. at 133:1-134:13.

850. Finally, in 1988, the Surgeon General, in his Report on "The Health Consequences of Smoking -- Nicotine Addiction," reached the significant conclusion that the reason smokers smoke is because they are addicted to nicotine. After an exhaustive review of the literature on nicotine and smoking behavior, the Report found that cigarettes and other forms of tobacco are addicting, and that nicotine is the substance in tobacco that causes the addiction. The Health Consequences of Smoking: Nicotine Addiction: A Report of the Surgeon General (1988), VXA0300208-0848 (US 64591).

851. Relying in part upon the APA and WHO clinical findings that nicotine dependence and withdrawal could occur with tobacco use and that nicotine was the key pharmacological agent, and in part upon the chemical and pharmacological evidence considered by NIDA, the DEA, and the FDA in determining if a drug is addictive, the 1988 Surgeon General's Report set forth three primary criteria for determining whether a drug, in this case nicotine, is addicting: (1) use is highly controlled or compulsive; (2) the use of the drug produces mood altering (psychoactive) effects; and (3) the drug reinforces behavior, resulting in continued intake or drug-reinforced behavior. Henningfield WD, at 143:20-144:3; VXA0300208-0848(US 64591); Benowitz WD, 27:6-13.

852. The first criterion, highly controlled or compulsive use, refers to drug-seeking and drug-taking behavior that is driven by strong, often irresistible urges. Such use persists despite a

desire to quit or even repeated attempts to do so. This type of behavior has also been described as "habitual." Benowitz WD, 27:21-28:2.

853. Drug addiction, however, is distinguished from habitual behaviors not involving drugs -- such as habitual exercising or overeating -- by the second criterion, the presence in the blood stream of a drug with psychoactive or mood-altering effects on the brain. Food, for example, which is necessary to sustain life, is not a drug and does not satisfy the second criterion. Id. at 28:3-16. Smoking cigarettes involves a drug and is not comparable to non-drug "habits" such as jogging, playing tennis, or biting one's nails. Rowell TT, 3/23/05, 16685:5-16687:19.

854. Finally, to meet the third criterion in the Surgeon General's Report, the drug must be capable of functioning as a reinforcer that directly strengthens behavior leading to further drug ingestion. Such reinforcement exists where, for instance, the drug produces pleasant or rewarding sensations like stimulation, relaxation, or euphoria, or mitigates unpleasant withdrawal sensations experienced when a person stops using it. Benowitz WD, 28:17-29:7.

855. The 1988 SG Report demonstrated that nicotine in cigarettes meets the same criteria for addiction that apply to heroin, morphine, and cocaine and that the pharmacological and behavioral processes that determine tobacco addiction are similar to those that determine addiction to drugs such as heroin and cocaine. Henningfield WD, 143:13-19. The Report specifically found that nicotine, heroin, morphine, and cocaine all met the criteria for addiction.

856. Dr. Peter Rowell, one of the Defendants' experts, admitted that there are many similarities between the properties that determine tobacco addiction and those that determine heroin and/or cocaine addiction:

Q. And I want to direct your attention specifically to the third

major conclusion expressed by the Surgeon General in 1988, which appears at page 9, and it reads, quote, the pharmacologic and behavioral processes that determine tobacco addiction are similar to those that determine addiction to drugs such as heroin and cocaine. Do you see that?

A. Yes, I do.

Q. Do you agree or disagree with what the Surgeon General said about similarities existing between the pharmacologic and behavioral properties that determine tobacco addiction and those that determine addiction to drugs such as heroin and cocaine?

A. I agree there are similarities.

Q. Have you prepared an animation that -- well, before we get to that, let me ask you a further question. When you say that there are these similarities, what is the basis for your saying that there are similarities from a pharmacological point of view? What are you focusing on?

A. The dependence properties of nicotine and more dramatically cigarette smoking in regards to physical dependence, withdrawal symptoms, effects of neurochemistry in the brain on neurotransmitters, self-administration studies. Many of these things were done in the '80s just before the Surgeon General's report. So these were the similarities that led the Surgeon General to indicate that there were, in fact, these similarities between cigarette smoking and these other drugs.

Rowell TT, 3/22/05, 16549:23-16650:15.

857. The 1988 Surgeon General's Report did not include intoxication as a criterion for addiction. As discussed earlier, in the 1950s and early 1960s, it was believed that significant intoxication or impairment were required to sustain addiction. That requirement of addiction has long been abandoned by the WHO, the APA, and the Surgeon General because many

intoxicating substances are not addicting and because many addictive drugs are used and abused in dose levels that do not cause intoxication. Benowitz WD, 30:14-31:25; Henningfield WD, 145:20-146:5, 150:14-151:8.

858. Defendants' own expert witness, Dr. Rowell, rejected the claim that intoxication was necessary for nicotine to be considered addicting:

> Q. And, sir, it is correct, is it not, that it's been your view since the early 1970s that to be addictive, a drug does not have to cause intoxication?
>
> A. Yes.
>
> Q. The suggestion, then, that a drug cannot be addictive because it is not intoxicating, you wouldn't agree with that statement, correct?
>
> A. I would not.

Rowell TT, 3/23/05, 16632:4-7, 16632:23-16633:2.

859. In addition, the Surgeon General did not include either tolerance or withdrawal effects as criteria for addiction. However, the 1988 Surgeon General's report documented both tolerance and withdrawal and determined that nicotine met these additional criteria. See 1996 FDA Jurisdictional Determination, 61 Fed. Reg. 44619 (August 1996); VXA1242326-3211 at 2645-2651 (US 64323) (recognizing that nicotine is addictive even under the outdated 1964 SG Report/1957 WHO definition). However, neither tolerance nor withdrawal are the primary criteria of drug dependence/addiction.

860. In 1994, the APA published its Diagnostic and Statistical Manual of Mental Disorders-IV ("DSM-IV") which defined "substance dependence" as "a pattern of repeated self-administration that usually results in tolerance, withdrawal, and compulsive drug-taking

behavior." DSM-IV continued to recognize the diagnoses of both "nicotine dependence" and "nicotine withdrawal." American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders IV (1994) at 176-181 (JD 000460).

861. In the DSM-IV section titled "Nicotine-Related Disorders," the APA concluded that nicotine can produce dependence in people who use all forms of tobacco, including pipes, chewing tobacco, or cigarettes, because the following criteria are present: tolerance, withdrawal, a desire to quit, a great deal of time spent using nicotine, and the continued use despite medical problems. APA, DSM-IV (1994), at 176-181, 242-247 (JD 000460).

862. In describing the diagnosis of "Nicotine Dependence," the DSM-IV authors stated that, "Tolerance to nicotine is manifested by the absence of nausea, dizziness, and other characteristic symptoms despite using substantial amounts of nicotine or a diminished effect observed with continued use of the same amount of nicotine-containing products." Id.

863. The DSM-IV authors specifically rejected Defendants' oft-repeated public claim that smoking cigarettes does not produce withdrawal and therefore is not addictive: "Cessation of nicotine use produces a well-defined withdrawal syndrome that is described below. Many individuals who use nicotine take nicotine to relieve or avoid withdrawal symptoms when they wake up in the morning or after being in a situation where use is restricted." In addition, withdrawal symptoms "are typically more intense among individuals who smoke cigarettes than among individuals who use other nicotine-containing products." Id. at 243-244.

864. By 1988, almost every major public health organization, including the Surgeon General, the National Institute on Drug Abuse, the World Health Organization, the American Psychiatric Association, the Harvard School of Public Health, and others, had declared that

smoking is an addiction driven by the drug nicotine. Benowitz WD, 26:3-36:8.

865. Further reflecting the consensus judgment that nicotine is addictive, the investigation by the FDA leading to its Final Tobacco Rule issued in August 1996 confirmed that even under the stringent criteria employed by the FDA, nicotine in cigarettes is an addictive drug. Henningfield WD, 159:9-161:22. The FDA concluded in its August 1996 Final Rule that, "All major public health organizations in the United States and abroad with expertise in tobacco or drug addiction now recognize that the nicotine delivered by cigarettes and smokeless tobacco is addictive." 1996 FDA Jurisdictional Determination, 61 Fed. Reg. 44619 (August 1996) at xv, VXA1242326-3211 at 2572 (US 64323).

866. Defendants' own expert, Dr. Rowell, not only agreed that nicotine plays an essential role in cigarette smoking, Rowell TT, 3/23/05, 16625:12-25, but that "there is clearly addiction for cigarette smoking." Rowell TT, 3/24/05, 16790:4-16.

867. As the documentary evidence laid out in great detail infra shows, over the last forty years, Defendants have been no stranger to the term “addiction” in reference to smoking. In-house tobacco industry research, research not disclosed to the 1964 Surgeon General's Advisory Committee, showed drug addiction-like effects, including tolerance, withdrawal, compulsive use, and craving. The actions of BATCo and B&W, described below, are particularly illuminating on the issue of how far superior the cigarette company Defendants’ knowledge of nicotine and its behavioral and pharmacological effects was by 1964, compared to the relatively uninformed conclusion of the Advisory Committee to the Surgeon General who lacked that knowledge and its supporting research. See extended discussion at Section V(B)(3)(c-d), infra.

### c. Consequences of the Addictiveness of Nicotine

868. Today, most daily cigarette smokers satisfy the Surgeon General's primary criteria for addiction. First, as to highly controlled or compulsive use, addicted smokers smoke numerous cigarettes -- often at least one pack or 20 cigarettes -- throughout the day. Second, the nicotine in the cigarette tobacco stimulates the nicotinic receptors in the smoker's brain, producing a psychoactive reaction that affects the smoker's mood. Third, the smoking behavior is reinforced by the pleasurable effects of nicotine and/or by the mitigation of unpleasant withdrawal sensations triggered by the need for nicotine. Benowitz WD, 29:8-30:13.

869. Published research indicates that 77% to 92% of smokers are addicted to nicotine in cigarettes. 1996 FDA Jurisdictional Determination, VXA1242326-3211 at 2335, 2528 (US 64323).

870. Many smokers and potential smokers are unaware of or do not fully appreciate the addictive nature of nicotine, the addictiveness of cigarette smoking, and the extent to which nicotine delivery and dosage are +highly controlled and engineered. Weinstein WD, 61:5-74:2.

871. Every year, an estimated seventeen million people in the United States attempt to quit smoking. Fewer than one and a half million, or 8%, succeed in quitting permanently. Benowitz TT, 11/1/04, 4505:2-4506:13.

872. Most smokers smoke cigarettes regularly in order to experience nicotine's effects on the brain and the body, and thereby become addicted to nicotine. People who try to quit smoking often experience withdrawal symptoms that can be extremely disruptive. Accordingly, it is usually very difficult for the smoker to stop smoking cigarettes. Id., 4503:17-4506:13.

873. Most smokers who desire to quit require several quit attempts before they are

successfully able to give up cigarettes, and many smokers die of smoking-related diseases before they are able to quit. Id., 4505:2-4506:13.

874. Most smokers become addicted to smoking as teenagers. 88% of daily smokers tried their first cigarette before reaching age eighteen, and 70% of people who have ever smoked daily began smoking daily before they were eighteen years old. Because the addiction to nicotine develops in the first few years of cigarette smoking, most smokers become addicted to nicotine during adolescence or early adulthood. Benowitz WD, 38:15-39:2, 39:3-5, 9-10.

875. Research shows that 81% of adult smokers said that if they tried to quit for just a day, they experienced strong cravings for cigarettes. Of these, 95% said that the cravings were stronger than what they had expected when they began to smoke. Fewer adolescent smokers -- 46% -- reported that they would experience strong cravings if they tried to quit. Among those adolescents who said they experienced such cravings, 85% said that the cravings were stronger than what they had expected when they began to smoke. In short, people underestimate the addictive power of nicotine when they first become smokers. Weinstein WD, 66:3-69:19.

876. As for quitting, most smokers give no thought to how long they will smoke when they first begin, apparently believing that quitting is something that can be decided later. By then, addiction makes it extremely difficult to quit. In a large national survey, 24% of youth smokers said they expected to smoke for less than a year, 10% said one to five years, and only 5% said they expected to smoke longer than five years. A much larger proportion, 61%, said they had never thought about it. The corresponding figures for adult smokers were: less than one year - 12%, one to five years - 5%, longer than five years - 7%, and never thought about it - 76%. Id.

877. The Annenberg study, which surveyed 600 fourteen to twenty-two year olds in the

forty-eight contiguous states, asked smokers who said that they planned to try to quit in the next year, "If we called you again in a year, would you guess you would have successfully quit smoking?" A very high 83% of youths and 78% of adults said they expected to succeed in their quit attempt. The reality was that only 28% of teenage quitters managed to quit smoking for a year, and only 7% of adults smokers who tried to quit were able to remain cigarette free for a year. Id.

878. In another study, smokers who were planning to quit in the next year, and who had tried and failed in the past, were asked about their next quit attempt. From this group, 88% of youths and 64% of adults said that they would be nonsmokers a year later. Even among those who stated that quitting was very hard or almost impossible for others, 83% of youths and 57% of adults predicted their own success. Id.

879. These studies demonstrate that smokers and nonsmokers agree that quitting is difficult, and that teenage and adult smokers greatly overestimate the likelihood that their own individual quit attempts will succeed. Nearly half of teenage smokers think that quitting will be easy for them even though they think it will be very difficult for their peers. The evidence also indicates that people fail to consider the difficulty of quitting when they start to smoke and do not recognize how strong the cravings produced by addiction can be. In short, people, and youth in particular, have insufficient recognition of how difficult it will be for them to stop smoking even though they may have an intellectual understanding of the medical consequences of smoking. Id.

**d. Conclusion**

880. As the public health community's understanding of nicotine's pharmacological and behavioral effects on the human body has evolved, so has the terminology used to describe

nicotine. The scientific and medical community has struggled with the choice of the proper nomenclature to describe the human affinity for nicotine and has moved from "habituation" to "dependence" to "addiction." Since the mid-1980s, the scientific and medical community has viewed the terms "dependence" and "addiction" as virtually synonymous. In fact, many public health organizations, including NIDA, the American Association of Addiction Medicine, and the College on Problems of Drug Dependence, use the terms "drug addiction" and "drug dependence" interchangeably. Henningfield WD, 110:9-22. Indeed, the tobacco industry itself has used these terms interchangeably. See Section V(B)(3), infra.

881. The Surgeon General chose the term addiction in 1988 in order to effectively convey to the public the severity of smokers' attachment to nicotine, the intense difficulty of breaking that attachment, and the fact that the attachment is physiological and not merely a lack of willpower to stop doing something pleasurable. See Benowitz TT, 11/2/2004 at 4647:4-7, 4647:25-4648:9, 4655:6-4661:21 (JD -054316). In light of these facts, this Court will use "addiction" and "dependence" interchangeably. Disputes over terminology to describe the workings of nicotine should not obscure the reality that Defendants long ago internally recognized the same phenomenon that the scientific and medical community have struggled to understand and describe: the extraordinary hold that nicotine has on the human nervous system and the fact that such hold stems from nicotine's pharmacological properties.

### 3. Defendants Were Well Aware that Smoking and Nicotine Are Addictive

882. The wealth of documentary evidence examined in this Section, as well as Sections V(C) and (D), reveals that for decades Defendants knew and internally acknowledged that

nicotine is an addictive drug, that cigarettes are a nicotine delivery device, and that addiction can be enhanced and perpetuated through manipulating both the amount of nicotine and the method of nicotine delivery. Much of Defendants' knowledge of nicotine was obtained from in-house and industry-funded research into the pharmacological effects of the drug.

883. For example, internal documents reveal that Philip Morris researchers knew in 1969 that nicotine was "a powerful pharmacological agent" and that the company operated on the "premise that the primary motivation for smoking is to obtain the pharmacological effect of nicotine." 1003033413-3417 at 3413 (US 20143); 1003287836-7848 at 7837 (US 22848). RJR's lead nicotine researcher stated in 1972 that nicotine is the "sine qua non of smoking" and that the industry was based on the sale of "attractive dosage forms of nicotine." 500915683-5691 at 5684-5685 (US 20659). BATCo's sophisticated research from the early 1960s demonstrated that "smokers are nicotine addicts." 301083862-3865 at 3863 (US 20577). B&W, BATCo's American subsidiary, possessed the BATCo data and marketed cigarettes with the understanding that they "must provide the appropriate levels of nicotine." 501011512-1515 at 1513 (US 85309). Lorillard researchers accepted the scientific consensus in the 1970s that "the most probable reason for the addictive properties of the smoke is the nicotine." 82396938-6939 (US 22012). Liggett, like its larger cigarette manufacturer counterparts, was actively seeking ways to manipulate the nicotine delivery to smokers. LG0262125-2126 (US 59994).

884. Defendants have studied nicotine and its effects since the 1950s. The documents describing their research into and resulting knowledge of nicotine's pharmacological effects on smokers -- whether they characterized that effect as "addictive," "dependence" producing or "habituating," -- demonstrate unequivocally that Defendants understood the central role nicotine

plays in keeping smokers smoking, and thus its critical importance to the success of their industry.

885. Defendants' internal records also demonstrate that they knew that cigarette smoking, and tobacco in particular, were the vehicles for delivering nicotine -- the critical component in maintaining the addiction necessary to sustain and enhance their profits. Indeed, Defendants purposefully designed and sold products that delivered a pharmacologically effective dose of nicotine in order to create and sustain nicotine addiction in smokers. Henningfield WD, 87:19-103:13.

886. Other documents demonstrate Defendants' understanding and acceptance of nicotine's role in maintaining cigarette smoking by showing their recognition that smokers adjust their smoking behavior in order to obtain their necessary nicotine intake. This behavioral adaptation of smokers is known as "compensation," or "titration," a concept Defendants have been well aware of for many years. Henningfield WD, 49:14-55:5; Section V(E)(2)(b), infra.

887. These industry documents also support the conclusion that Defendants knew early on in their research that if a cigarette did not deliver a certain amount of nicotine, new smokers would not become addicted, and "confirmed" smokers would be able to quit.

888. The evidence set forth in this Section demonstrates the extensive knowledge Defendants have had since the 1950s about nicotine's addictive effects on smokers, their use of that knowledge to maintain and increase the sale of cigarettes, and their decades-long efforts both to deny the truth about the addictive nature of nicotine and to conceal their own internal research which generated that information.

**a. Philip Morris**

889. In a September 22, 1959 memorandum, Philip Morris's Vice President for Research and Development, Hugh Wakeham, emphasized the importance of nicotine to smoking, stating: "One of the main reasons people smoke is to experience the physiological effects of nicotine on the human system." 10005039423-9424 (US 21657).

890. In a November 15, 1961 presentation, Wakeham addressed the company's ability to control the nicotine content of its cigarettes. He stated that "low nicotine does stimulate, but high doses depress functions," and "continued usage develops tolerance." Wakeham further stated that: "Even though nicotine is believed essential to cigarette acceptability, a reduction in level may be desirable for medical reasons." 1000277423-7447 at 7438, 7441 (US 20088).

891. On March 5, 1964, William L. Dunn, a Philip Morris scientist/psychologist who later became the Principal Scientist for the company, commented at length on the possibility of developing a "surrogate" for cigarettes based on the importance of nicotine. He wrote:

> The pharmacological need [for cigarettes] is readily definable. The smoker seeks the subjective state that results from the introduction of nicotine into the bloodstream. There are some specifiable, some not specifiable changes in the physiological state accruing from the presence of nicotine. . . . There are undoubtedly other physiological reactions which are responsible for the sense of euphoria, or well-being, that the novice smoker experiences in the exaggerated form of dizziness. Without belaboring a most complex and little understood set of phenomena, suffice it to say that it is this subjective state which is sought by the smoker as he lights up.

1003700128-0133 at 0129 (US 20177).

892. In the same document, Dunn also stated that any less hazardous cigarette product developed by Philip Morris "must induce the psychopharmacological state now induced by nicotine absorption into the bloodstream." 1003700128-0133 at 0132 (US 20177).

893. A handwritten summary by Philip Morris researcher Ronald Tamol of a February 1, 1965 brand development meeting/presentation recorded the conclusion that the cigarette manufacturer who could come up with a "flavorful" low tar cigarette with "enough nicotine to keep smokers hooked . . . will reap huge benefits." 0002862-2867 at 2867 (US 88761).

894. In a June 1966 report titled "Market Potential of a Health Cigarette," Philip Morris researchers Dunn and Myron Johnston stated that without nicotine, a health cigarette would not sell:

> [A]ny health cigarette must compromise between health implications on the one hand and flavor and nicotine on the other. . . . Flavor and nicotine are both necessary to sell a cigarette. A cigarette that does not deliver nicotine cannot satisfy the habituated smoker and cannot lead to habituation, and therefore would almost certainly fail.

1001913853-3878 at 3860 (US 20123).

895. In a May 7, 1968 Philip Morris memorandum titled "TPN Intake by Smokers," Dunn wrote that "since there is evidence that the smoker adapts his puff, it is reasonable to anticipate that he adapts to maintain a fairly constant daily dosage." Thus, Philip Morris has known for over thirty-five years that smokers would "compensate" in order to maintain a constant intake, or dosage, of nicotine. 1003293548-3555 (US 35743).

896. Philip Morris was well aware that nicotine shared many attributes of an addictive drug. In a February 19, 1969 memorandum from Dunn to Wakeham, Dunn cautioned that nicotine was a drug with FDA implications. He also discussed the "dual action" of nicotine as a drug with pharmacological "stimulant-tranquilizer" effects that caused a "pleasant state of dizziness so clearly experienced by the beginning smoker and by the habituated smoker

following abstention." 1003289921-9922 at 9921 (US 20167).

897. In a Fall 1969 draft of the annual report titled "Why One Smokes," and presented to the Philip Morris Board of Directors, Wakeham emphasized the role of nicotine in smoking. He flatly stated:

> We share the conviction with others that it is the pharmacological effect of inhaled smoke which mediates the smoking habit. . . .
>
> We have then as our first premise, that the primary motivation for smoking is to obtain the pharmacological effect of nicotine.
>
> In the past we at R & D have said that we're not in the cigarette business, we're in the smoke business. It might be more pointed to observe that the cigarette is the vehicle of smoke, smoke is the vehicle of nicotine, and nicotine is the agent of a pleasurable body response. . . .
>
> This primary incentive to smoking gets obscured by the overlay secondary incentives, which have been superimposed upon the habit. Psychoanalysts have speculated about the importance of the sucking behavior, describing it as oral regression. Psychologists have proposed that the smoker is projecting an ego-image with puffing and his halo of smoke. One frequently hears "I have to have something to do with my hands" as a reason. All are perhaps operative motives, but we hold that none are adequate to sustain the habit in the absence of nicotine. . . .
>
> We are not suggesting that the effect of nicotine is responsible for the initiation of the habit. To the contrary. The first cigarette is a noxious experience to the noviate. To account for the fact that the beginning smoker will tolerate the unpleasantness, we must invoke a psychosocial motive. Smoking for the beginner is a symbolic act. The smoker is telling the world, "This is the kind of person I am. . . ."
>
> As the force from the psychosocial symbolism subsides, the pharmacological effect takes over to sustain the habit . . . .

1003287836-7848 at 7837-7839 (US 22848) (emphasis added).

898. In the final version of Wakeham's presentation, dated November 26, 1969, he largely restated material from the draft quoted above. In explaining that nicotine serves as both a stimulant and depressant, Wakeham stated that smoking maintenance depended solely on the pharmacological effects on smokers:

> We are of the conviction, in view of the foregoing, that the ultimate explanation for the perpetuated cigarette habit resides in the pharmacological effect of smoke upon the body of the smoker, the effect being most rewarding to the individual under stress.

1000273741-3771 at 3752 (US 26080).

899. Philip Morris also produced a February 16, 1970 Research and Development report titled "Some Methods Notes on the Past Research on Cigarette Smoker Motivation" which acknowledged that the smoking "pattern is strongly resistant to extinction." The report referred to the "puffing act" as an "injection of nicotine." 1003287849-7856 at 7849, 7853-7854 (US 85246).

900. Philip Morris's awareness of nicotine as the crucial ingredient in cigarettes was also made plain in a November 1, 1971 research report written by Thomas Schori and approved by Dunn. The report accepted a 1943 scientific study's results which suggested that a habitual smoker continues to smoke because of the pharmacological effects of nicotine in cigarettes. 1000350158-0188 (US 20176).

901. Notwithstanding its longtime public denials that smoking cessation induces withdrawal -- one of the classic hallmarks of addiction -- Philip Morris knew the extreme difficulty of quitting and the physical and mental effects of cessation attempts on the smoker. Scientists Dunn and Frank Ryan described some of the withdrawal effects of nicotine in a 1971

study on cessation in the following graphic terms:

> Even after eight months quitters were apt to report having neurotic symptoms, such as feeling depressed, being restless and tense, being ill-tempered, having a loss of energy, being apt to doze off. They were further troubled by constipation and weight gains which averaged about five pounds per quitter. . . . This is not the happy picture painted by the Cancer Society's anti-smoking commercial which shows an exuberant couple leaping into the air and kicking their heels with joy because they have kicked the habit. A more appropriate commercial would show a restless, nervous, constipated husband bickering viciously with his bitchy wife who is nagging him about his slothful behavior and growing waistline.

1000348671-8751 at 8676, 8708 (US 20097).

902. With respect to the phenomenon of nicotine "compensation," Schori and Dunn wrote in a January 1972 Report titled "Tar, Nicotine, and Cigarette Consumption" that their research

> supports the notion that smokers develop a daily nicotine intake quota and that when smoking cigarettes differing in nicotine delivery from that to which they are accustomed they tend to modify their consumption rate in order to maintain their normal quota. No support was found for the analogous notion of a daily tar intake quota, however.

1003285403-5416 at 5403 (US 20159).

903. In a 1972 "Confidential" research report titled "Motives and Incentives in Cigarette Smoking," Dunn asserted that people smoke in order "to obtain nicotine," and that nicotine "is the industry's product," adding that "without nicotine, the argument goes, there would be no smoking." In the report, Dunn summarized a 1972 CTR-sponsored conference held on the Caribbean island of St. Martin. More commonly known as St. Martin Conference, the meeting was not a secret. Some scientists unconnected to the tobacco industry attended and the

proceedings of the conference were published shortly thereafter. (no bates) (JD 040795). Dunn wrote:

> The majority of the conferees would go even further and accept the proposition that nicotine is the active constituent of cigarette smoke.
>
> Without nicotine, the argument goes, there would be no smoking. Some strong evidence marshaled to support this argument:
>
> 1) No one has ever become a cigarette smoker by smoking cigarettes without nicotine.
>
> 2) Most of the physiological responses to inhaled smoke have been shown to be nicotine-related.

2023193286-3304 at 3289 (US 22967); 503654881-4885 (US 88413); 105394371-4388 (US 88414).

904. Most graphically, Dunn urged the industry to adopt the following approach:

> Think of the cigarette pack as a storage container for a day's supply of nicotine. . . .
>
> Think of the cigarette as a dispenser for a dose unit of nicotine: it is readily prepped for dispensing nicotine. . . .
>
> Think of a puff of smoke as the vehicle of nicotine. . . .
>
> Smoke is beyond question the most optimized vehicle of nicotine and the cigarette the most optimized dispenser of smoke.

2023193286-3304 at 3290-3291 (US 22967).

905. During a presentation of his paper delivered at St. Martin and at the 1972 CORESTA/TCRC Joint Conference, Dunn summarized his conclusions from current research on why people smoke. Dunn wrote that, "It is contended in this paper that nicotine, specially packed, is the cigarette industry's product." Dunn added that, "The smoker takes nicotine into his

system in order to obtain the salutory effects of nicotine upon body function." 1001820498-0500 at 0498 (US 26121); 2021423403-3497 at 3484 (US 36743); 89285181-5188 at 5181 (US 23583).

906. Philip Morris also documented compensation as further evidence of addiction. A March 1973 Philip Morris Research Report titled "Smoking Behavior: Real World Observations," written by Philip Morris scientists Dunn, Thomas Schori and Janet Duggins, reported that a Philip Morris in-house study had shown that, "the smokers in this study are now smoking cigarettes delivering less tar and nicotine than those they smoked in 1968 and that they are smoking both more rod per cigarette and more cigarettes." 1000353355-3410 at 3361 (US 35242).

907. In a May 8, 1974 presentation to Philip Morris USA President Clifford Goldsmith, Dunn explained how in-house research suggested that smokers titrate or regulate their smoke intake to get what they want out of the smoke:

> I'm sure you are aware of our belief that people smoke for rewards they get from smoke at the pharmacological level. . . . It's simply not an adequate explanation to say that smoking is a habit, or that it is social behavior. A smoker is introducing something into his system that he wants. Certain components of smoke, most likely nicotine, act upon his system in some undetermined way to give him some undetermined pleasure. If this is true, then we expect the smoker to seek to take in that amount of smoke that does the job best for him. He is going to regulate his intake to suit his need. . . We are hypothesizing that the smoker titrates (regulates) his smoke intake to suit his dosage needs.

100324972-4976 at 4972-4973 (US 85248).

908. Research conducted at the Philip Morris Research Laboratory in June 1974 using high nicotine and low nicotine cigarettes "showed the existence of a definite compensation

mechanism" among smokers. According to the report, titled "Human Smoking Habits," these findings were consistent with:

> evidence in literature that the nicotine of cigarette smoke exerts a distinct pharmacological effect on the smoker which reinforces the smoking behavior. The smoker doses himself with nicotine according to his personal needs which depend on the level of arousal, external stress, his personality and, possibly, a number of other factors.

1001812883-2903 at 2883 (US 85249).

909. In an undated handwritten memo, probably written in the 1970s, Dunn voices his surprise that the industry could not fully separate nicotine from tar, given what the company knew of nicotine at that time:

> It is also remarkable that nicotine delivery has not been liberated from tar delivery, particularly in view of the importance of nicotine as the significant, if not the primary gratification component of the smoke. This is not to say that the task is simple: it is not simple. Consider the ways currently available for altering the nicotine delivery level, with accompanying reasons why these ways do not readily permit independent nicotine variation.

1003285420-5424 at 5420 (US 85250); 2021423403-3497 at 3464 (US 36743).

910. Dunn then listed the methods at Philip Morris's disposal to manipulate nicotine delivery in its products, including air dilution, filtration, nicotine extraction/addition, leaf selection, and base additives to increase pH. 1003285420-5424 at 5421-5422 (US 85250).

911. In March 1975, Helmut Wakeham proposed an industry scientific conference on "The Regulatory Influence of Smoking Upon Human Behavior" to discuss research ideas into the effects of stimulant and calming effects of smoking. LWODJ9056332-6332 (US 87072*); LWODJ9056318-6323 (US 87071).

912. In a May 14, 1975 report evaluating the relationship between a steep short-term decline in sales of Marlboro to a concurrent decline in nicotine, Dunn wrote:

> Nicotine has been singled out for attention because many investigators of smoking behavior, including some P.M. R&D people, have contended that the seasoned cigarette smoker smokes for the nicotine in the smoke. In view of that contention, the question has been raised as to whether the declining nicotine delivery values reported for Marlboro Red could be responsible for the declining sales increment.

0000024914-4920 (US 26072).

913. In a September 8, 1975 letter to long-time Philip Morris-funded researcher Stanley Schachter, a psychology professor at Columbia University, Dunn discussed a reduction in nicotine in Marlboro cigarettes and acknowledged the existence of smoker's compensation to obtain more nicotine, which he referred to as "the goodies":

> Thus to accommodate to the 15% reduction in available Marlboro nicotine, the smoker who was getting 50% of the available nicotine into his blood from the Marlboro delivering 1.3 mg of nicotine into a smoking machine and now must get 59% of what the current Marlboro offers him. He can take bigger puffs, or inhale more from the supply drawn into the mouth (we have varying quantities of residual smoke in the mouth at the end of an inhalation) or for more efficient extraction of the goodies, he can draw it in deeper or hold it in longer.

1000738509-8510 at 8510 (US 85251).

914. Philip Morris funded Schachter's research for many years. However, his studies of nicotine and human behavior led him to eventually conclude that smoking was indeed addictive. He reported to Philip Morris in 1977 that, "We propose instead that virtually all long-time smokers, heavy or light, are addicted and suggest that many, perhaps all, exceptions to the addiction model can be understood in terms of such notions as self-control, concern with health,

restraints, etc." 1003291155-1191 at 1189 (US 87074); 1003291151-1153 (US 87075).

915. An October 1, 1975 Philip Morris research memorandum titled "Smoke Impact, Part I: Cigarette Smoking and Heart Rate" stated that: "Nicotine is the main determinant for sustaining the smoking habit" and "there is an optimal dose of nicotine, too little or too much is rejected by tobacco smokers." 1003294245-4261 at 4246 (US 20170).

916. In approximately 1976, Philip Morris researcher Frank Ryan explained why people smoke in terms of habit versus need. In Ryan's view, the habit of smoking was very distinct from the smoker's need for nicotine. In a November 11, 1977 memorandum titled "Smoker Psychology," Ryan described nicotine intake as the "critical mainstay of tobacco consumption," and provided the following background for research to be carried out at Virginia Commonwealth University:

> Many of [a smoker's] cigarettes will be smoked out of habit (i.e., will be conditioned responses triggered by external cues) rather than out of any nicotine need (i.e., will be conditioned responses triggered by internal cues). All these cigarettes contribute to the total nicotine in the system, so that a cigarette smoked out of habit will delay the time until a cigarette is smoked out of need.

1003287995-7995 (US 35702) (emphasis in original).

917. In a March 1, 1977 memorandum, Schachter described a smoker as an "addict" who smokes to maintain his nicotine levels:

> To the extent that [he is] an addict, he is probably smoking to keep nicotine or one of its active metabolites at some optimal level. If, then, the heavy smoker does switch to low nicotine brands, he may very well end up smoking more cigarettes and taking more puffs of each.

1003724353-4387 at 4353 (US 21887).

918. In a November 29, 1977 memorandum, Philip Morris Director of Science and Technology, Thomas Osdene, discussed his concerns about a presentation made by Dr. Donald H. Ford, a new CTR staff member, which acknowledged that "Opiates and nicotine may be similar in action"; "We accept the fact that nicotine is habituating"; and "There is a relationship between nicotine and the opiates." 1005045000-5000 (US 20194).

919. In a December 19, 1977 interoffice memorandum sent to Osdene, titled "Behavioral Research Accomplishments -- 1977," Dunn acknowledged the importance of nicotine for the smoker when he listed as one of Philip Morris's 1977 successes the fact that the company had "shown that [it] can distinguish between regulator and nonregulator smokers and that after being deprived, the regulators do indeed try to make up for lost intake." "Regulators" were defined as smokers who "smoke for nicotine." 1003293322-3330 at 3322, 3324-3325 (US 35741).

920. Aware of nicotine's importance to the company and the industry, Osdene voiced concerns at a meeting with the scientific director of CTR in New York on January 5, 1978. Philip Morris had sent Osdene and Robert B. Seligman, Vice President of Research and Development, to CTR to discuss several contract research programs. One of those programs concerned nicotine antagonists -- i.e., drugs which oppose or block the pharmacological and chemical effects of nicotine as opposed to nicotine analogs, which are substitutes for nicotine and interact with the body in the same pharmacological and chemical way. Seligman's comments revealed the importance of nicotine to the future of cigarette manufacturing. According to Osdene's memorandum of the meeting:

> Dr. Seligman brought up the grant by Dr. Abood in which one of

> the stated aims was to make a clinically acceptable antagonist to nicotine. This goal would have the potential of putting the tobacco manufacturers out of business.

1000286213-6214 at 6213 (US 35204); see also 1000041904-1905 (US 35103).

921. In a March 1978 report titled "Exit-Brand Cigarettes: A Study of Ex-Smokers," scientist Frank J. Ryan of the Philip Morris Research Center in Richmond revealed Philip Morris's substantial understanding of the role of nicotine in tobacco use at that time: "We think that most smokers can be considered nicotine seekers, for the pharmacological effect of nicotine is one of the rewards that come from smoking. When the smoker quits, he foregoes his accustomed nicotine. The change is very noticeable, he misses the reward, and so he returns to smoking." 1000368057-8080 at 8060 (US 20098*).

922. In the same March 1978 report, Ryan stated that, "If the industry's introduction of acceptable low-nicotine products does make it easier for dedicated smokers to quit, then the wisdom of the introduction is open to debate." 1000368057-8080 at 8060 (US 20098*) (emphasis in original).

923. In the late 1970s and well into the 1980s, Philip Morris carried out the “Nicotine Program.” This major research initiative studied nicotine's effects on the central and peripheral nervous systems, nicotine analogs, and "behavioral effects" of nicotine. 1003033413-3417 (US 20143); 1003289974-9975 (US 21553); 1000125871-5872 (US 34273); 1000127789-7790 (US 34422); 2022150943-0951 (US 85254).

924. Wakeham, having apparently read a review of the Philip Morris Nicotine Program by Dunn, wrote a memorandum of concern to Seligman dated February 22, 1979. While Wakeham disagreed with the program’s primary focus on nicotine, he admitted that, "I do not

deny that many smokers maintain the habit for psychopharmacological reasons." 1003293238-3239 at 3238 (US 26150).

925. In a February 3, 1979 letter to Philip Morris President and CEO Hugh Cullman titled "The Slow Motion Self-Suicide of the Tobacco Industry," D. Todorovic, a retired Philip Morris International researcher, stressed the negative impact of "cigarette substitutes" on conventional cigarette sales and recommended against their development:

> It is obvious that such a tremendous sales gain of “cigarette substitutes” is done at the expense of normal, conventional cigarettes, and there lies all the danger in the near future for the very survival of [the] Tobacco Industry, because these “cigarette substitutes” are unable to make smokers addicts to tobacco. The present smokers of “cigarette substitutes” are the future smoker quitters.

2010064696-4699 at 4697 (US 20303).

926. Ian Uydess, a Philip Morris scientist from 1977 until 1989, stated that Philip Morris knew that a cause and effect relationship existed between market performance and nicotine delivery levels. The declaration also makes clear that nicotine was distinct from taste:

> This belief . . . was reflected in many of the comments made at a number of internal meetings at which zero and "ultra low" delivery products were being discussed. Some scientists even predicted that products made with "no" or "too low" a level of nicotine would probably fail in test markets, "no matter what they tasted like."

521102262-2286 (US 30497).

927. There can be no question taste was not the reason that nicotine was used as a necessary component of cigarettes. Philip Morris scientists understood very well that, as far as "taste" was concerned, nicotine, standing alone, had an "acrid burning taste." 2060537042-7045 (US 87077).

928. In a March 21, 1980 memorandum to Dr. Seligman, Dunn described in detail the Philip Morris-directed "Nicotine Receptor Program," a research initiative aimed at "understanding the specific action of nicotine which causes the smoker to repeatedly introduce nicotine into his body." However, Dunn stated cautiously that, "Any action on our part, such as research on the psychopharmacology of nicotine, which implicitly or explicitly treats nicotine as a drug, could well be viewed as a tacit acknowledgment that nicotine is a drug," and, therefore, subject to FDA regulation. 0000127789-7790 at 7789 (US 21794); 2022249518-9518 at 9518 (US 35152); 1000127789-7790 (US 34422).

929. Dr. Dunn also revealed the concerns of the industry's attorneys that the issue of nicotine addiction could enhance the claims of smokers' lawsuits:

> The psychopharmacology of nicotine is a highly vexatious topic. It is where the action is for those doing fundamental research on smoking, and from where most likely will come significant scientific developments profoundly influencing the industry. Yet it is where our attorneys least want us to be, for two reasons. It is important to have these two reasons expressed and distinguished from one another. The first reason is the oldest and most implicit in the legal strategy employed over the years in defending corporations within the industry from the claims of heirs and estates of deceased smokers: “We within the industry are ignorant of any relationships between smoking and disease. Within our laboratories no work is being conducted on biological systems.” That posture has moderated considerably as our attorneys have come to acknowledge that the original carte blanche avoidance of all biological research is not required in order to plead ignorance about any pathological relationship between smoke and smoker.

1000127789-7790 (US 34422).

930. Dunn pointed out to Seligman that "the acute, transient, short-lived effects of nicotine upon a physiological system" were the "effect sought by the smoker." In the attachment

to his memo, Dunn summed up the relationship between his company and nicotine as follows: "PM sells cigarettes. Cigarettes deliver nicotine." 0000127789-7790 at 7789 (US 21794); 1000127791-7792 (US 34422); 2022249518-9518 at 9518 (US 35152).

931. Dunn's memorandum to Seligman was preceded by that of another Philip Morris scientist, James L. Charles, who also provided Seligman an assessment of the "Nicotine Receptor Program" on March 18, 1980. Charles opened his memorandum with the following observations:

> Nicotine is a powerful pharmacological agent with multiple sites of action and may be the most important component of cigarette smoke. Nicotine and an understanding of its properties are important to the continued well-being of our cigarette business since this alkaloid has been cited often as "the reason for smoking" and theories have been advanced for "nicotine titration" by the smoker.

100328974-8975 at 8974 (US 87078).

932. Charles had made similar observations about nicotine in an earlier memorandum outlining the Philip Morris Nicotine Program dated December 1, 1978. He stated that his views had not changed in the intervening years. 1003033413-3417 (US 20143).

933. Dunn wrote another memorandum dated March 24, 1980 to Seligman relating to a parallel effort at Philip Morris to create cigarettes with even higher nicotine to tar ratios, stating:

> If even only some smokers smoke for the nicotine effect (I personally believe most regular smokers do) then in today's climate we would do well to have a low TPM [total particulate matter, or tar] and CO [carbon monoxide] delivering cigarette that can supply adequate nicotine.

1003285586-5586 (US 22029).

934. In an August 12, 1980 memorandum to the Vice President of Research and

company Directors, Thomas Osdene ranked nicotine research -- and specifically the Philip Morris Nicotine Program -- as one of the company's top Research and Development priorities because "the thing we sell most is nicotine":

> Nicotine Program. This program includes both behavioral effects as well as chemical investigation. My reason for this high priority is that I believe the thing we sell most is nicotine.

1003030124-0125 at 0124 (US 26132).

935. Philip Morris's nicotine research program included studies which began before 1980 and continued until 1984 to develop nicotine analogs as part of a purposeful effort to find a nicotine-equivalent drug that would retain nicotine's effects on the brain without nicotine's known adverse cardiovascular and carcinogenic effects. DeNoble WD, 5:7-11; 7:8-13; 1003033413-3417 (US 20143); 1003289974-9975 (US 21553); 1000127789-7790 (US 34422); 2022150943-0951 (US 85254); 2020154437-4437 (US 85266).

936. The premise of the research was that "people smoke primarily because of nicotine's rewarding effects on the brain." This research could then, in theory, assist Philip Morris in removing nicotine from tobacco, substituting the analog that lacked nicotine's adverse cardiovascular effects, and thus produce a "safer" cigarette that still possessed nicotine's reinforcing effects on the smoker. DeNoble WD, 8:10-13; 9:13-16. As Dr. William Farone, who worked for Philip Morris from 1976 to 1984 and was Director of Applied Research, explained, this was the second part of a "two-step process" of internal research, neither of which was pursued by Philip Morris to commercialization. See, Farone TT, 10/7/04, 2023:10-17. (Farone's background is discussed at ¶ 1594, infra.)

937. Philip Morris shared its extensive nicotine and smoking behavior knowledge with

BATCo. According to an October 12, 1979 "RESTRICTED" report from BATCo scientist L.C.F. Blackman, he accepted Philip Morris's invitation to visit the Philip Morris Research Center, and was briefed by scientists Osdene, Seligman, and Levy on the company's work, including the development of nicotine alternatives, nicotine discrimination studies, and EEG research. 109877492-7499 (US 87079*).

938. With respect to tolerance, a March 16, 1983 memorandum from Dr. Charles to Dr. Osdene stated that, "We can successfully defend the absence of withdrawal under controlled experiments, but we cannot defend tolerance. Tolerance to nicotine is a well-established fact." 1005061346-1346 (US 20199); 2022252680-2680 (US 36873).

939. Philip Morris's sales director in the United Kingdom, George Mackin, wrote an article for a British tobacconist magazine, dated December 4, 1981, in which he admitted that cigarettes were addictive and that smokers developed tolerance. Mackin wrote that cigarettes were important to overall sales at British convenience stores because:

> Cigarettes are not just habit forming -- the body builds up a requirement for them. Twenty million smokers cannot do without their weed. Take the example of a man going to work in the morning. It's pouring with rain. There are six cars already parked outside the shop. So, there are at least 90 yards to walk back. Would he stop for a newspaper? Would he get out for a Kit Kat?
>
> The answer is probably No, but he would stop for his fags, because he is addicted to cigarettes. And while he is buying a pack, he takes a morning paper and a Kit Kat.

2501013567-3568 (US 27920); 504336658-6658 (US 85261).

940. The Mackin article caused a stir among several cigarette manufacturers, as well as Shook, Hardy & Bacon, when news of his statements became known. However, none of the

lawyers who commented on the article disagreed with it. For example, one Philip Morris attorney in Switzerland noted that the Mackin's admissions were only "very unfortunate" and "could cause a lot of problems for us." Another attorney wrote more to the point that "in the product liability context these concepts are important, particularly as regards issues of risk assumption." 024950721-0721 (US 20404); 2501013567-3568 (US 27920); 2024950723-0723 (US 37175); 501626662-6662 (US 85264).

941. Philip Morris knew a significant portion of its customers wanted to quit but could not do so. A March 29, 1985 presentation at a "meeting of top management" was titled "The Perspective of PM International on Smoking and Health Issues." In this presentation, management was told that:

> There are some 50 million smokers today in the U.S. I realize that research tells us that the majority of smokers wished they did not smoke and are, therefore, unlikely to be of much help to the industry.

2023268329-8337 at 8331 (US 26784).

942. According to Dr. William Farone, "Defendants have long understood that cigarettes are addictive and that nicotine is the agent in cigarette smoke primarily responsible for addiction. . . ." Farone WD, 72:10-11; Farone TT, 10/07/04, 1984:19-24.

943. Farone stated that "when I was at Philip Morris, there was widespread acceptance internally throughout the company -- among executives, scientists, and marketing people -- that nicotine was the primary component of tobacco and cigarette smoke responsible for smoker's addiction to smoking." Farone WD, 72:21-73:1.

944. Dr. Farone discussed with other Philip Morris scientists whether smoking was

addictive. These discussions revealed "widespread agreement among scientists in R&D that smoking is addictive," id. at 74:10-23, and "a widespread conviction that nicotine is the chemical agent delivered by cigarettes that is primarily responsible for addiction to smoking," id. at 75:1-6. This widespread agreement on the addictiveness of smoking came from "both internal and external research, about nicotine and its primary role in keeping people smoking." Id. at 75:17-23.

945. Philip Morris's intensive internal research on nicotine continued into the 1990s. For example, a May 22, 1990 report stamped "PERSONAL AND CONFIDENTIAL" to scientific director Richard Carchman from company chemists/scientists Frank Gullotta, C.S. Hayes, and B.R. Martin reported on the "Stereospecific Effects of Nicotine and Electrophysiological and Subjective Responses." This research contrasted the physiological effects of two forms of nicotine, "d-nicotine" and "l-nicotine," using human smokers. 2025986606-6612 (US 20421).

946. Many other Philip Morris documents reveal the company's in-depth knowledge of nicotine and a desire to exploit nicotine's effects on the human body. 2025986350-6401 (US 87080); 1000385483-5522 (US 87311); 1000221722-1726 (US 87081); 1003290519-0531 (US 87082); 1003287880-7890 (US 20163); 2023069596-9604 (US 87083); 1003294165-4180 (US 87084); 2062951465-1477 (US 87312); 1003292806-2811 (US 87086); 1003295309-5310 (US 87087); 1000128672-8672 (US 87088); 2022163557-3560 (US 87089).

947. A November 8, 1990 Philip Morris memorandum to Research and Development Vice President Cathy Ellis from Frank Gullotta titled "Raison d'etre" stated: "We have shown that there are optimal cigarette nicotine deliveries for producing the most favorable physiological

and behavioral responses. Our laboratory has demonstrated that all forms of nicotine are not behaviorally or physiologically equal. This observation is important for evaluating research cigarettes where the addition of nicotine is necessary." 2028813366-3368 at 3366 (US 20430).

948. The Philip Morris Nicotine Program was described in detail in a lengthy 1992 review prepared by outside counsel Shook, Hardy & Bacon titled "Philip Morris Behavioral Research Program." In this review, counsel summarized many aspects of the company program, directed by Dunn, and cited specific documents showing a major internal research initiative that began in 1969 and ended abruptly in 1984. 2021423403-3461 at 3408-3409 (US 36743).

949. The Shook, Hardy & Bacon document described how Philip Morris Nicotine Program scientists demonstrated tolerance to nicotine, behavioral effects, nervous system effects, and other results consistent with dependence and addiction. 2021423403-3461 at 3440-3443 (US 36743).

950. The 1992 report also made clear that the program generated results and was still generating data in 1984 related to nicotine receptors, analogs, peripheral nervous system effects, central nervous system effects, effects on animal behavior, and differences between high nicotine delivery and low nicotine delivery cigarettes. With respect to the reasons why the Nicotine Program was ended in 1984, the report simply states that: "For reasons never stated in any internal documents, Philip Morris cancelled the Nicotine Program in spring 1984. The decision to cancel the program may have been the result of outside counsel's legal advice." 2021423403-3461 at 3408 (US 36743).

951. A similar 1994 Shook, Hardy & Bacon report titled "Philip Morris Research on Nicotine Pharmacology and Human Smoking Behavior" reviewed and detailed much of the

material described in the 1992 review. For example, the 1994 report summarized Dr. DeNoble's research showing that nicotine and acetaldehyde were synergistically reinforcing: “It was DeNoble's experience with acetaldehyde that it condensed in the brain to form Dopamine-like compounds and made the animal somewhat ‘euphoric.’” 2046819241-9265 at 9249 (US 85265*). See extended discussion of this topic in Sections V(B)(5)(a)(¶¶1299-1301) and V(C)(2)(e)(¶¶ 1695-1700).

952. The 1994 report also described how DeNoble was able to demonstrate both "behavioral tolerance" and "metabolic tolerance" to nicotine, other important aspects of addiction. 2046819241-9265 at 9250-9251 (US 85265*).

953. The report later noted that "additional research on nicotine/acetaldehyde synergism may have shown that cigarettes were in fact addictive." The Shook, Hardy & Bacon lawyers who prepared this report after reviewing their client's documents wrote: "Laboratory Shutdown [CAVEAT: Significance is self-evident.]" 2046819241-9265 at 9254, 9256-9258 (US 85265*). Drs. DeNoble and Mele described the research objectives and projects undertaken by the Philip Morris Behavioral Research Program in the 1970s and 1980s. DeNoble WD; Mele WD. In addition, the planning, findings, and significance of Dr. DeNoble's research in particular are described in numerous Philip Morris documents. 1002973585-3615 (US 35632*); 2056145924-5927 (US 87090); 1003293284-3293 (US 85252); 1003060443-0503 (US 87091); 1003582081-2082 (US 35826); 1002973179-3180 (US 87092); 1001894698-4705 (US 87093); 1000052405-2413 (US 87094); 1000017985-8021 (US 87095); 1003293138-3144 (US 87096); 1000017375 (US 85258); 1003060638-0643 (US 87099); 1003186849-6854 (US 87101); 1000128665-8667 (US 87102); 1000128662-8663 (US 87103); 1000128664-8664 (US 87104);

1000128668-8671 (US 87105); 1003293241-3243 (US 87106); 1003293216-3217 (US 87107); 1000413881-3964 (US 20100); 1003198459-8461 (US 20156); 1003720350-0352 (US 87108); 2047340075-0079 (US 87109); 2022955358-5361 (US 87110); 2022955501-5502 (US 87111); 2057069742-9769 (US 88762).

954. Philip Morris Planning Director Barbara Reuter prepared an analysis of the company's plans to market an alternative nicotine delivery product under the code name "TABLE" in 1993. The 20-page plan, dated October 1992 and stamped "CONFIDENTIAL," stated the following in the "Background" section:

> Different people smoke cigarettes for different reasons. But, the primary reason is to deliver nicotine into their bodies. Nicotine is an alkaloid derived from the tobacco plant. It is a physiologically active nitrogen containing substance. Similar organic chemicals include nicotine, quinine, cocaine, atropine, and morphine. While each of these substances can be used to affect human physiology, nicotine has a particularly broad range of influence.
>
> During the smoking act, nicotine is inhaled into the lungs in smoke, enters the bloodstream and travels to the brain in about eight to ten seconds. The nicotine alters the state of the smoker by becoming a neurotransmitter and a stimulant. Nicotine mimics the body's most important neurotransmitter, acetylcholine (ACH), which controls heart rate and message sending within the brain. The nicotine is used to change psychological states leading to enhanced mental performance and relaxation. A little nicotine seems to stimulate, while a lot sedates a person. A smoker learns to control the delivery of nicotine through the smoking technique to create the desired mood state. In general, the smoker uses nicotine's control to moderate a mood, arousing attention in boring situations and calming anxiety in tense situations. Smoking enhances the smoker's mental performance and reduces anxiety in a sensorially pleasurable form.

2020154466-4486 at 4467 (US 26722); 2020154437-4437 (US 85266).

955. Altria General Counsel Murray Bring acknowledged the addictiveness of smoking

in a July 31, 1992 internal memo on PMC letterhead to William Campbell and Bill Murray which discussed recent research on cocaine, and posed these questions from then-PM CEO Michael Miles: “First, how do we stay up to date on the state of smoking cessation technology; second, what effect would a reliable, readily available “habit breaker” have on our business; and third, what -- if any -- contingency plans should we be making now?” 2074091232-1232 (US 27480).

956. An October 2, 1992 memorandum from Philip Morris scientist Dr. Carolyn Levy to William Campbell reviewed the efficacy of nicotine patches coupled with behavioral therapy to achieve smoking cessation success. Levy stated that the company was almost ready with an alternative nicotine delivery device. She concluded that, "This suggests that at the very least we should have contingency plans for a change in the predominant form of nicotine usage. . . . If these circuits do mediate nicotine intake and they could be blocked, then it is possible that cigarettes' appeal would decline." 2023012974-2975 (US 36943).

**b. R.J. Reynolds**

957. Many documents indicate that R.J. Reynolds also had a sophisticated understanding of nicotine’s role in smoking. For example, on November 16, 1967, RJR scientist Eldon D. Nielson responded to an inquiry about a nicotine inhibitor patent saying that the tobacco companies would not want such an item, as they were "selling a nicotine effect, not fighting it." 502001177-1177 (US 29547).

958. In 1971, RJR scientist Anders H. Laurene internally proposed that the company undertake research into determining more precisely the "habituating level of nicotine." Laurene asked the question, "How low can we go?" 504210018-0018 (US 50577); 522598277-8277 (US

80744).

959. In a March 28, 1972 memorandum regarding the development of new products, RJR scientist Claude Teague stated that for the typical smoker, "nicotine satisfaction is the dominant desire" and that "[i]n designing any cigarette product, the dominant specification should be nicotine delivery." 5002504536-4544 at 4538 (US 21747); Langenfeld TT, 3/14/05, 15309:20-15310:4.

960. Claude Teague was the RJR equivalent/counterpart to William Dunn at Philip Morris. In an April 14, 1972 report titled "Research Planning Memorandum on the Nature of the Tobacco Business and the Crucial Role of Nicotine Therein," Teague stated:

> In a sense, the tobacco industry may be thought of as being a specialized, highly ritualized and stylized segment of the pharmaceutical industry. Tobacco products, uniquely, contain and deliver nicotine, a potent drug with a variety of physiological effects. . . . Nicotine is known to be a habit-forming alkaloid, hence the confirmed user of tobacco products is primarily seeking the physiological "satisfaction" derived from nicotine - and perhaps other active compounds. His choice of product and pattern of usage are primarily determined by his individual nicotine dosage requirements and secondarily by a variety of other considerations including flavor and irritancy of the product, social patterns and needs, physical and manipulative gratifications, convenience, cost, health considerations and the like. Thus a tobacco product is, in essence, a vehicle for delivery of nicotine, designed to deliver the nicotine in a generally acceptable and attractive form. Our industry is then based upon design, manufacture and sale of attractive dosage forms of nicotine, and our Company's position in our Industry is determined by our ability to produce dosage forms of nicotine which have more overall value, tangible or intangible, to the consumer than those of our competitors.

500915683-5691 at 5684-5685 (US 20659).

961. Teague later stated in his report that:

> If nicotine is the sine qua non of tobacco products and tobacco products are recognized as being attractive dosage forms of nicotine, then it is logical to design our products -- and where possible, our advertising -- around nicotine delivery rather than 'tar' delivery or flavor. To do this we need to develop new data on such things as the physiological effects of nicotine, the rate of absorption and elimination of nicotine delivered in different doses at different frequencies and by different routes, and ways of enhancing or diminishing nicotine effects and "satisfactions."

500915683-5691 at 5685-5686 (US 20659) (emphasis in original).

962. Teague also answered the industry's often-heard "nicotine is for taste" argument by stating that, "I believe that for the typical smoker nicotine satisfaction is the dominant desire, as opposed to flavor and other satisfactions." 500915683-5691 (US 20659).

963. Later in the same report, Teague noted the vital role of nicotine to the fundamental existence of the cigarette industry:

> If, as proposed above, nicotine is the sine qua non of smoking, and if we meekly accept the allegations of our critics and move toward reduction or elimination of nicotine from our products, then we shall eventually liquidate our business. If we intend to remain in business and our business is the manufacture and sale of dosage forms of nicotine, then at some point we must make a stand.

500915683-5691 at 5688 (US 20659) (emphasis in original).

964. At the close of his April 14, 1972 memorandum on nicotine, Teague recommended the following courses of action for RJR:

> 1. Recognize the key role of nicotine in consumer satisfaction, and design and promote our products with this in mind.
>
> 2. More precisely define the minimum amount of nicotine required for 'satisfaction' in terms of dose levels, dose frequency, dosage form, and the like. This would involve biological and other experiments.

3. Sponsor in-depth studies of the physiological, psychological and other effects of nicotine, aimed at demonstrating the beneficial effects of nicotine and at disproving allegations that nicotine produces major adverse effects.

4. Study, design and evaluate new or improved systems for delivery of nicotine which will provide the minimum satisfying amount of nicotine in attractive form, free of allegedly harmful combustion products.

5. Study means for enhancing nicotine satisfaction via synergists, alteration of pH, or other means, to minimize dose level and maximize desired effects.

6. Monitor developments in materials and products which may compete with nicotine products or which might be combined with nicotine products to provide added advantages or satisfactions.

7. Monitor work by others which might be aimed at improved nicotine delivery systems of the type proposed here.

8. Search for and evaluate other physiologically active components of tobacco or its smoke which may provide desired effects to the smoker.

500915683-5691 at 5690-5691 (US 20659).

965. In 1973, at the request of RJR President William D. Hobbs, Teague prepared a "SECRET" report titled "Implications and Activities Arising From Correlation of Smoke pH with Nicotine Impact, Other Smoke Qualities, and Cigarette Sales." Teague reiterated to company executives RJR's knowledge of the importance of effective nicotine delivery in its competition with Marlboro and Kool:

> In essence, a cigarette is a system for delivery of nicotine to the smoker in attractive, useful form. At "normal" smoke pH, or at below about 6.0, essentially all of the smoke nicotine is chemically combined with acidic substances, hence is non-volatile and

> relatively slowly absorbed by the smoker. As the smoke pH increases above about 6.0, an increasing proportion of the total smoke nicotine occurs in "free" form, which is volatile, rapidly absorbed by the smoker, and believed to be instantly perceived as nicotine "kick". . . .
>
> As a result of its higher smoke pH, the current Marlboro, despite a two-thirds reduction in smoke "tar" and nicotine over the years, calculates to have essentially the same amount of "free" nicotine in its smoke as did the early WINSTON. . . .
>
> In addition to enhancing nicotine "kick," increasing the pH (increasing alkalinity) of smoke above about 6.0 causes other changes, particularly when the increase in smoke pH is achieved by adding ammonia to the blend.

509314122-4148 at 4125 (US 20828*).

966. Teague wrote a "Confidential" memorandum, dated February 2, 1973, titled "Some Thoughts About New Brands of Cigarettes for the Youth Market." In this memorandum, Teague contrasted novice smokers with "confirmed" smokers. He stated that while "pre-smokers" and "learners" start smoking for psychological reasons (fitting in with the crowd, self-image, boredom relief), "once the 'learning' period is over, the physical effects become of overriding importance and desirability to the confirmed smoker, and the psychological effects, except the tension-relieving effect, largely wane in importance or disappear." 502987357-7368 at 7359 (US 21475).

967. In an August 4, 1976 speech to RJR's international division, Director of Research, Murray Senkus, affirmed the indispensable role of nicotine, stating, "In smoking the effect produced on the human body is ascribable to nicotine" and "Without any question, the desire to smoke is based on the effect of nicotine on the body." 501525355-5366 at 5356, 5358 (US 29531).

968. In a RJR August 1976 "Three-Year Action Plan for New Products," nicotine was described as a "traditional need," and "very basic to the cigarette industry's existence." 500672011-2172 at 2078-2105, 2107 (US 20645).

969. In a September 21, 1976 internal RJR memorandum from John L. McKenzie to A.P. Ritchy titled "Product Characterization Definitions and Implications," nicotine was defined as "the psychopharmacological agent in tobacco which is one of the key factors in satisfaction. . . ." 500380562-0564 at 0563 (US 20630).

970. A November 9, 1976 memorandum on nicotine circulated among RJR scientists reviewed the known physiological effects of nicotine on the body and acknowledged the company's ongoing desire to increase or hold steady the nicotine content of its cigarettes while reducing tar. The memo, titled "Nicotine Research," also acknowledged tolerance to nicotine: "Habituated smokers, both male and female, metabolize nicotine more rapidly than non-smokers, indicating the bodily metabolic acclimation to nicotine." The memo contradicted industry claims that smokers seek nicotine only as a matter of "taste": in-house studies concluded that detectable nicotine produced the taste described as "foul, rotten rubber" and that "Nicotine is definitely an irritant in smoke and its taste must be blended out or modified by other constituents in the TPM to make smoke acceptable." 509078812-8820 at 8814-8815 (US 85271).

971. In a February 7, 1978 memorandum titled "Nicotine Satisfaction – Consumer Test," RJR researchers C.L. Neumann and J.P. Dickerson stated that the focus of the consumer satisfaction program would be on nicotine, as it was "probably the most important satisfaction variable," and because nicotine had "known physiological activity." 504479948-9954 at 9549 (US 20729).

972. In another example, a February 5, 1980 interoffice memorandum from H.E. Guess stated the concern that the reduced level of nicotine in RJR's Winston B Cigarettes would make them less attractive to Winston smokers. 504675307-5307 (US 21549).

973. RJR scientist D.H. Piehl reviewed the scientific literature on nicotine and maintenance of the smoking habit in a "Confidential" internal paper for the company titled "Smoking Behavior -- A Review." In his paper, Piehl summarized with approval many studies which described the preeminent importance of nicotine to smokers, the various "need" levels of nicotine, nicotine dependence, and addiction. 504972347-2362 at 2362 (US 50710).

974. Scientists at RJR had known for years that most smokers get "hooked" and are unable to quit. Teague wrote a memorandum dated December 1, 1982 to Research and Development Vice President Robert DiMarco in which he stated that RJR needed to tailor its marketing to the reality that "most of those who have smoked for any significant time would like to stop," and most smokers "would stop using if they could." Teague also stated that RJR needed to contemplate the future scenario where smokers who want to stop can stop; if this happened, he wrote, RJR would "go out of business." Therefore, RJR "cannot be comfortable marketing a product which most of our consumers would do without if they could." 500898255-8257 at 8256 (US 48652).

975. An undated RJR document, written after 1984, titled "R&D Outline" listed "Nicotine as a drug" as a topic for departmental discussion. The outline provided for a "discussion of a string of industry memos and reports, dating back to at least the early 1970's, in which industry scientists and execs seem to admit to nicotine's qualities as a drug." The document described several examples, including a 1971 B&W letter, a 1972 RJR report and a

1972 Philip Morris summary of a meeting of industry scientists. 522606315-6317 at 6316 (US 85273).

976. Like Philip Morris, RJR documented smoker compensation. An April 15, 1983 RJR draft document titled "Smoker Compensation Review" reiterated the company's knowledge that smokers of low tar/nicotine products compensated to obtain more nicotine, and that the FTC method of measuring nicotine was flawed. The document included the following in a section titled "Impact of Known Compensatory Behavior On Cigarette Rankings":

> Based on the results of studies similar to those summarized above, it has been stated that low -- “tar” smokers use their cigarettes differently than smokers of higher -- “tar” products. Different “usage” includes propensity to block vents or otherwise manipulate the cigarette, increasing the number of puffs and the number of cigarettes smoked, puffing more frequently or with larger volumes and inhaling more deeply or holding smoke in the lungs longer. These usage patterns are consistent with the theory that low -- “tar” smokers seek to maintain a given nicotine level in the body, regardless of the cigarette. The patterns cited are instances which would tend to increase the “dosage” of nicotine to the smoker.

This statement reveals both RJR's continuing view of smokers as "nicotine seekers" who alter their smoking method to obtain the necessary "dosage" of nicotine, as well as its comprehensive understanding of the compensation phenomenon. 501524500-4514 at 4506 (US 85272).

977. In another undated RJR document written sometime after 1978, a Biobehavioral Department presentation titled "Biobehavioral Aspects of Smoking," the speaker discussed how "maintenance" of the smoking habit for 80% of smokers was related to the "tranquilizing effects" of nicotine. The speaker emphasized at various points that "nicotine is the substance people desire in their use of tobacco," "animals will self-administer nicotine in a laboratory setting," evidence that "smokers smoke to maintain a constant level of nicotine in the body," and that "the

fact remains that smokers do not continue to smoke unless their cigarettes contain nicotine." 517214547-4557 (US 87113*).

978. After Dr. Benowitz published his 1983 groundbreaking paper on compensation by smokers of low nicotine yield products, see Benowitz WD, 67:10-18, RJR scientist John Robinson wrote a critique of the paper to Dr. Alan Rodgman in which he stated:

> The paper itself expresses what we in Biobehavioral have felt for quite some time. That is, smokers smoke differently than the FTC machine and may very well smoke to obtain a certain level of nicotine in their bloodstream. If a given level of nicotine in the blood is the final goal of a smoker, one would predict that he would smoke an FFT [full flavor tar] and ULT [ultra low tar] cigarette differently.

510994429-4429 (US 85274).

979. Robinson wrote that the Benowitz paper brought to mind a past industry study comparing German Camel cigarettes with Marlboro cigarettes, where "smokers apparently obtained almost exactly the same amount of nicotine no matter which of the four cigarettes they smoked." Robinson recalled that the study "was one of the first indications that smokers may in fact smoke to obtain a certain level of nicotine in their bloodstream." 510994429-4429 (US 85274).

980. In preparation for an RJR "brainstorming session" at the company's Flavor and Biobehavior Divisions, Donald L. Roberts told employees in an October 13, 1983 memorandum that, "The functions a cigarette serves are many fold involving social, psychological and physiological. A short definition is that a cigarette supplies nicotine to the consumer in a palatable and convenient form." Roberts clearly distinguished nicotine from taste, stating that, "The cigarette's taste is a relatively unimportant benefit of smoking. Its taste is primarily a

delivery vehicle[.]" 503602711-2714 at 2712 (US 85275).

981. In a June 3, 1985 RJR document titled "Report on Medical and Scientific Issues -- Addiction," the scientist authors attempted to examine current scientific literature to assist the industry with respect to the scientific consensus on nicotine addiction. As part of their review, the scientists reviewed literature compiled by the tobacco law firms of Jacob, Medinger & Finnegan, Shook, Hardy & Bacon, and Jones Day. The scientists wrote in their report that, "Both Mr. Wrobleski [Jacob, Medinger & Finnegan] and Mr. Sirridge [Shook, Hardy & Bacon] warned, however, that there is very little literature favorable to the industry's position on addiction." 515878492-8522 at 8494. (US 30251).

982. RJR's R&D department embarked on a large-scale nicotine research program in 1988, described in a lengthy October 7, 1988 project report titled "An Integrated Research Program for the Study of Nicotine and Its Analogs." Its purpose was to continue looking into the "pharmacological potency," "biological activity," and central nervous system effects of nicotine and nicotine analogs. The researchers posited that:

> What is known about nicotine is that it elicits the typical consequences of sympathoadrenal activation when administered in doses that produce plasma concentrations similar to those achieved during smoking. Among these are tachycardia, increases in blood pressure, cardiac output, and stroke volume . . . . In addition, there is a fair amount of tolerance induced with regard to sympathetic activation by smoking or chronic nicotine administration.

514894567-4676 at 4586-4587 (US 20862).

983. A May 3, 1991 RJR Research and Development report described a tobacco modification and nicotine manipulation project code-named the "REST Program." One key objective of the Program was to "Independently control nicotine delivery, from very low to

elevated levels, to address consumer wants and as a research tool." The basis for the Controlled Nicotine Process component of "REST" was that

> We are basically in the nicotine business. It is in the best long term interest for RJR to be able to control and effectively utilize every pound of nicotine we purchase. Effective control of nicotine in our products should equate to a significant product performance and cost advantage.

509479574-9587 at 9577, 9584 (US 20829).

984. According to the Wall Street Journal, former RJR Nabisco CEO F. Ross Johnson candidly admitted during a 1994 interview that, "Of course it's addictive. That's why you smoke the stuff." Wall Street Journal, Big Spender Finds a New Place to Spend, October 6, 1994. WAS0491982-1985 (US 61440).

985. In a 1998 memorandum titled "ECLIPSE Taste and Satisfaction Improvements," D.E. Townsend stated that R&D staffs were "encouraged to pursue diligently Eclipse designs with increased nicotine yield in an effort, in part, to increase consumer acceptance of the product." He later added: "If increased nicotine yield helps give improved consumer acceptance in the market, then possible benefits of this potentially reduced risk product would be greater." 526013569-3569 (US 85276); 700245849-5849 (US 85277).

986. In an August 10, 1985 memorandum titled “Smoking and Health Litigation, Tactical Proposals,” RJR’s lawyers at Jones Day recognized that their client had long since acknowledged the addictiveness of nicotine and smoking. 680712261-2337 at 2308 (US 87114). They also observed that:

> "Addiction" has received little industry research attention. Nevertheless, many industry documents support the contention that there are types of persons whose psychological profile and

> smoking behavior is such that they have great difficulty in quitting. For example, documents describe a British American Tobacco Company sponsored conference in 1978, attended by PM and B&W representatives. One of the findings of the conference was: "Serious smokers smoke to prevent withdrawal symptoms. Another study which Dr. Piehl (RJRT) cites recognizes "addictive" smokers: "People who find it unbearable to run out of cigarettes are described as using addictive-type smoking." The industry has also recognized that some smokers, especially smokers of high nicotine cigarettes "compensate" or regulate nicotine intake if it is lowered in individual cigarettes.

681879254-9715 at 9302-9303 (US 21020).

987. In the same Jones Day memorandum, the authors provide examples from Defendants' files where the companies (with emphasis on RJR) and their employees admit the primacy of nicotine to cigarettes and the addictiveness or dependence-producing quality of their products. 681879254-9715 at 9601-9643 (US 21020).

**c. BATCo**

988. Many documents disclose that BATCo had an intimate understanding of nicotine's role in smoking, as well as its effects on smokers long before the medical and public health community reached a similar level of sophistication. Moreover, many BATCo documents disclose how BATCo and other Defendants, in particular B&W, used BATCo's knowledge of nicotine for commercial gain.

989. BATCo knew that nicotine was an essential component of cigarettes as early as the 1950s. A June 1959 BATCo internal document pointed out that the company must consider "the question of nicotine and its effect on the smoker." The author stated that the company had to choose between maintaining current nicotine content "in order to maintain the firmly entrenched nicotine habit developed by the majority of smokers," or reducing the nicotine content

to meet consumer demand for lower nicotine products. However, the writer cautioned that

> To lower nicotine too much might end up destroying the nicotine habit in a large number of consumers and prevent it from ever being acquired by new smokers.

100099115-9117 at 9117 (US 20112); Henningfield WD, 88:21-89:10.

990. In a November 15, 1961 memorandum reviewing secret nicotine research and development projects, Sir Charles Ellis, scientific advisor to the BAT Board of Directors, acknowledged BATCo's understanding that nicotine is addictive:

> Experiments of Hippo have led to a great increase in our knowledge of the effects of nicotine. . . . Smoking demonstrably is a habit based on a combination of psychological and physiological pleasure, and it also has strong indications of being an addiction. It differs in important features from addiction to other alkaloid drugs, but yet there are sufficient similarities to justify stating that smokers are nicotine addicts.

301083862-3865 at 3863 (US 20577).

991. In the same 1961 internal document reviewing BATCo's secret nicotine research, Ellis emphasized the company's need to determine exactly what made smoking and nicotine addictive:

> If the competition is to be met successfully, it must be important to know how the tranquilizing and stimulating effects of nicotine are produced and the relation of addiction to the daily nicotine intake. These are the reasons for proposing that Project Hippo be continued with the particular object of finding the causes of the pleasurable physiological effects and the causes of addiction.

301083862-3865 at 3863 (US 20577).

992. As early as February 13, 1962, Sir Charles Ellis provided an overview of the company's massive nicotine research program in a "Private and Confidential" memorandum titled

"The Effects of Smoking." Ellis recited in his memorandum that BATCo research into the "physiological and psychological effects of smoking" being conducted by Battelle Laboratories began in 1959, and was carried out in the intervening years under various project "code names" including "MAD HATTER I," "MAD HATTER II," "MAD HATTER III," "HIPPO I," "HIPPO II," and "ARIEL." 301083820-3835 at 3820-3824 (JE 46579).

993. In the February 13, 1962 memorandum, Ellis devoted a lengthy section to the commercial importance of the company's nicotine research objectives. He explained that the reason BATCo commissioned the "MAD HATTER" and "HIPPO" research projects was "to understand addiction . . . [and to] appreciate the strength and vulnerability of our position." Ellis wrote further in detail:

> However, the force of the habit or the strength of addiction is not such as to give any grounds for complacency in the face of alternative methods of stimulating the body to meet stress, and that is just where the danger lies since alternatives are becoming available. In the last few years there has been a quite remarkable increase in the production of tranquilliser drugs, and while most of these need a doctor's prescription there is already one on free sale in Switzerland (Librium made by Hoffman LaRoche). If such drugs become more freely available they will compete with nicotine, which is a natural tranquilliser, and will leave smoking primarily dependent on its psychological effects for the maintenance of the habit.
>
> What we need to know above all things is what constitutes the hold of smoking, that is, to understand addiction. . . .
>
> These are the reasons for the study of the physiological effects of nicotine carried out under the MAD HATTER and HIPPO contracts, and they have sufficient force alone to justify this expenditure. . . .

301083820-3835 at 3826-3827 (JE 46579).

994. Ellis described in another section of his memorandum the outcome of BATCo's efforts to learn about nicotine and its role in smoking. He further delineated some of the concrete conclusions which the BATCo research had reached, reiterating unequivocally that BATCo believed nicotine was addictive and explaining graphically the relationship of the research to addiction:

> As a result of these various researches we now possess a knowledge of the effects of nicotine far more extensive than exists in published scientific literature. It is indeed so extensive and represents so much new thought that it is not easy to condense the material of these several reports and working papers without over-simplification.
>
> Nicotine, however administered, rapidly gets into the blood stream and the lymph system, and once there has a number of varied effects. . . . By far the most important effect is that of mobilising the resources of the body to resist stress. That this occurs has been known from the earliest days of smoking but no explanation exists in the published literature. Battelle [Laboratories] have now carried out experiments which are beginning to show how nicotine enters into the mechanism of this vital reaction. . . .
>
> The stimulation to resist stress occurs almost immediately on absorption of nicotine, and the effect -- that is, the extra supply of cortico steroids in the blood -- falls off markedly within a matter of thirty minutes. Addiction is something quite different from this since it is well known that the craving for nicotine in a confirmed smoker who stops smoking persists for ten, twenty or thirty days.
>
> We believe that we have found possible reasons for addiction in two other phenomena that accompany steady absorption of nicotine.

301083820-3835 at 3828-3829 (JE 46579).

995. The two additional "phenomena" that Ellis referred to in his February 1962 memorandum were responsible for nicotine addiction were tolerance and withdrawal:

> Experiments have so far only been carried out with rats, but with these it is found that certain rats become tolerant to repeated doses and after a while show the usual nicotine reactions but only on a very diminished scale. The interesting point is that these tolerant or nicotine-conditioned rats are found to have a greatly enhanced power of detoxification of nicotine in their liver. Crudely put, they can stand up to high continuous doses of nicotine just because their liver has developed the ability to dispose of it more rapidly and efficiently. . . . As long as the smoker keeps to his normal regime and the nicotine level in his blood remains high there is a steady job for these [liver] enzymes, and the whole situation is normal and under control. But if now the smoker stops smoking and there is no longer nicotine in his blood then in the liver there is this supply of enzymes with nothing to work on. In fact, they proceed to work on other material passing through the liver, with consequent disturbance of the body's working and with all sorts of alarm signals sent back to the brain. The effects of unbalanced enzymes is not unlike unbalanced nicotine, and the abstaining smoker experiences physiological reactions as acute as a novice who starts smoking. When to this one adds the longing for that immediate stimulation to resist stress that comes from smoking a cigarette it would appear that we are making progress towards understanding addiction. . . .
>
> Thus we have already greatly increased our knowledge of the manifold ways in which nicotine affects the body and, in particular, have identified and studied separately the stress resisting mechanism and the other effect on the liver which we believe is responsible for addiction.

301083820-3835 at 3829-3830 (JE 46579).

996. In the final section of his paper, Ellis discussed some particulars of the nicotine projects code-named "PROJECT HIPPO II" and "PROJECT ARIEL." He stated that the secret "physiological and biochemical" PROJECT HIPPO research "should lead to an understanding of the mechanism which creates addiction" and confirm that "addiction depended on the enzymes involved in the metabolism of nicotine in the liver." 301083820-3835 at 3832 (JE 46579). While BATCo did not submit this work to the 1964 Surgeon General's Advisory Committee,

some Battelle research, on dependence to nicotine developing in stressed but not unstressed rats, was submitted and cited in the 1964 Report. (no bates) (JD 032048); (no bates) (US 64591 at 125). See also Section V(B)(5)(f).

997. "PROJECT ARIEL" was a secret project to develop an alternative nicotine delivery device to compete with work that Ellis believed was being carried out at the American Tobacco Company and RJR. Ellis also justified the project with his concern that the "drug industry" could "at any time attempt to invade the cigarette smoke field by alternative drugs." He stated that the final product "must have within it the ultimate possibilities of meeting the psychological demands of smokers as well as the physiological ones." 301083820-3835 at 3833-3835 (JE 46579).

998. The concluding section of Ellis' memorandum revealed the high level of secrecy accorded the company's nicotine research:

> FUTURE POLICY.
>
> For good reasons the results of Battelle's work have been kept at a high level of secrecy, but they are now building up to such a comprehensive picture of the action of nicotine that I suggest they should soon be made available in detail to a few of our top scientists.

301083820-3835 at 3835 (JE 46579).

999. Thus, as early as 1962, BAT had reached the internal corporate conclusion that smoking was an addiction produced by nicotine, and met the requisite criteria in terms of cravings, compulsive use, physiological effects on the body, tolerance, and withdrawal. In a paper presented to a 1962 BAT conference in Southampton, England, attended by B&W representatives, Sir Charles Ellis openly stated that "smoking is a habit of addiction." Ellis's

presentation was preceded by an introduction from the chairman of BAT, A.D. McCormick. The substance of the conference was included in a BAT conference report titled, "Smoking and Health - Policy on Research," produced from B&W files. 650344433-4493 (US 53468).

1000. McCormick told attendees at the 1962 conference that the "best way to deal with the [smoking and health] matter was on an industry rather than an individual company level." He then introduced Ellis. In his presentation, Ellis stated:

> Smoking is a habit of addiction that is pleasurable; many people, therefore, find themselves sub-consciously prepared to believe it must be wrong.

650344433-4493 at 4439 (US 53468).

1001. Ellis later added:

> One result of the recent public discussions on smoking and health must have been to make each of us examine whether smoking is just a habit of addiction or has any positive benefits. It is my conviction that nicotine is a very remarkable beneficent drug that both helps the body to resist external stress and also can as a result show a pronounced tranquillising effect. . . . Nicotine is not only a very fine drug, but the techniques of administration by smoking has considerable psychological advantages and a built-in control against excessive absorption.

110070785-0842 (US 20270); 650344433-4493 at 4450-51 (US 53468).

1002. In January 1962, Battelle scientists working for BATCo submitted their "Final Report on Project HIPPO I." The purposes of the project were to study: (1) the action of nicotine in the diuresis mechanism; (2) the possible interference of nicotine in the "stress" mechanism; (3) the inhibiting effect of nicotine on body weight; and (4) the possible activity of nicotine on other hypothalamic functions. The report stated in the introduction the working question: "It is an everyday experience to each smoker that smoking a cigarette helps mastering the numerous

stressful stimuli of modern life. This effect is probably one of the most powerful reasons which make one smoke. How does nicotine exert this action?" 105620620-0683 at 0622-0625 (US 20247).

1003. The "HIPPO I" researchers concluded that:

> From all our data it seems that the effect of nicotine in the "stress reaction" is a very prominent and very complicated one. The understanding and thorough investigation of this effect seems of the greatest importance: it is by this very effect that nicotine acts as a "tranquilliser."

105620620-0683 at 0683 (US 20247).

1004. At about this same time, Battelle drafted a January 3, 1962 research proposal regarding "Project Ariel" for BATCo in London. According to the proposal, the proposed new smoking device would administer nicotine while "avoiding the well-known disadvantages inherent in actual cigarette smoking," but it needed to resemble a tobacco smoking product "to avoid interference with the legislation in force about drugs," and "it should also create addiction in the same relative amounts." 100335808-5816 at 5811, 5814 (US 20173).

1005. Throughout the 1960s, BATCo continued to discuss and research the Ariel product that was known simply as a nicotine delivery device that would allow the smoker to "obtain a satisfying dose of nicotine" without any of the harmful effects from smoke. 100335894-5918 at 5897 (US 20174).

1006. By 1964, BATCo had developed the prototype of Ariel which allowed for "a reasonably even release of nicotine" for the smoker. 100175613-5617 at 5616 (US 20115).

1007. BATCo continued its Project HIPPO for several years. In a March 1963 study titled "Final Report on Project HIPPO II," scientists C.H. Kaselbach and O. Libert reported the

results of their sophisticated comparison of nicotine to tranquilizers, a comparison that built on the earlier findings of HIPPO I. Their report to BATCo stated at the outset that:

> The aim of the whole research "HIPPO" was to understand some of the activities of nicotine -- those activities that could explain why cigarette smokers are so fond of their habit. It was also our purpose to compare these effects with those of the new drugs called "tranquillizers," which might supercede tobacco in the near future. . . . The reasons for the "pleasure of smoking" must be found partly in the relief of anxiety that cigarette smoking brings so constantly, and in such a very short time.

105620569-0605 at 0572 (US 20246).

1008. Later in the "Final Report on Project HIPPO II," the researchers revealed their conclusion that while nicotine differs in some respects from tranquilizers, nicotine causes both tolerance and addiction, and is in fact addictive:

> A quantitative investigation of the relationship with time of nicotine -- and of some possible brain mediators -- on adreno-corticotropic activity could give us the key to the explanation of both phenomena of tolerance and of addiction, in showing the symptoms of withdrawal.

105620569-0605 at 0575 (US 20246).

1009. Having obtained a clear understanding of the fundamental issue that nicotine was addictive, BATCo researchers targeted and sought to understand the actual mechanism of addiction. In a May 30, 1963 report titled "A Tentative Hypothesis on Nicotine Addiction," Dr. G. Haselbach and Dr. O. Libert, scientists performing work for BATCo, discussed nicotine's ability to produce tolerance and postulated a sophisticated explanation for nicotine addiction:

> The hypothalamo-pituitary stimulation of nicotine is the beneficial mechanism which makes people smoke; in other words, nicotine helps people cope with stress. In the beginning of nicotine consumption, relatively small doses can perform the desired action.

> Chronic intake of nicotine tends to restore the normal physiological functioning of the endocrine system, so that ever-increasing dose levels of nicotine are necessary to maintain the desired action. Unlike other dopings, such as morphine, the demand for increasing levels is relatively slow for nicotine.
>
> In a chronic smoker the normal equilibrium in the corticotropin releasing system can be maintained only by continuous nicotine intake. . . . If nicotine intake, however, is prohibited to the chronic smokers, the corticotropin-releasing ability of the hypothalamus is greatly reduced, so that these individuals are left with an unbalanced endocrine system. A body left in this unbalanced status craves for renewed drug intake in order to restore the physiological equilibrium. This unconscious desire explains the addiction of the individual to nicotine. . . .
>
> In conclusion, a tentative hypothesis for the explanation of nicotine addiction would be that of an unconscious desire to restore the normal physiological equilibrium of the corticotropin-releasing system in a body in which the normal functioning of the system has been weakened by chronic intake of nicotine.

536480912-0914 at 0912, 0914 (US 20928).

1010. In a 1963 research report titled "The Fate of Nicotine in the Body," BATCo researchers reported their conclusions as to nicotine pharmacology and mechanisms of tolerance and addiction. The scientists emphasized that nicotine was a key part of "tobacco habituation and/or addiction" and that the tobacco industry should focus its future research on the effects of nicotine in the bodies of smokers:

> There is increasing evidence that nicotine is the key factor in controlling, through the central nervous system, a number of beneficial effects of tobacco smoke, including its action in the presence of stress situations. In addition, the alkaloid appears to be intimately connected with the phenomenon of tobacco habituation (tolerance) and/or addiction. Detailed knowledge of these effects of nicotine in the body of smokers is therefore of vital importance to the tobacco industry, not only in connection with their present standard products, but also with regard to future potential uses of

tobacco alkaloids.

501012199-2255 at 2202 (US 21562).

1011. BATCo also participated in the nicotine research carried out at the Huntington Research Centre in Huntington, England. A scientific study prepared by Huntington for either BATCo or Imperial Tobacco is described in an undated report from the late 1960s titled "Effects of Nicotine on Electrocortical Activity and Acetylcholine Release from the Cerebral Cortex of the Squirrel Monkey." In this report, researchers stated at the outset that, "The habitual use of tobacco may be related to numerous factors amongst which the pharmacological effects of nicotine on the central nervous system figure dominantly." The report then went on to describe the complex and significant effects of nicotine on acetylcholine release in animal brains, and stated that "The doses of nicotine used in these experiments are based on the reported smoking dose." 680050472-0485 (US 53985).

1012. Another "Confidential" Huntington in-depth study focusing on nicotine's drug-like effects on the primate brain was titled "Effects of Nicotine on the Central Nervous System." This study was addressed to Imperial Tobacco, and a copy was forwarded to BATCo. The authors of this study explained the tests they planned to conduct to understand how nicotine affects "physiological processes and behavioural functions of the central nervous system of the primate" and described some preliminary results 680050504-0521 (US 53986).

1013. BATCo was also provided nicotine research funded by its Australian affiliate, BATAS. For example, BATCo had knowledge of a 1970 University of Melbourne study titled "The Absorption and Effects of Nicotine from Inhaled Tobacco Smoke." The Australian study program assessed nicotine blood levels and physiological effects, the transfer of nicotine to the

blood, and the absorption of nicotine in the mouth. 680050575-0589 (US 53987).

1014. BATCo scientists understood that the addictive impact and potential of nicotine is enhanced by the speed at which, and form in which, it reaches the brain. An August 7, 1964 memorandum from H.D. Anderson, Vice President of Research and Development, to BATCo President, Sir Richard P. Dobson, discussed the enhancement of nicotine "kick" through the addition of potassium carbonate to tobacco:

> There seems no doubt that the "kick" of a cigarette is due to the concentration of nicotine in the blood-stream which it achieves and this is a product of the quantity of nicotine in the smoke and the speed of transfer of that nicotine from the smoke to the blood-stream.
>
> Nicotine is in the smoke in two forms as free nicotine base (think of ammonia) and as a nicotine salt (think of ammonium chloride) and it is almost certain that the free nicotine base is absorbed faster into the blood-stream. Thus the effect of this potassium carbonate treatment, even though it does reduce the total quantity of nicotine in the smoke, may be to enhance the effect of what is left until it is equal or maybe greater in physiological effect than in the original smoke.

100059066-9067 at 9067 (US 20102).

1015. A 1966 internal tobacco industry report issued by BATCo scientist I.W. Hughes also emphasized that the effects of nicotine on the human body were a function of the speed at which nicotine reaches the brain and the form it takes:

> It would appear that increased smoker response is associated with nicotine reaching the brain more quickly. . . . On this basis, it appears reasonable to assume that the increased response of a smoker to the smoke with a higher amount of extractable nicotine may be either because the nicotine reaches the brain in a different chemical form or because it reaches the brain more quickly.

00039304-9490 at 9306, 9310 (US 34187).

1016. In a March 2, 1967 memorandum from BATCo Chief Scientist S.J. Green to Deputy Chairman Desmond Hobson, Green broadly evaluated BATCo scientific research. With respect to nicotine, he reported the following:

> Work on the psychopharmacology and pharmacology of nicotine is accelerating. There is now no doubt that nicotine plays a large part in the action of smoking for many smokers. It may be useful, therefore, to look at the tobacco industry as if for a large part of its business is the administration of nicotine (in the clinical sense). . . . The main objective of our research is to make the administration of nicotine better by . . . making the administration pleasanter or more convenient.

WAS0433494-3500 at 3497 (US 86690).

1017. In a March 20, 1967 document titled "First Meeting with U.S. Company Lawyers," R.M. Macrae, Tobacco Research Council assistant director and BATCo employee, recalled that at the March 8, 1967 meeting, representatives from the United Kingdom made the point that "the major section in the U.K. industry believes that nicotine content of cigarettes should not be greatly lowered if consumer acceptance is to be maintained." 301080659-0662 at 0661 (US 22896).

1018. In fact, "consumer acceptance" was tied to addiction, a word that company executives and directors continued to use internally to describe the necessity of nicotine to smokers. According to the report of the October 1967 BATCo (Group) Research and Development Conference in Montreal, one of the company's research "assumptions" was that, "[t]here is a minimum necessary level of nicotine. Smoking is a habit attributable to nicotine. The form of nicotine affects the rate of absorption by the smoker." And later in the conference report, the BATCo R&D department stated the following as research objectives:

> The development of low T.P.M. [total particulate matter, or tar], normal nicotine cigarettes should continue. In this connection, the use of filter additives . . . might be helpful since it might render the nicotine more available to the smoker.
>
> The development of a low T.P.M., low nicotine cigarette should be expanded. This raises the question of the level of nicotine required. . . .

100051950-1963 at 1952, 1957 (US 85279).

1019. The BATCo R&D Conference report also acknowledged that the department's general objectives included "insur[ing] the continuation of the industry and the prosperity of the company within the industry," and "sustaining and increasing the profits of the company." Thus, even the scientists realized and accepted the link between nicotine and the future of both the company and the industry. 100051950-1963 at 1955 (US 85279).

1020. The minutes of a BAT Group Research Conference held at Hilton Head, South Carolina, from September 24-30, 1968, recorded similar statements. The conference group, which included representatives of B&W as well, noted that:

> In view of its pre-eminent importance, the pharmacology of nicotine should continue to be kept under review and attention should be paid to the possible discovery of other substances possessing the desired features of brain stimulation and stress-relief without direct effects on the circulatory system. The possibility that nicotine and other substances together may exert effects larger than either separately (synergism) should be studied and if necessary the attention of the Marketing Departments should be drawn to these possibilities.

682633150-3156 at 3152 (US 54206).

1021. The recognition of nicotine's singular importance in smoking was the basis for an October 1969 BATCo report titled "Future Work on Nicotine and Compounds With Related

Pharmacology," in which J.G. Underwood detailed company efforts to search for compounds that would mimic the pharmacological effects sought by smokers with fewer toxic properties, and foresaw that questions might be raised about the health effects of nicotine. The introduction states:

> At the physiological level the major part of the satisfaction of smoking is derived from nicotine and the first section of this note is concerned with optimising nicotine usage, increasing the delivery of smoking mixtures deficient in nicotine, and attempting to anticipate some "health" problems that may arise with changes in current practices.
>
> At present the cigarette industry depends on nicotine as the principal pharmacological agent in confirming the smoking habit. This could be dangerous commercially, since it may well be that legal restrictions are imposed on the nicotine delivery of cigarettes if the medical evidence shows beyond reasonable doubt that the long-term effects of nicotine are harmful. The industry is far more vulnerable to restrictions on the use of nicotine, than attempts at restricting, say, carcinogens or "tar." Consequently, the second sections considers some possibilities of finding alternatives to nicotine that could supplement or replace nicotine in a cigarette.

680050592-0608 at 0593 (US 85280).

1022. In 1969, BATCo researcher D.J. Wood gave a presentation for company executives in which he described the company's pharmacological research focusing on nicotine. He stated that BATCo researchers believed that nicotine was responsible for the "satisfaction of smoking," and that future research was aimed at finding out more about how the human body absorbed nicotine. 322043204-3207 at 3207 (US 20592).

1023. BATCo's acknowledgment of nicotine and addiction continued into the 1970s. In a June 30, 1971 memorandum titled "Comments on Nicotine," BATCo scientist R.R. Johnson reported on a Research & Development meeting held to discuss the results of nicotine research

on “Project MAD HATTER" and "Project HIPPO." BATCo director Sir Charles Ellis led the meeting. According to Johnson:

> The purpose of the meeting was to discuss the results from Projects MAD HATTER and HIPPO, and to stimulate further discussion of the importance of nicotine to the industry. Sir Charles started the meeting by saying that he had first brought out the concept that we are in a nicotine rather than a tobacco industry and then set up the above projects to sell this concept to management.

2065128907-8909 at 8908 (US 85281) .

1024. In a November 9, 1972 report titled "Preparation and Properties of Nicotine Analogues," BAT Group scientists K.D. Kilburn and J.G. Underwood recommended, for commercial reasons, that work continue into finding nicotine analogs, or substitutes. The basis for this recommendation, the researchers stated, was that, "Should nicotine become less attractive to smokers, the future of the tobacco industry would become less secure." Specifically:

> It has been suggested that a considerable proportion of smokers depend on the pharmacological action of nicotine for their motivation to continue smoking. If this view is correct, the present scale of the tobacco industry is largely dependent on the intensity and nature of the pharmacological action of nicotine. A commercial threat would arise if either an alternative product became acceptable or the effect of nicotine was changed.

750009046-9098 at 9049 (US 88066).

1025. An undated BATCo document, probably from the 1970s from scientist D.G. Felton titled "Smoking and Health Research in the U.S.A.," summarized some internal industry positions on scientific research and nicotine. The report noted that American Tobacco Company's Scientific Director, Dr. H.R. Hanmer, stated that it was "important to keep up the nicotine content of the smoke, while reducing anything that ought to be reduced," that RJR's

scientific director Dr. Galloway stated that "a reasonable amount of nicotine was necessary in a cigarette," and that Liggett's position was that "people smoked because of the nicotine." 105407187-7190 (US 34738).

1026. In an undated document, S.J. Green, one of BATCo's top scientists in its Research & Development Department, provided advice to the corporate leadership as to the future direction the company should take with respect to smoking and disease, research, and even addiction. The presentation was delivered at the October 1972 BAT Group R&D Conference where B&W representatives were also in attendance. 680048899-8903 at 8903 (US 85284).

1027. In his presentation, Dr. Green stated that BATCo was aware that smokers compensated for lower nicotine products "by increasing the number of cigarettes smoked" and by "changing the way they smoked." He then discussed the "health conscious smokers who chose the low delivery cigarettes," frankly telling the BAT Group executives (including B&W) that:

> A suggestion is made both for the health conscious smoker and the smoker whose prime smoking requirement is physiological satisfaction. Surely many nicotine-dependent smokers are health conscious. . . .
>
> Smoking is fairly irrational like other drug dependencies. If there is a positive side to smoking, and I think there is, it is not easy for the smoker to articulate. He "votes with his feet" and continues with this irrational act.

110069983-9987 at 9985 (US 20269).

1028. BAT scientists published the results of a study titled "The Effect of Smoking Deprivation on Smoking Behaviour," written by D.E. Creighton, in a report dated September 11, 1975. Both BATCo and B&W had copies of the report in their files. In assessing the behavior of the subjects, the research assumed that smokers need nicotine, that smokers experience

withdrawal symptoms without it, and that smokers compensate to obtain the nicotine they need:

> It is probable that interference with an established behavioural pattern would cause different effects on different subjects according to their need for the stimulation of nicotine or suppression of the withdrawal symptoms that accompany a lack of nicotine. . . . If the subject is smoking for the pharmacological effects of nicotine he would be expected to take more smoke in a shorter time. He may do this by taking larger puffs, taking more puffs, reducing the interval between them or smoking more of the butt where the nicotine delivery is higher. He might also draw harder on the cigarette or for longer.

650014873-4901 at 4881 (US 53405).

In the discussion section of the report, the authors stated:

> These results may be interpreted on the basis that some subjects have a greater demand for nicotine than others. It is also clear that the dose of nicotine required per unit of time is very variable. Some subjects require a small intake of nicotine taken frequently . . . others require a large amount but infrequently. . . . These differences in nicotine demand and the pattern of nicotine intake may reflect metabolic differences between smokers.

650014873-4901 at 4885-86 (US 53405).

1029. BATCo, like the other cigarette company Defendants, undertook research in the 1970s and 1980s to manipulate or maintain nicotine delivery while reducing the tar in its cigarettes. This research was based on the corporate knowledge that nicotine delivery above some minimum level was an essential part of cigarette smoking for smokers. For example, the basis for studies carried out in 1973 to assess the use of additives to reduce tar but actually increase nicotine to smokers was stated, in a research report on additives' effect on smoke chemistry, as follows: "The increased importance being placed on the lowering of TPM [total particulate matter, or tar] and the controlling of nicotine delivery has made it necessary to

investigate the different methods available for producing these changes in smoke." 402390265-0282 at 0268 (US 85288). For a more in-depth discussion of this subject. See Section V(C), infra.

1030. The 1973 study also utilized "ADDITIVES FOR NICOTINE CONTROL," including nicotine tartrate, sodium bicarbonate, and diammonium hydrogen phosphate to increase the "extractable nicotine" in the smoke. The researchers found that certain combinations of additives successfully reduced tar while "maintaining the impact and physiological strength levels" of nicotine. 402390265-0282 at 0280 (US 85288).

1031. As another example, BATCo's W.B. Fordyce circulated a report called "The Addition of Nicotine to Tobacco Products," written by company scientist Terry Mitchell, to BATCo Directors under cover memo dated May 2, 1980. In his paper, Mitchell discusses three methods for intentionally increasing the nicotine content of cigarettes, including the use of specialized high nicotine tobaccos (such as N. rustica), direct addition of nicotine and nicotine extracts, and the chemical "augmentation of smoke nicotine." Mitchell noted that smoke nicotine could be augmented by improving the nicotine transfer to smoke and by increasing the alkalinity/pH of smoke. 110088143-8155 (US 34965).

1032. In 1975, BATCo Research Scientist A. Kay (Kinnard) Comer acknowledged that only those within the industry disputed the label addiction as applied to smoking and nicotine, and that the evidence showed the industry's denials were wrong. Comer stated that:

> In summary, it appears that most workers who are not directly concerned with the tobacco industry use the terms addiction or dependence rather than habituation and can be considered quite correct in doing so. If cigarette smoking is as addictive as the evidence suggests, it is not surprising that antismoking campaigns

> are so ineffective. . . .

105392361-2368 at 2366 (US 22038).

1033. BATCo's D.E. Creighton performed a "Restricted" written review of BAT's own "Group" research in January 1976, in order to evaluate the concept of compensation. The review found that compensation occurred -- for example, by taking larger puffs or inhaling the smoke deeper into the lungs -- when smokers of high-nicotine cigarettes smoked low-nicotine products and vice versa. Creighton found that, "On balance, it is concluded that many established smokers do compensate for changed delivery in an attempt to equalise nicotine delivery, when this is possible." 650008449-8480 at 8451 (US 76192).

1034. Creighton stated that compensation for reduced nicotine delivery was evidence that smokers smoked for nicotine, and evidence that regular smokers are "nicotine dependent":

> [T]he majority of smokers who actually buy cigarettes and smoke them regularly are directly or indirectly seeking the effects of the nicotine content of the smoke . . . . The majority of smokers who are smoking for the nicotine content of smoke may still be smoking for different effects of nicotine. They may seek the pharmacological stimulation of nicotine which has both peripheral and central stimulating effects or to allay the uncomfortable effects of not having nicotine in the system, which Russell describes as relief from or avoidance of withdrawal effects. Most smokers when deprived of nicotine for a period of time during the day feel an increase in stress, tension, restlessness and irritability. A cigarette quickly restores the equilibrium.
>
> A subject who does not suffer the mild withdrawal symptoms, when unable to smoke and only seeks the occasional stimulation of nicotine, or some other attribute of smoking, is less likely to compensate for changed nicotine delivery than a subject who is more nicotine dependent.

650008449-8480 at 8462-8464 (US 76192).

1035. Other sections of Creighton's 1976 report discussed an "estimation of self dosing with nicotine" and various factors that influence "the daily dose of nicotine taken by a nicotine dependent smoker." 650008449-8480 at 8465, 8468 (US 76192).

1036. In a memorandum dated March 29, 1976, BATCo scientist S.J. Green set forth his forecast for "The Product in the Early 1980s." In this document, Green addressed "the main threats to the smoking habit." One major threat to smoking was that lower nicotine products would lead to more smokers being able to quit: "Taking a long-term view, there is a danger in the current trend of lower and lower cigarette deliveries -- i.e. the smoker will be weaned away from the habit. . . . [W]e should be aware of the long-term dangers of following the crowd into ultra-low nicotine deliveries." 110069974-9982 at 9975 (US 20268).

1037. Green then evaluated "potential rivals," that is, "cigarettes in which nicotine has been replaced by an alternative pharmacological agent." In this context, he referred to smokers as "members of the nicotine-dependent majority." 110069974-9982 at 9975, 9977 (US 20268).

1038. In 1976, BATCo held a conference on smoking behavior. Its central theme was the pharmacological importance of nicotine on the central nervous system as the basis for smoking. In a conference report, Kay Comer wrote that tobacco is only used in ways that delivered unmetabolized nicotine to the brain:

> [C]igarette smokers who are forbidden to smoke, for instance in a lumber mill or down in a mine, will resort to chewing tobacco instead of smoking.
>
> The common factor in all the types of tobacco usage mentioned is nicotine, either absorbed through the lungs or the lining of the nose or mouth. Taken in these ways nicotine will quickly enter a direct route, in the blood, to the brain. Tobacco has never been used as a substance of ingestion. The probable reason for this is that when it

> is absorbed in the stomach or intestines, nicotine travels in the blood to the liver, where it is metabolised to cotinine before passing to the brain. It would therefore be surprising if nicotine, which is known to be pharmacologically active in the brain (unlike cotinine), and which is obtained in the ways most likely to enable it to reach the brain unchanged, were not involved in the reasons why people smoke.

650376684-6703 at 6694 (US 85289); 100430004-0005 (US 87115).

1039. BATCo also produced a November 24, 1977 report titled "A Note on Smoker Motivation and Dependency." In the introductory section of the report, the author stated that smoking can be characterized by "a dependency factor which is, in a restricted sense, independent of other motivational influences" that would keep a smoker smoking who desires to quit. The motivation to smoke even when one desires to quit "more closely resembles an urge or drive and might be described as an addictive behaviour beyond cognitive control and likely to be associated with pharmacological dependency." 102698343-8361 at 8343 (US 85290).

1040. BATCo held an "International Smoking Behaviour Conference" from November 27-30, 1977 at Chelwood, England. The company invited its own scientists and executives, along with representatives of its affiliate companies (B&W, Imperial Tobacco, Gallaher Limited, Souza Cruz, Rothmans, BAT-Germany and others), industry trade groups, and industry-funded researchers to exchange information. Dr. Green, from BATCo, delivered the introduction, followed by presentations to the conference over the next several days about the central nervous system effects of nicotine, nicotine’s impact on human attention span, the role of nicotine in maintaining smoking, and many other topics directly related to the central importance of nicotine to smoking behavior. 103505372-5399 (US 87116); 103505453-5513 (US 87117); 103518290-8401 (US 87118).

1041. A document by BATCo's P.L. Short dated February 22, 1978, titled "Product and Process Innovation," recognized that "the problem of addiction via nicotine [is] increasing." Two days later, his meeting notes recorded that, "Those seeking nicotine gratification where smoking is banned and the subsequent risk of purchasing tobacco by prescription or registration of addicts in the future, will lead to greater use of smokeless tobaccos . . . " He also wrote that there was a segment of smokers "wanting to quit but unable to, hooked onto cigarettes at present but seeking a cigarette/nicotine substitute." 100566925-6926 at 6926 (US 88765); 100566919-6924 (US 88766).

1042. In a June 27, 1978 document titled "Compensation for Changed Delivery," BATCo scientist D.E. Creighton stated that:

> Numerous experiments have been carried out in Hamburg, Montreal, and Southampton within the company as well as many other experiments by research workers in independent organizations, that show that generally smokers do change their smoking patterns in response to changes in the machine smoked deliveries of cigarettes. . . . In general, a majority of habitual smokers compensate for changed delivery, if they change to a lower delivery brand than their usual brand. If they choose lower delivery brand which has a higher tar to nicotine ratio than their usual brand (which is often the case with lower delivery products) the smokers will in fact increase the amounts of tar and gas phase that they take in, in order to take in the same amount of nicotine.

10553905-3915 at 3906, 3913 (US 76170).

1043. BATCo keenly appreciated the connection between addiction and profitability. In an August 28, 1979 memorandum titled "Key Areas -- Product Innovation Over Next 10 Years for Long-term Development," BATCo scientific director L.C.F. Blackman stated that nicotine dependence was the key to the company's future viability and profitability. In coming to this

conclusion, Dr. Blackman charted the stages of smoking from "starting the habit" (Stage 1) to "acknowledgment of pleasure" (Stage 2) to "dependence on the smoking habit" (Stage 3). He flatly stated that nicotine "initiates a dependence in the confirmed smoker" and that "the high profits additionally associated with the tobacco industry are directly related to the fact that the customer is dependent upon the product." 109872505-2508 at 2508 (US 21530).

1044. BATCo continued its search for nicotine substitutes into the 1970s. A November 30, 1978 BATCo report titled "Alkaloids That Have a Pharmacology Like Nicotine" reviewed all relevant research in depth and concluded that, "For smoking products, nicotine is the alkaloid of choice." The BATCo scientists reached this conclusion by comparing the known physiological qualities of nicotine to other alkaloids, including nicotine's effect on the central nervous system, respiration, blood pressure, and heart rate. 680009683-9700 at 9684 (US 53979).

1045. The Appendix to the 1978 BATCo report, titled "The Effects of Nicotine," described nicotine as "the most abundant and potent of the several alkaloids present in tobacco." The Appendix also contained the following section:

> <u>The Pharmacological Mechanisms of Nicotine</u>
>
> The mode of action through which nicotine achieves its effects on the body is very complex. The complexity arises from nicotine's simultaneous and varying degree of activity on the different nerve centers, organs and muscles of the body. Nicotine causes its effects not only by central and peripheral stimulation (i.e., at the brain and spinal cord, and nerve organ or nerve muscle junctions, respectively), but also by the stimulation of intermediate nerve ganglia. . . .
>
> While smokers describe the effects of nicotine as calming and relaxing, all the accumulated evidence indicates that it causes physiological excitation and stimulation. One theory that attempts to explain this paradox suggests that the smoker becomes

> accustomed to the stimulated condition that nicotine produces; he then uses this condition as the norm from which to judge his well being. If the condition is not maintained, discomfort and anxiety are felt.

680009683-9700 at 9697-9698 (US 53979).

1046. In an undated BATCo document, probably created in the 1970s, an executive summarized the "usable data" on smoking and nicotine addiction and connected addiction to marketing plans for BATCo and the industry. The memorandum concluded that smokers are dependent on the pharmacological effects of nicotine, that smokers develop tolerance to and dependency on nicotine, and that smokers deprived of nicotine experience withdrawal symptoms:

> SUMMARY and IMPLICATIONS to the INDUSTRY
>
> The rush of nicotine into the blood stream and nervous system is short-lived; therefore, reducing consumption would cause withdrawal and all of its unpleasant side effects so long as the smoker is restricted from smoking. Nicotine vacates the system in 30 minutes or so and at that time withdrawal starts. . . .
>
> The sensorimotor manipulation aspect of smoking is important to people but perhaps not as important as nicotine. . . . Cigarettes allow people to self-administer nicotine at a self-determined rate.

680096095-6110 at 6096 (US 53993).

Later in the paper, when describing children and adults who were "regular smokers," the author wrote:

> Only an exceptional 2% smoke occasionally and intermittently. Nearly all regular smokers are nicotine dependent. . . . As the novice acquires tolerance to the irritation of the smoke over a period of two or three years, he becomes conditioned to a high and regular intake of nicotine.

680096095-6110 at 6099, 6101 (US 53993).

1047. One section of the BATCo memorandum was subtitled "Physical Dependence," in which the author described the process by which a smoker becomes addicted:

> Physical dependence involves changes which are physiological. Firstly, this is shown by the smoker's tolerance to the effects of nicotine. This is due to changes at the synapses. The smoker also has an increased capacity to metabolise and excrete the drug, mainly in the liver. . . .
>
> Secondly, when the intake of nicotine is reduced or discontinued, the smoker may experience withdrawal symptoms, resulting from the lessening of overactivity at the synapses. . . . Thus, withdrawal of cigarettes from heavy smokers may reduce them to a subjectively distressed state, with symptoms of anxiety, depression, irritability, restlessness, intense craving as well as difficulty in concentration. More will be discussed about the addictive quality of nicotine in the following section. . . .
>
> Research has shown that stimulation of the medial forebrain bundle of the hypothalamus can pleasurably occupy an animal to the exclusion of all other basic activities, e.g., eating, drinking, sexual activities. It seems likely that nicotine and other dependence-producing drugs owe part of their effectiveness to influencing this centre. . . .
>
> The blood-brain barrier is no barrier to nicotine which reaches the brain within a minute of a person lighting up. Its effect is short lived. In twenty to thirty minutes after the smoker has finished his cigarette, most of the nicotine has left his brain for other organs -- stomach, liver and kidneys -- and this is just about the time that the heavily dependent smoker needs his next cigarette.

680096095-6110 at 6103-6104 (US 53993).

1048. The BATCo memorandum once again documented the company's knowledge and acceptance of "compensation," that is, the means employed by smokers of lower nicotine cigarettes to obtain higher doses of nicotine:

> If the nicotine level of cigarettes fails to completely achieve the desired mood change, that cigarette will be drawn on deeper, the

> smoke held longer, and consumption will rise. . . . Reductions in nicotine are therefore compensated for by consumers but the limit to which they can compensate for the diminished nicotine/diminished therapeutic efficacy is unknown. R&D is studying this subject at the present time.

680096095-6110 at 6095 (US 53993).

1049. Like Philip Morris and R.J. Reynolds, BATCo internally acknowledged and understood smoker compensation. BATCo knew from scientific studies using its own employees that smokers smoked for nicotine and compensated, or changed their smoking behavior, when smoking lower nicotine cigarettes. Two such studies carried out by BATCo in 1974 and 1978, respectively, using reduced nicotine cigarettes demonstrated these conclusions. D.E. Creighton's report of these studies stated that smokers compensated for reductions in nicotine yield by smoking more intensely:

> Comparison of the two data sets shows that the lower delivery cigarette has been smoked more intensively. . . . It can be reasonably inferred that the smokers in this panel received similar amounts of nicotine from both cigarettes. . . .
>
> The fact that smokers have changed their smoking patterns to take more smoke from a cigarette with lower nicotine delivery but similar TPM [total particulate matter, or tar] delivery adds support to the contention that nicotine is a major determinant of smoking behaviour. . . .

650008946-8960 at 8948, 8954 (US 85318).

1050. A March 1, 1979 "Restricted" BAT report written by Creighton summarized a collaborative scientific study between BATCo and British scientist M.A.H. Russell at the "Addiction Research Unit." The research project studied smoker compensation to obtain more nicotine, and utilized a standard low nicotine/low tar cigarette and a modified high nicotine/low

tar cigarette. BATCo and Russell determined that smokers compensate less when given high nicotine/low tar cigarettes, and compensate more when given low nicotine/low tar cigarettes. According to the report, while Dr. Russell's interest in the study was "from the health point of view," BATCo participated in the work "from a commercial point of view." 650010157-0193 at 0174, 0183 (US 85292).

1051. The BATCo/Russell study also reported that the high nicotine cigarettes produced "giddiness," a reflection of the intoxicating properties of nicotine:

> Some smokers, in fact, felt giddy while smoking the [high nicotine/ low tar] cigarette, presumably because they used the mouth sensations as cues to estimate their smoke intake. As a result of taking sufficient smoke to cause acceptable mouth sensations, they would receive nearly twice as much nicotine as usual, resulting in the feeling of giddiness.

650010157-0193 at 0179 (US 85292).

1052. In an April 11, 1980 BATCo document titled "What Three Radical Changes Might, Through the Agency of R & D, Take Place in this Industry by the End of the Century," a team of BATCo scientists (composed of Crellin, Ferris, Greig, and Milner) forecast what the industry would have to cope with in the near future. The scientists stated that:

> B.A.T. should learn to look at itself as a drug company rather than as a tobacco company. The mood affecting drug requirements of the population will in the future increase but the range of requirements will encompass tranquillisers e.g. valium, endorphin/enkephalin (brain opiates), marijuana, nicotine analogues, etc. At present, the taking of many of these drugs is either medically prescribed or regarded as deviant behaviour, but could be "socialized" like alcoholic drinking and tobacco smoking.

109884190-4191 at 4190 (US 21557).

1053. According to the April 1980 typed notes of BATCo scientist Dr. Lionel

Blackman, the company needed to address the anticipated issue that, "Although nicotine will be considered by some doctors to be less harmful than tar, there will be increasing recognition by some medical authorities that smoking is a nicotine dependent activity." 301140125-0128 at 0126 (US 85294).

1054. In a "Strictly Private and Confidential" document written in May 1980 by T.W. Kidd, a public relations officer at BATCo from 1948-1983, Kidd provided the following information to assist the company in formulating a new company position on smoking and health:

> Addiction/Habituation
>
> This is another aspect of the smoking and health issue which cannot be overlooked. Unlike dangerous sports and other high risk activities (except the drinking of alcohol) smoking is addictive/habituative in addition to being an additional risk and many smokers would like to give up the habit if they could. This does not mean that we must contribute to health education or to "quitting clinics" but it does mean we have to act even more responsibly than if the consumption of our products were purely involving a minority of consumers in an additional risk.

109881332-1335 at 1335 (US 34929). Despite Mr. Kidd's recommendations for a corporate position that reflected the addictiveness of cigarettes, no new company position was ever announced.

1055. A March 31, 1981 "Restricted" research report titled "Nicotine Studies: A Second Report, Estimation of Whole Body Nicotine Dose by Urinary Nicotine and Cotinine Measurement" documented BATCo's research into accurately measuring nicotine intake by rats forced to inhale cigarette smoke. The authors, BATCo scientists G. Read, I.G.M. Anderson, and R.E. Chapman, wrote that the studies were "particularly relevant to the development of an

understanding of an individual smoker's daily nicotine requirement and the relationship between nicotine dose and smoking behaviour under conditions of brand switching/delivery modification." 650030769-0802 at 0779-0780 (US 53428). The March 31, 1981 report built on an earlier BATCo scientific study into "nicotine dose" dated May 21, 1980, titled "Method for Nicotine and Cotinine in Blood and Urine," written by the same scientists. In this earlier study into methods to measure nicotine in humans, the authors stated that "the pharmacological response of smokers to nicotine is believed to be responsible for an individual's smoking behaviour, providing the motivation for and the degree of satisfaction required by the smoker." 650032386-2428 at 2389 (US 87119).

1056. Under cover letter dated April 7, 1982, BATCo's G. O. Brooks forwarded an internal nicotine study by Creighton titled "Human Smoking Behaviour" to researchers at B&W. In Creighton's report, he restated the "sine qua non" role of nicotine in smoking and discussed withdrawal and compensation:

> Nicotine is the most pharmacologically active constituent in tobacco smoke and is probably the most usual factor responsible for maintaining the smoking habit. . . .
>
> Nicotine has pharmacological effects both in the brain and other parts of the body. Some of these effects are due to nicotine itself whereas others are due to nicotine causing a release of other substances within the body such as adrenaline. . . .
>
> The smoker . . . who smokes to maintain a constant blood level of nicotine is most likely trying to avoid the unpleasant sensations that he feels when he is not smoking. Without a cigarette he will become nervous, irritable and likely to make mistakes in his work. Such a smoker is likely to compensate for changed delivery if given a cigarette with different standard machine smoked deliveries to his usual brand so that as far as possible he maintains a constant blood level of nicotine. . . .

> It is possible to consider nicotine as the component of cigarette smoke that controls the amount of smoke that a smoker takes from a cigarette.

660913609-3633 at 3616-3618 (US 22763).

1057. Brooks's April 7, 1982 memorandum and the attached report also show the in-depth knowledge that both BATCo and B&W had of compensation as well as their goal to maintain addiction by maintaining a minimum delivery or "dose" of nicotine in their products:

> The simple answer would seem to be to offer the smoker a product with comparatively high nicotine deliveries so that with a minimum of effort he could take the dose of nicotine suitable to his immediate needs. . . . If delivery levels are reduced too quickly or eventually to a level which is so low that the nicotine is below the threshold of pharmacological activity then it is possible that the smoking habit would be rejected by a large number of smokers.

660913609-3633 at 3619-3620 (US 22763).

1058. The paper attached to Brooks's 1982 letter resembled and borrowed from the 1978 paper by Dr. Creighton titled "Compensation for Changed Delivery." See Section V(B)(3)(c)(¶¶ 1042), supra, and Section V(E)(2)(b)(¶2215), infra. In this earlier paper, Dr. Creighton stated that the company's knowledge of compensation by smokers of low nicotine yield cigarettes came from research "carried out in Hamburg, Montreal, and Southampton within the company," research showing that "smokers do change their smoking patterns in response to changes in the machine smoked deliveries of cigarettes." 105553905-3915 at 3906 (US 34799).

1059. In a March 25, 1983 memorandum titled "Project Recommendations," which described the relationship of nicotine level to switching behavior, BATCo researcher Andrew J. Bellman stated that "nicotine is the addictive agent in cigarettes." 514110006-0009 at 0007 (US 21745).

1060. In a January 26, 1984 research paper, BATCo researcher Colin C. Greig stated that because nicotine "is the major or sole pharmacologically active agent in smoke, it must be presumed that this is the preferred method of absorption and thus why people inhale smoke." 650547777-7787 at 7786 (US 20950).

1061. A March 22, 1984 report titled "Receptors for Nicotine in the Central Nervous System," written by BATCo scientist W. W. Templeton, documented the company's research into the psychoactive effects of nicotine and specific sites (receptors) in the brain where nicotine binds within the central nervous system. The study "confirm[ed] the existence of specific binding sites for nicotine in the CNS" and speculated that the results "may help to explain the development of tolerance to nicotine." The Executive Summary described the research and its link to the design and manufacture of cigarettes:

> This report is the first in a series of studies designed to identify and characterize how nicotine derived from cigarette smoke can interact with the body, and in particular the active centres of the brain. This specific interaction is believed to form an essential element of a smoker's satisfaction. . . .
>
> The report describes in detail the development and application of techniques to identify and characterise regions within brain tissue where nicotine can bind and elicit a pharmacological response. . . .
>
> The findings will be used as appropriate in the process of developing lower delivery products with full smoking characteristics.

650000996-1034 at 0998, 1011, 1014 (US 53388).

1062. Later in the 1984 report, the author reviewed the evidence on smoking "motivation" and concluded:

> Taken together, the evidence suggests that self-administration of

> nicotine may be the primary motivation for smoking. While this may not be true for every smoker, each smoker (who inhales the smoke) absorbs a quantity of nicotine during each puff sufficient to have extensive physiological and pharmacological effects, regardless of the motivation for smoking. . . .
>
> Primarily, nicotine is taken for its effects on the CNS, the peripheral consequences of nicotine administration, such as increased heart rate and blood pressure, being unwanted side effects.

650000996-1034 at 1001-1002 (US 53388).

1063. In June 1984, BATCo held a three-day Nicotine Conference attended by representatives of BATCo and B&W. According to the conference agenda, one topic for discussion was "A Smoker's Requirement for Nicotine - A Smoking Behaviour and Marketplace View." The accompanying conference notes stated that

> Considerable indirect evidence has been accumulated that suggests inhaling cigarette smokers smoke for nicotine and presumably the pharmacological effects of nicotine.

512106427-6437 at 6428, 6433 (US 20846).

1064. Another topic at the BATCo Nicotine Conference was called "Product Modification for Maximal Nicotine Effects." Under this heading, the authors stated that in order to "maximise nicotine effects," the company must understand "what constitutes an adequate and suitably 'packaged' dose of nicotine to satisfy a smoker's 'requirements.'" 512106427-6437 at 6435 (US 20846).

1065. BATCo prepared a final report on the Nicotine Conference. It contained summaries of many of the presentations made by BATCo researchers and executives to conference attendees. These summaries revealed BATCo's intimate knowledge of smoker

regulation of nicotine (compensation), smokers' "threshold requirement" of nicotine, "product elasticity," "nicotine dose" measurements, "pharmacokinetics of nicotine," "the sensory and psychological effects of nicotine," central nervous system effects of nicotine, and "smoke manipulation involving pH modification" and other product design modifications. 101234971-5018 (US 21645).

1066. One month after its Nicotine Conference, BATCo held a conference on smoking behavior and marketing. In Session III of the July 1984 conference, again attended by B&W representatives, C. Ian Ayres, a BATCo Research Advisor, summarized information from the earlier nicotine conference, including the following:

> Many smokers appear to smoke to a constant intake of nicotine. As yet, however, we do not know whether most smokers are aiming to achieve a "satisfactory" average level of nicotine circulating in the body, or whether they are seeking an optimum peak nicotine level after each cigarette. . . .
>
> The presentation was concerned with summarising and outlining the central role of nicotine in the smoking process and our business generally. . . . The extent to which smokers smoke for nicotine was discussed and it was agreed that it is unlikely that all smokers smoke for nicotine. However, only products containing nicotine have widespread use. . . .

536000308-0507 at 0330-0332 (US 85298); 109869361-9369 (US 87120).

1067. Attendees at the July Conference were informed that, "[a]lthough intentions and attempts to quit are relatively high (30-40% of smokers) the actual success rate is relatively low and stable." 402426650-6677 at 6676 (US 87121).

1068. Nicotine was a major component of nearly every presentation and discussion. For example, BATCo Group Leader Graham Read delivered a presentation titled "Current Status and

Future Direction of Smoking Behaviour Research." In his presentation, Read observed the "strong indirect evidence of smokers smoking for nicotine" as representing a "cause and effect" relationship. Read stated that the significance of his observation was that "smoking maintenance" is accomplished through nicotine, and that "in its simplest sense puffing behaviour is the means of providing nicotine in a metered fashion." 536000000-0090 at 0045-0063 (US 22338).

1069. A BATCo report on the company's Research and Development conference in September 1984, prepared by BATCo Scientist/Director Dr. Lionel Blackman, emphasized the need for further research related to smoker behavior and nicotine. The report advised that BATCo needed to research whether smokers smoked for the "transient peak effects" of nicotine or instead sought "threshold base-line levels throughout the day." The report also recommended research into means of "influencing nicotine transfer from the product to the smoker -- and the commercial viability of such means." According to the R&D conference report, "Nicotine remains a top priority." 109872430-2447 at 2439, 2443 (US 23340).

1070. A September 1984 BATCo document titled "Research Conference, GR&DC Research Programme" stated some objectives of BATCo's in-house behavioral/nicotine research. For example, the memorandum summarized planned nicotine/pH modification experiments, research focusing on the "mechanisms of nicotine interaction with the central nervous system," and human studies to better determine "the minimum dose of smoke nicotine that can provide pharmacological satisfaction for the smoker." 109869520-9522 at 9521 (US 87122).

1071. All the evidence presented shows that BAT Group research was premised on the position that nicotine was the critical component of cigarettes that kept smokers smoking. In an

October 15, 1985 memorandum from German BAT scientist E. Kausch to B&W's Vice President of Research and Development, Kausch followed up on a recent "Oxford Conference" with the statement: "There is no daupt [sic] that nicotin is the compound which makes tobacco use to [sic] such a widespread habit. This means that nicotin research should be a central part of BAT's research efforts.[sic]" 510000642-0644 at 0643 (US 85300).

1072. A June 1988 internal BATCo report titled "The Significance of pH in Tobacco and Tobacco Smoke" summarized BATCo's in-depth knowledge with respect to manipulating smoke pH and increasing "free base" nicotine in order to increase the nicotine delivery to smokers in the mouth and lungs. 500104402-4424 (US 21492).

1073. A 1988 BATCo document titled "A Meeting of Scientific Research Group, Montreal, August 6th-8th 1988" reported on the results of a U.S. smoking behavioral study that "strongly point[ed] to nicotine as the basis of the smoking habit." The document also demonstrated the existence of compensation, reporting that "plasma nicotine levels were almost constant, regardless of measured nicotine delivery levels, as were the number of cigarettes smoked per day". 100993169-3173 at 3169 (US 34677).

1074. A January 15, 1991 BATCo document titled "BATCo Operating Group Five Year Plan 1991-1995" contained a section on "The Fundamental Research Centre." In this section, when discussing key research projects regarding "tar/nicotine ratio reduction," the plan stated that:

> Basic research will continue into products delivering adequate levels of nicotine with minimum levels of other components, focusing on: tobacco treatments leading to reduced tar formation; novel sheet materials capable of controlled release of nicotine/flavourants; and enhancement of the transfer of

> nicotine/flavourants of smoke.

201752783-2899 at 2838 (US 85452).

1075. In an undated 1992 marketing document titled "Structured Creativity Group," BATCo's Product Developer, Colin Greig, described cigarettes as a "'drug' administration system for public use" with "very very significant advantages over other drugs." Because "nicotine is the lowest dose 'common' drug available," it compared favorably to other "slower" drugs such as marijuana, amphetamines, and alcohol." Greig wrote that, "Within 10 seconds of starting to smoke, nicotine is available <u>in the brain</u>." The memorandum also notes BATCo's acceptance that smokers of low tar products "compensate," or modify their smoking behavior, in order to obtain more nicotine. 100503495-3506 at 3496, 3499 (US 76168) (emphasis in original).

1076. Greig described tobacco as "a fast, highly pharmacologically effective and cheap 'drug'" contained within a "relatively cheap and efficient delivery system." At the close of his memorandum, Greig observed that because cigarettes leave smokers unsatisfied and always craving more, "all we [BATCo] would want then is a larger bag to carry the money to the bank." 100503495-3506 at 3497, 3505 (US 76168).

1077. An undated BATCo memorandum written by D.E. Creighton, titled "Structured Creativity Group Presentation," listed the following as one of smokers' needs:

> High on the list of consumer needs is nicotine, which I believe to be the main motivator and sustainer of smoking behaviour. Without nicotine in sufficient quantity to satisfy the needs of the smoker, the smoker can (a) give up altogether, (b) cut back to a low purchase level, (c) keep switching brands.

102690336-0350 at 0340 (US 21681).

1078. In his memorandum, Creighton was careful to distinguish the need for nicotine

from the importance of flavor and quality to cigarette consumers. At the close, he noted that BATCo had "tried the low [nicotine] delivery product route with limited success. This might be because the nicotine in such products is below the pharmacological threshold of effectiveness." 102690336-0350 at 0345, 0350 (US 21681).

1079. BATCo conduct and/or funded voluminous internal studies on nicotine and its effect on the human body. The clear import of these studies, taken as a whole, was that BATCo knew that nicotine was essential to smoking cigarettes, essential to addiction, and therefore essential to its business of selling cigarettes. Many of these reports bear stamps indicating they were shipped to B&W. Such reports include: "Nicotine in Smoke and Human Physiological Response," dated March 26, 1970, 682638843-8864 (US 25454); "Relative Contributions of Nicotine and Carbon Monoxide to Human Physiological Response," dated November 15, 1971, 682638479-8516 (US 25451); "The Transfer of Nicotine From Smoke Into Blood Using a Perfused Canine Lung," dated February 28, 1967, 750003524-3551 (US 87125); "Subjective Evaluation of Select Flue-Cured Tip Grades," dated August 20, 1968, 750067063-7084 (US 87126); "The Absorption of Nicotine Via the Mouth: Studies Using Model Systems," dated May 9, 1965, 750004644-4702 (US 87127); "The Effect of Puff Volume on 'Extractable Nicotine' and the Retention of Nicotine in the Mouth," dated August 21, 1969, 750040142-0159 (US 87128); "Further Studies on the Effect of Nicotine on Human Physiological Response," dated June 5, 1973, 750009778-9808 (US 87129); "Acute Effect of Cigarette Smoke on Brain-Wave Alpha Rhythm - First Report," dated October 31, 1974, 750055087-5106 (US 87130); "Interaction of Smoke and the Smoker Part 3: The Effect of Cigarette Smoking on the Contingent Negative Variation," dated December 12, 1974, 750012293-2319 (US 87131); "Some 'Benefits' of

Smoking," dated January 26, 1977, 750016323-6339 (US 87132); "Further Work on 'Extractable' Nicotine," dated September 30, 1966, 83916527-6596 (US 55968); 650010113-0156 (US 53397); 566632813-3254 (US 87134); 110083654-3673 (US 87135).

**d. Brown & Williamson**

1080. Like the other cigarette company Defendants, B&W was also well aware of the addictive quality of smoking and nicotine. Despite the company's public denials, it has consistently admitted internally that smoking is an addiction, smokers need nicotine, and smokers suffer withdrawal when deprived of nicotine.

1081. Much of B&W's knowledge of nicotine and its addictive qualities originated with its parent company, BATCo, which, as has already been noted, regularly communicated its research results to B&W and other BAT Group affiliates. One of the earliest examples of the trans-Atlantic exchange of knowledge, was the forwarding, by Sir Charles Ellis of both BATCo's "Project HIPPO" results and the BATCo report titled "The Fate of Nicotine in the Body" to B&W's chief executives Bill Cutchins and Ed Finch under cover letter stamped "Received" on July 1, 1963. 689033419-3419 (US 87136).

1082. Shortly thereafter, B&W Executive Vice President and General Counsel Addison Yeaman commented in writing on the BATCo nicotine research carried out in England under the code names HIPPO I and HIPPO II, as already discussed. In a July 17, 1963 memorandum marked "Strictly Private and Confidential," Yeaman was persuaded by the findings of the research, in particular the researchers' conclusions on the "tranquillising" effects of nicotine. Most significantly, Yeaman also concluded that, “nicotine is addictive." He further wrote, as has been quoted many times, in many places: "We are, then, in the business of selling nicotine, an

addictive drug effective in the release of stress mechanisms." 689033412-3416 at 3415 (US 22034).

1083. B&W intentionally concealed Yeaman's conclusions, and the sophisticated nicotine research in the possession of both BATCo and B&W was not disclosed to the Surgeon General's Advisory Committee which was then in the process of writing the early drafts of the 1964 Surgeon General's Report. See Section V(A)(4), supra.

1084. On September 13, 1963, B&W scientist Robert B. Griffith wrote a letter to BATCo's John Kirwan responding to his questions about the importance of nicotine. Dr. Griffith wrote:

> [N]icotine is by far the most characteristic single constituent in tobacco and the known physiological effects are positively correlated with smoker response. . . . [W]e have a research program in progress to obtain, by genetic means, any level of nicotine desired.

102630333-0336 (US 23000).

1085. B&W participated in a Tobacco Chemists Conference in October 1964. According to the “CONFIDENTIAL” report of the conference, tobacco company scientists delivered a number of papers to conference attendees. One paper called “Do We Know What We Are Talking About?” was presented by W. S. Paige of the Imperial Tobacco Company. In his presentation, Paige described the “Physiological Strength or Potency” of tobacco, suggesting very early knowledge among tobacco industry scientists of nicotine's psychoactive effects, and the connection to "subconscious" smoker compensation:

> S. Physiological Strength or Potency
>
> This is the property of tobacco which makes your head swim, and

> makes you feel 'weak at the knees' after rapid smoking. It is a direct effect on the metabolism which does not come through the sense organs. It affects muscular co-ordination, pulse rate and peripheral circulation. . . . It is very difficult to assess S by these reactions because a subconscious mechanism usually controls the rate of smoking to keep these effects small.
>
> [Physiological Strength or Potency] is usually assessed by considering whether the cigarette was "satisfying." "The cigarette satisfied my need for a cigarette (even though it may have tasted horrible), I did not want to light another cigarette immediately afterwards."

650378968-9132 at 9036 (US 85303).

1086. Representatives of Philip Morris, RJR, B&W, BATCo, Lorillard, and Liggett attended and presented papers at the same October 1964 conference. 2012614167-4279 at 4176-4182 (US 85304).

1087. In August 1967, B&W commissioned a report on addiction titled "A Psychological Map of the Cigarette World." The stated purpose of the report was "to provide a resource of information regarding those consumer needs, habits, and attitudes which shape the current cigarette market" and to "serve as a platform for the development of responsive marketing and advertising strategies." B&W's recognition of the important link between the addictiveness of its products and the shaping of the cigarette market exhibits, as far back as the mid-1960s, an acute understanding of smoker guilt, anxiety, and inability to control what is clearly perceived to be harmful, unhealthy behavior. 680282619-2668 at 2620 (US 85305).

1088. This 1967 report commissioned by B&W summarized the responses of some 1,400 smokers and included the following commentary:

> Most smokers see themselves as addicts. . . . Many fear they'd "fall apart" if they quit. . . . Interpretively, the typical smoker feels

> guilty and anxious about smoking but impotent to control it. Psychologically, most smokers feel trapped.
>
> Speculatively, the decision to smoke is psychologically motivated. Once that decision is made, smoking frequency is physiologically determined, with the addiction becoming more severe as smokers grow older.
>
> People who smoke plain cigarettes are strongly addicted but deny anxiety about smoking. . . . [They] hate to run out of cigarettes. . . . [They] admit they'd be a nervous wreck if they ran out of cigarettes.

680282619-2668 at 2625, 2632, 2635 (US 85305) (emphasis in original).

1089. The 1967 report focused in part on smokers of B&W's Viceroy and Kool brands. With respect to the Viceroy market, the report found that "attractions to Viceroy are strong, but its appeals represent a threat to the addicted mass." With respect to Kool, the report concluded that "The Kool smoker feels he smokes too much -- but does not want to stop . . . is 'hooked' and more openly anxious than menthol smokers generally." 680282619-2668 at 2656, 2660 (US 85305).

1090. B&W has long known that nicotine is the most important component of cigarettes, that nicotine is the most important component of addiction, and that without nicotine, people would not smoke. For example, B&W's Director of Research and Development, I.W. Hughes, gave the following response, on March 13, 1970, to an article raising questions about a link between nicotine and coronary heart disease:

> This section of the paper is of some interest in that (a) there is the lead to take pressure off nicotine. This is very important to us; we can cope with reducing carbon monoxide, however difficult, but reduction or deletion of nicotine could be death to us.

680252107-2109 at 2108 (US 85306).

1091. A February 22, 1972 "Private and Confidential" report by B&W researcher J.E. Kennedy, distributed to executives, including General Counsel Yeaman, was titled "Beneficial Aspects of Smoking." Kennedy's paper reviewed a number of studies, including studies focusing on nicotine's effects on animal behavior. Kennedy described studies showing that monkeys developed a "strong preference for tobacco smoke" over air, and would "spend time smoking in preference to other available activities," and even learned to self-inject nicotine. 690008455-8462 (US 54320).

1092. B&W was also privy to internal nicotine reports from other cigarette manufacturers. In a 1973 "Confidential" marketing long-term planning memorandum, the company summarized BATCo and Philip Morris research, as well as some secondary studies. The memorandum acknowledged the drug-like effects of nicotine, and that "cigarettes allow people to self-administer nicotine and at a self-determined rate." The memorandum flatly stated that "Nearly all regular smokers are nicotine dependent" and described the smoking behavior of addicted smokers. 680096095-6110 at 6096, 6099, 6106 (US 53993).

1093. As the following excerpts demonstrate, the Memorandum directly addressed a number of the criteria used to determine addiction. The 1973 "Confidential" memorandum described tolerance to nicotine:

> As the novice [smoker] acquires tolerance to the irritation of the smoke over a period of two or three years, he becomes conditioned to a high and regular intake of nicotine. . . .
>
> Physical dependence involves changes which are physiological. Firstly, this is shown by the smoker's tolerance to the effects of nicotine. This is due to changes at the synapses. The smoker also has an increased capacity to metabolise and excrete the drug, mainly in the liver.

Id. at 6095, 6101, 6103.

1094. The memorandum also accepted and described the adverse withdrawal symptoms experienced by smokers who abstain:

> The rush of nicotine into the blood stream and nervous system is short-lived; therefore, reducing consumption would cause withdrawal and all of its unpleasant side effects so long as the smoker is restricted from smoking. Nicotine vacates the system in 30 minutes or so and at that time withdrawal starts.

Id. at 6096.

1095. The memorandum further described the concept of nicotine compensation by smokers to obtain the desired amount of nicotine:

> If the nicotine level of cigarettes fails to completely achieve the desired mood change, that cigarette will be drawn on deeper, the smoke held longer, and consumption will rise. . . . Reductions in nicotine are therefore compensated for by consumers but the limit to which they can compensate for the diminished nicotine/diminished therapeutic efficacy is unknown. R&D is studying this subject at the present time.

Id. at 6095.

1096. Finally, the memorandum summarized external research suggesting smokers are, in effect, drug addicted:

> [M]onkeys can be trained to inject themselves with nicotine for its own sake, just as they will inject other dependence-producing drugs, e.g., opiates, caffeine, amphetamine, cocaine . . . in the 1970s and 1980s In twenty to thirty minutes after the smoker has finished his cigarette, most of the nicotine has left his brain for other organs -- stomach, liver, and kidneys -- and this is just about the time that the heavily dependent smoker needs his next cigarette.

Id. at 6104.

1097. Minutes taken at a 1974 B&W/BATCo conference included the conclusion: "Whatever the characteristics of cigarettes as determined by smoking machines, the smoker adjusts his pattern to deliver his own nicotine requirements." 2502272091-2096 at 2092 (US 45990).

1098. In January 1974, B&W hired an advertising agency to study the market for its new cigarette Raleigh Extra Milds. The specific goal of the study was to "aid in the development of future marketing and creative planning for the new Raleigh cigarettes." The advertising strategy presented to B&W included the following broad observations:

> obviously the negative aspects of smoking outweigh the positives, so much so that many of the men and women interviewed had attempted to quit or at least considered quitting smoking. Apparently the Surgeon General's warnings have had a considerable impact upon smokers' attitudes toward their habit if not their behavior.
>
> However, as additional evidence of the addictive qualities of smoking, those who tried to quit, both male and female, admitted great difficulties in overcoming the psychological and/or the physiological urge or craving to smoke. Their presence in these discussions attests to their lack of success.
>
> The inability to quit or even attempt to quit often results in some degree of guilt and the admission to one's self of a "dependency" on cigarettes or a lack of willpower.

680289650-9743 at 9665 (US 85307).

1099. In August 1975, B&W commissioned a marketing report titled "New Product Ideas Developed for B&W." One exhibit to the study created an "Addiction Profile" to describe the relative intensity of smoking motivation. The study then divided smokers into three groups, "Mainstream" smokers, "Compromisers," and "Justifiers." "Compromisers" were defined as

those "heavily addicted" smokers who have made "many attempts to quit" and were "searching for a solution to their problem." "Justifiers," in contrast, referred to those who were "less addicted" and who were "quick to rationalize." 680287748-7895 at 7770, 7773 (US 85308).

1100. In a section of the report titled "Background Information on Cigarette Smoking Habits," the report emphasized a smoker's "need" for cigarettes:

> At times, a person smokes because it is something he depends on to keep going, in order to be able to function and to face the problems in daily life. This is when a cigarette is needed. . . . Let's take first the situations where a cigarette is needed. This is usually characterized by its being smoked quickly, where the smoker is hardly aware that he is smoking. It serves to relieve tension, frustration, irritation, or insecurity. It has a calming effect. Here the relaxation is of the type of a quick, crucial shot in the arm.

680287748-7895 at 7835 (US 85308).

1101. In 1977, a B&W advertising conference was held at the company headquarters in Louisville to review company research and discuss the company's advertising for a "Low Tar High Nicotine Cigarette." The conference report included the following under the heading "Goals/Wishes":

- MULTIPLY NICOTINE RUSH
- get across to consumer that what he likes (NICOTINE) is not what hurts (TAR)
- have FREE NICOTINE as opposed to BOUND
- show VALUE OF NICOTINE (lift, A.M. Starter)
- market an ADDICTIVE PRODUCT in an ETHICAL MANNER

777125397-5403 at 5398 (US 54625).

1102. In the years that followed, according to M. Lance Reynolds, former Director of Product Development and Director of Research, B&W "did a lot of work on trying to develop a quote, low-tar, normal nicotine, closed quote, cigarette." Dr. Reynolds stated that from the beginning of his career at B&W in 1968, the company and other BAT Group member companies had "projects to try and increase nicotine delivery with respect to tar, for many years." Reynolds PD, Minnesota, 9/30/97, 137:10-137:15; 777125397-5403 at 5398 (US 54625).

1103. The importance of nicotine was also emphasized in the B&W Research and Development Department. In a November 28, 1977 memorandum by researcher G. E. Stungis titled "Long-Term Product Development Strategy," one of the overarching stated objectives was that "products must provide the appropriate levels of nicotine. . . ." 501011512-1515 at 1513 (US 85309) (emphasis in original). Moreover, a significant part of the overall B&W strategy was the ability to:

> Recognize that nicotine is a vital component to overall smoker satisfaction. Methods to optimize the mainstream smoke nicotine delivery with respect to pharmacological effects will be explored/developed.

Id. at 1513.

1104. An August 24, 1978 B&W memorandum to M. J. McQue from Assistant Brand Manager H. David Steele titled "Future Consumer Reaction to Nicotine" stated: "Very few consumers are aware of the effects of nicotine, i.e., its addictive nature and that nicotine is a poison." 665043966-3966 (US 21485); 776078962-8962 (US 87137).

> Is there not some way open now to use the knowledge we have gained in this area of tobacco and smoke research to give B&W a competitive advantage over its competition? It appears that we have sufficient expertise available to "build" a lowered mg tar

> cigarette which will deliver as much "free nicotine" as a Marlboro, Winston, or Kent without increasing the total nicotine delivery above that of a "Light" product.

654005805-5807 at 5806 (US 85447).

1105. B&W scientist Tilford Riehl, who later became Vice President of Research and Development, received Gregory's "file note" and commented on an alternative to Gregory's proposal to increase "free" nicotine to boost "physiological satisfaction." While accepting Gregory's data and concept, Riehl proposed maximizing the effects of nicotine on smokers in a different way. Riehl wrote in the margin:

> Several of us have proposed an alternative (almost opposite) approach -- design a low tar cig with high <u>total</u> nicotine/low to moderate <u>% free</u> nic. Theory: provide cig with "appropriate" level of sensory satisfaction/higher than usual "pharmacological" satisfaction. (emphasis in original)

510000667-0670 (US 51496).

1106. B&W was given a November 1995 document prepared by Shook, Hardy & Bacon compiling and quoting from company materials that admitted nicotine manipulation by increasing "free" or "bioavailable" nicotine delivered by cigarettes. The report commented on the two 1980 documents written by Gregory and Riehl, documents that supported accusations by the FDA that B&W (and the other cigarette manufacturers) intentionally made and marketed cigarettes with nicotine effects greater than the FTC machine-measured yields:

> Gregory appears to be urging that B&W engage in a manufacturing and marketing practice of which the FDA accuses the company -- that accusation being that the company designs, manufactures and markets cigarettes with a pharmacological impact which is greater than FTC yields imply. Thus, Gregory's comments are of interest in the regulatory and litigation context.

689201723-1770 at 1753-1754 (US 31049).

1107. With respect to Riehl's written comments on Gregory's memorandum urging a low tar product with high total nicotine with moderate "free" nicotine, the Shook, Hardy & Bacon report stated that: "[T]his marginalia comment, of course, raises an issue of the motivations of the company in designing cigarettes to provide 'pharmacological satisfaction' to smokers." Id. at 1754.

1108. In February 1980, BATUS, Inc. (B&W's holding company, also located in Louisville, Kentucky) commissioned a detailed marketing plan for a "less hazardous cigarette" tentatively named "Limit." The proposal reflected the company's belief that smoking was both hazardous and addictive. The new cigarette would address the problem of addiction by offering "higher nicotine content to satisfy smokers' needs with fewer cigarettes . . . thus less potential harm." The report proposed advertising to physicians that, "Recent studies show that even under optimal conditions, it is unlikely you will persuade more than 5% of smokers to quit. So for the other 95%, do the next best thing. Switch them to new LIMIT." 501025519-5609 at 5564-65 (US 85310).

1109. The background research underlying the 1980 BATUS marketing proposal found that physicians had a "little or no success in getting patients to stop smoking cigarettes" and even suggested that providing the smoker with a less harmful cigarette product is equivalent to providing a heroin addict methadone. The less harmful cigarette, like methadone, was referred to as the "lesser evil," a "compromise" for the smoker who cannot quit the addiction. The writers asked rhetorically, "Why won't we help a cigarette addict get his 'fix' in the least damaging way possible?" It was proposed that the "Limit" product would be made available only through

pharmacies and would be introduced via physicians "in the same way that a new drug is presented." Id. at 5544-45, 5573.

1110. The 1980 BATUS proposal specifically recognized and emphasized the smoker's "physical need," "withdrawal" effects, and the high rates of recidivism. A sample promotion letter to physicians instructed that, "Low nicotine cigarettes are not a viable compromise. Studies have shown . . . that when patients switch to low nicotine brands, they usually increase the number of cigarettes they smoke daily. . . . Finally there is an alternative . . . for those patients whose sincere and dedicated efforts to stop have ended, again and again, in frustration, self-deprecation, and recidivism[.]" Id. at 5560-5561.

1111. A January 1982 B&W market analysis of smokers of its Belair brand reported in the section titled "Smoking Behavior and Attitudes" that: "Overall, the evidence shows that Belair smokers are extremely addicted to smoking and they know it." Belair also scored very high in factors indicative of dependency and "[a]ddiction." In fact, 94% of Belair smokers surveyed agreed with the statement, "I get a real urge for a cigarette when I haven't smoked for a while." (emphasis in original) 514107196-7249 at 7225, 7228 (US 85311).

1112. In a similar January 1982 B&W market analysis for its Viceroy brand of cigarettes, the company was told that, "Smokers of brands in Viceroy's competitive set are more addicted to smoking than smokers in general." 514107251-7302 at 7281 (US 85312).

1113. Later, in 1982, B&W carried out a “Smoker Personality Study” that segmented the cigarette market in terms of the level of addiction of the smokers. The stated purpose of the study was to provide the company “new insights helpful in the development and positioning of new and/or established brands.” With respect to the market segments, smokers who fit into

Segment IV were described as “somewhat addicted” and smokers in Segment VI were described as “addicted to smoking and often wished they never started.” Smokers in Segment VIII, however, were described as “heavily addicted to smoking. To run out of cigarettes would be a real problem for them . . . from the moment they wake up they smoke.” 514107303-7417 at 7336, 7350, 7364 (US 85313).

1114. B&W Group Product Director A.J. Mellman wrote a project memorandum on March 25, 1983, to other industry executives, including Senior Vice President for Marketing R.A. Blott, stating explicitly that nicotine is "addicting." The memorandum proposed several project ideas for the company, including a low tar cigarette with free nicotine added to the filter, based on the underlying premise that:

> Nicotine is the addicting agent in cigarettes. It, therefore, seems reasonable that when people switch brands, if they have a certain smoking pattern (i.e. number of sticks/day), they will switch to a brand at the same nicotine level.
>
> I am currently examining all brands by nicotine level and by nicotine/tar ratio levels, comparing those correlations to switching patterns.

514110006-0009 at 0007 (US 21745) .

1115. According to the record of a January 4 and 5, 1988 meeting in New York, B&W scientists Tilford Riehl and Lance Reynolds met with scientists from BATCo's other affiliates to discuss the progress of internal company nicotine research code-named "Project GREENDOT" and "Project AIRBUS," and to chart the course of the research for the 1990s. "Project AIRBUS" sought to develop a device similar to a non-combustible nicotine delivery product manufactured by RJR. "Project GREENDOT" sought "to produce a highly modified cigarette which maintains

the delivery of nicotine to the smoker whilst reducing the delivery of tar." The goal of "GREENDOT" was to modify a 10mg tar / 0.8 mg nicotine cigarette to deliver 1mg tar / 0.8 mg nicotine. 620208779-8784 at 8782-8783 (US 85317).

1116. BATCo regularly forwarded its nicotine research reports to the B&W Research and Development Department and the company library for use by the company and its employees. The critical importance of nicotine to the companies is evident in the titles and content of these reports. See, e.g., "Preparation and Properties of Nicotine Analogues - Part II," October 11, 1973, 657006301-6327 (US 53532); "Alpha Waves and Smoking: The Effect of Cigarette Smoking on the Alpha Density of Subjects," December 6, 1974, 657007342-7416 (US 53535); "The Effect of Smoking Deprivation on Smoking Behaviour," September 11, 1975, 650014873-4901 (US 53405); "Compensation for Changed Delivery," January 30, 1976, 650008449-8480 (US 76192); Dr. M.A.H. Russell's "Safer Cigarette" Study Report No. RD. 1652 (Restricted), March 1, 1979, 650010157-0193 (US 85292); "Preparation and Properties of Nicotine Analogues - Part III," June 20, 1979, 657006435-6487 (US 53534); "A Comparison of Smoking Surveys Separated by Four Years," June 28, 1979, 650008946-8960 (US 85318); "Method for Nicotine and Cotinine in Blood and Urine," May 21, 1980, 6650032386-2428 (US 53430); "Nicotine Studies: A Second Report, Estimation of Whole Body Nicotine Dose by Urinary Nicotine and Cotinine Measurements," March 31, 1981, 650030769-0802 (US 53428) ; "Receptors for Nicotine in the Central Nervous System," March 22, 1984, 650000996-1034 (US 53388); "The Functional Significance of Smoking in Everyday Life," April 24, 1984, 650000563-0740 (US 85393).

1117. B&W's law firm, Shook, Hardy & Bacon, prepared a document titled "B&W --

Addiction Notebook" for the company. The Addiction Notebook identifies numerous company documents (both B&W documents and documents sent to B&W by BATCo) admitting that (1) smoking is addictive, (2) nicotine is the primary addictive drug responsible for making smoking addictive, and (3) BATCo and B&W conducted and funded research over decades into the physiological and pharmacological properties of nicotine as a drug, as an essential element of smoking, and as a commercial element necessary to the profitability of the cigarette industry. 689103834-4108 at 3980-4078 (US 75988).

**e. Lorillard**

1118. Many internal documents show that Lorillard also has also been aware for decades of nicotine's addictive properties and the importance of nicotine to cigarette smokers.

1119. In an August 1964 national survey titled "A Market Target -- Buying Incentive Study of Cigarette Market," Lorillard found that 66% of qualified respondents gave habit/addiction as a reason for continuing to smoke. 03492841-3067 at 2884 (US 21432).

1120. In an August 7, 1964 memorandum regarding "Potassium Carbonate," H.D. Anderson told Lorillard's legal counsel that "[t]here seems no doubt that the 'kick' of a cigarette is due to the concentration of nicotine in the blood-stream which . . . is a product of the quantity of nicotine in the smoke and the speed of transfer of that nicotine from the smoke to the blood-stream." 100059066-9067 at 9067 (US 20102).

1121. Like the other cigarette manufacturer Defendants in the 1970s and 1980s, Lorillard knew that the issue was not only nicotine, but the amount of "free" nicotine actually delivered to smokers. In a February 8, 1973 report to research department executives, Lorillard scientist A. M. Ihrig concluded that nicotine in alkaline smoke (high pH) is absorbed in the

mouth and lungs far more rapidly than nicotine in low pH smoke, and that this phenomenon was due to the fact that "free," or readily absorbable, nicotine increased dramatically with pH. According to Ihrig, "a change in pH from 5.7 to 8.0 results in an increase of free nicotine from 0.69% to 58.3%." 00776238-6250 at 6239 (US 21477).

1122. Ihrig also noted the importance of "free" nicotine to the company's financial success: "Furthermore, the cigarette brands which are enjoying the largest sales increase generally have smoke pHs in the 6.5-7.0 range." He later adds that, "The smoke pH for Kool and Marlboro are 7.12 and 6.98, respectively, confirming the relationship between high smoke pH and cigarette sales increase." 00776238-6250 at 6239, 6245 (US 21477).

1123. Alexander Spears, Lorillard's Vice President of Research and later Lorillard Chairman and CEO, wrote a paper on the "elements of product acceptance" dated November 13, 1973. In his paper, Dr. Spears stated that one of the main elements of cigarette acceptance was "Physiological, being comprised largely of the nicotine-induced stimulation and thought coordination effects." Dr. Spears then stated that "it would be useful to have a wider range of control over nicotine than now exists," and that "[i]t is our present intent to develop low nicotine brands, with the maximum physiological impact, within the next year." 80634635-4642 (US 21063).

1124. Lorillard knew that nicotine was distinct from and not essential to the taste of a cigarette. In a March 2, 1976 presentation, the Will Graham Company advised Lorillard that "the taste of tobacco may be one of the least significant reasons why a person smokes," adding that, "it certainly ranks well below the impact of nicotine" for smokers. 01771073-1207 at 1079 (US 20052).

1125. A 1976 Lorillard internal review of nicotine scientific literature by H.S. Tong reported the following with respect to smoker compensation:

> A review has been made of the literature on the pharmacology of smoke-dose nicotine with the goal of discovering some indications of threshold dose and optimum doses of nicotine in the average cigarette smokers. . . . It seems that, within limits, smokers can and do control their nicotine intake from smoke by varying their smoking techniques. Nicotine has numerous sites of action and the response is an algebraic sum of its actions. . . . It seems that smokers smoke for both calming and stimulant effects. In a subjective study, test subjects reported that they found cigarettes of 0.8 mg to be acceptable.
>
> Despite the lack of definitive knowledge, it seems probable that smokers choose cigarette smoking for sensual, psychological, social, cultural, and pharmacological effects. The pharmacological effects are most likely due to the action of nicotine since the presence of a variety of other chemical components in the smoke in all probability is below their threshold level. . . . It is well known that the pharmacologic effects of nicotine at various sites are dependent on the dose, the dose schedule, and duration of exposure. Smoke dose nicotine has a stimulant action. It stimulates ganglia, and, therefore, it activates both the sympathetic and parasympathetic nervous systems simultaneously, the ultimate effects are the algebraic sum of its actions. Research in drug addiction indicates that the CNS [central nervous system] is the prime site of drug action. In order to understand the precise action of nicotine in the smoke habit, the CNS should be the logical site for study. . . .
>
> The purpose of this review is to determine if there were data which would indicate a threshold dose and an optimum satisfaction dose of nicotine for the majority of smokers.

83250863-0873 at 0863-0865 (US 55673).

1126. In a June 16, 1976 Lorillard memorandum titled "Progress Report on Nicotine Augmentation Project," H. J. Minnemeyer, the lead researcher on the company's nicotine augmentation programs, updated Spears on the progress of efforts to solve "the problem of

delivering more nicotine in the smoke of low tar cigarettes." The memorandum described the various research projects being conducted by Defendants as well as the medical and scientific research articles that had been published on the subject. 95539652-9655 (US 56825).

1127. A July 16, 1976 Lorillard research proposal memorandum to H.J. Minnemeyer from M. S. Ireland, titled "Research Proposal -- Development of Assay for Free Nicotine," again acknowledged the scientific consensus that nicotine was the source of the addiction to smoking:

> Cigarette sales are made for one reason. The customer is satisfied with the product either from the taste or the physiological satisfaction derived from the smoke. The consensus of opinion derived from a review of the literature on the subjects indicates that the most probable reason for the addictive properties of the smoke is the nicotine. Indications are that the smoker adjusts his smoking habits to satisfy the desire of nicotine either by frequent or large puffs on the cigarette, or smoking a large number of cigarettes. . . . [I]t is generally agreed at this time that a “small” amount of free nicotine is more desirable than a “large” amount of bound nicotine.

82396938-6939 at 6938 (US 22012).

1128. In the mid-1970s, Lorillard embarked on another project called the "Lowered Nicotine Project." According to a November 9, 1976 memorandum from company Vice President for Marketing R.E. Smith to the research department, the project was abandoned. However, the memorandum disclosed that, despite Lorillard's contrary public declarations, the company was well aware of the importance of nicotine in sustaining smoking:

> After discussing the 50% Lower Nicotine Project with Dr. Spears, I agree that we should discontinue work. We all understand that this concept has considerable consumer trial appeal; as quantified by the NPSS concept study. However, it is our judgment that a cigarette with substantially lowered nicotine could not deliver the smoking satisfaction to sustain consumer purchase.

01244504-4504 (US 20042).

1129. Lorillard knew that nicotine shared attributes of opiates, and sought to use this knowledge to its advantage. A March 16, 1978 memorandum by Lorillard scientist R.S. Marmor summarized a lecture given at Lorillard by industry-funded scientist Leo Abood titled "In Search of a Site and Mechanism for Nicotine's Action on the Brain." Marmor reported that:

> Prof. Abood's lecture here on "In Search of a Site and Mechanism for Nicotine's Action on the Brain" was well attended and well received. . . . Theorizing that nicotine's activity is due to an accidental mimicry of some normally present but as yet unknown brain peptide (analogous entirely to the recent opiate-enkephalin research findings), it might be possible to determine the structure of this peptide from information about the receptor site. In any case, information we gain on the mechanism of nicotine activity may be useful in determining how to adjust physiological impact in our cigarettes. We intend to support Prof. Abood by supplying samples and performing some synthetic and computer work.

00110371-0371 (US 34404).

1130. In a February 13, 1980 Lorillard memorandum stamped "SECRET," marketing vice president Smith described the goal of the ongoing Lorillard nicotine research project called the "RT Information Task Force." The memorandum provided Lorillard executives, including Dr. Spears, details of the secret project:

> Goal -- determine the minimum level of nicotine that will allow continued smoking.
>
> We hypothesize that below some very low nicotine level, diminished physiological satisfaction cannot be compensated for by psychological satisfaction. At this point smokers will quit, or return to higher T&N [tar and nicotine] brands.

01394380-4381 at 4380 (US 21543).

1131. Senior Lorillard researcher S. T. (Tom) Jones prepared a lengthy "confidential" report dated July 30, 1980, for the research leadership in Greensboro titled "Five-Year Plan

Preparation," in which he reviewed current literature on the "psychology of smoking." Jones wrote in a section presenting "A Review of Behavioral and Psychopharmacological Factors in Smoking" that, "Undoubtedly, nicotine serves a primary role in cigarette smoking." He also noted that, "A real problem in this whole area is the diversity of terms employed to say essentially the same thing." He later stated that:

> Considerable research in both the relative importance and mechanistic pathway of nicotine have [sic] been conducted. Although the role of nicotine is not completely understood, it is obviously one of the major factors associated with tobacco usage. Consumption of nicotine, administered either orally, intravenously, or via smoking elicits numerous responses including increased pulse rate, variations in skin temperature, and changes in brain wave patterns. Hutchinson and Emely take the position that nicotine is a powerful chemical reinforcer which reduces stressful and unpleasant stimulation.

01105000-5021 at 5001, 5002, 5009 (US 20030).

1132. Lorillard scientists also knew and accepted the phenomenon of nicotine compensation. Jones concluded in his memorandum that smokers of low tar products compensated ("titrated") to achieve a greater "nicotine dose":

> The evidence to date clearly indicates that smokers titrate or regulate their intake of nicotine, e.g. smokers of cigarettes which deliver large amounts of nicotine will adjust -- when given low nicotine cigarettes -- their smoking to get a larger nicotine dose than the machine determined values indicate. Also, smokers regulate their nicotine intake over time when smoking their regular brand.

Id. at 5010.

1133. Finally, Jones summarized research findings that "withdrawal is an identifiable syndrome" characterized by "anxiety and irritability," "an inability to concentrate and an intense

craving for tobacco." Id. at 5013.

### f. American Tobacco Company

1134. American has known since the 1940s that nicotine was essential to its products and was responsible for the physiological responses to smoking. An April 1940 document written by H. R. Hanmer, American's Director of Research, was titled "Memorandum on the Nicotine Content of Lucky Strike and Other Leading Brands of Cigarettes." The document contained a section called "Importance of Nicotine in Tobacco and Tobacco Products." Hanmer observed that the following "facts" were "long common knowledge" at the company:

> The presence of nicotine as a universal constituent of tobacco leaf differentiates it from other plant material. Nicotine contributes to the gratification of smoking. Tobacco substitutes, devoid of nicotine, have not been accepted. . . .
>
> That any physiological response to the constituents of smoke is due to nicotine is generally accepted and has recently been confirmed. The malaise after over-smoking is due to an excess of nicotine beyond one's individual tolerance. The pleasure, euphoria, or pacification from smoking are due to the sedative action of nicotine.
>
> With such facts long common knowledge to the Research Staff, the incorporation of nicotine control into the selection of tobaccos was a logical development.

ATX300006425-6468V at 6428 (US 85324).

1135. These "facts" and the company's ability to control nicotine were important to the development and maintenance of American's most popular brand at the time, Lucky Strike. Hanmer wrote in the same memorandum that its success was the result of the company's "nicotine control policy":

> A recognition of the facts presented above led to the institution of a

> method of scientific control of tobacco purchased by the Company. . . .
>
> That the favorable position of LUCKY STRIKE in comparison with other leading brands is not fortuitous but the result of a comprehensive nicotine control policy is demonstrated by the material exhibited in this memorandum.

Id. at 6440.

1136. Between 1940 and 1970, American sponsored 111 studies on the biological effects of cigarettes, with ninety-three, or over 80%, related to the effects of nicotine on the body. "Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents," 1996 FDA Jurisdictional Determination, HHA 0680950-1649 (US 33031); VXA1242326-3211 (US 64323).

1137. In a June 19, 1963 letter, American's Assistant to the President (and later company president) Robert K. Heimann labeled nicotine as "the characteristic and essential element in tobacco and tobacco smoke." Heimann asserted that the "reduction of nicotine to very low levels results in an unsatisfactory smoke." MNAT00787182-7182 (US 85325); ATC2471666-1666 (US 86691).

**g. CTR**

1138. Nicotine research funded by CTR also shows "that the cigarette manufacturers have acted like traditional pharmaceutical companies," studying the pharmacokinetics (absorption, metabolism, and excretion) of nicotine, the pharmacodynamics (effects on body chemistry) of nicotine, and the clinical effectiveness (whether drug is effective in producing the desired effects) of nicotine. VX1242326-3211 at 2806-2087 (US 64323).

1139. On November 22, 1977, CTR Associate Research Director Donald H. Ford stated

the following in a proposal for further CTR-funded nicotine research:

> [I]t now seems evident that nicotine, like narcotics, influences the CNS in multiple ways involving effects related to most known neurotransmitters. Further, the dependence which develops to tobacco in humans (and withdrawal symptoms during the cessation of smoking) and the degree of tolerance to nicotine which occurs in certain animal paradigms strongly suggest that nicotine is a habituating agent.

1000041912-1918 at 1912 (US 20073).

1140. Ford presented his nicotine observations and proposed research at the November 1977 CTR meeting. His proposed avenues of research related to "Receptors and sites of nicotine action," neurochemical studies, the effects of nicotine on fetal development, neuroendocrinology, and behavioral responses to nicotine. 1000036584-6590 (US 21417); 01113272-3272 (US 85329); 01113280-3284 (US 85330).

1141. This November 1977 CTR presentation by Ford drew the concern of Philip Morris's Tom Osdene, who later wrote to Bob Seligman that the nicotine "work being taken by CTR is totally detrimental to our position and undermines the public posture we have taken to outsiders." 2022246952-6952 (US 36865).

1142. The November 1977 CTR meeting was attended by lawyers and executives from all the member cigarette manufacturers, along with several outside counsel (Don Hoel, Janet Brown, and Ed Jacob). According to notes of the meeting taken by Philip Morris's Tom Osdene, Dr. Ford explained his nicotine research in detail. This presentation was introduced by CTR scientific director Dr. Gardner, who told the attendees that, "Opiates and nicotine may be similar in actions," and that there was a "relationship between nicotine and opiates." The notes of attendees indicate that no one questioned Dr. Ford's premise or Dr. Gardner's introductory

remarks. 1000036584-6590 at 6584 (US 21417); 01113280-3284 at 3280 (US 85330).

1143. Thereafter, as stated in the May 10, 1978 notes of the CTR Industry Technical Committee Chairman Preston Leake (also Scientific Director of American Tobacco) to American Tobacco general counsel Arnold Henson, the proposed nicotine work was “ruled out” by outside counsel Ed Jacob. Jacob claimed that the nicotine work had antitrust implications because it might be subject to “misinterpretation as product development.” 955017148-7154 at 7149-7150 (US 87142).

1144. A June 20, 1984 memorandum, written by Shook, Hardy & Bacon attorney Wendell L. Stone, summarizes the significance of CTR-funded nicotine research for industry clients. In his memorandum, Stone conceded that:

> Of the three areas pertinent to Cipollone (lung cancer, emphysema, and addiction) the abstracts and CTR commentary regarding addiction are the most consistently adverse. Through the years, CTR has funded psychopharmacological and neuropharmacological studies which emphasize and leave clear the points that CTR views nicotine as a "psychoactive" or "psychotropic" drug (terms which CTR has used), and that the research approach most appropriate to studying smoking behavior involves the pharmacology of nicotine. Among the undesirable research claims which appear in abstracts which acknowledge CTR support: the identification of specific central nervous system structures (nicotine receptors) at which nicotine acts; effects of nicotine on a variety of different purported neurotransmitters involved in learning, memory, etc.; various behavioral effects of nicotine from which can be inferred central nervous system effects, some of which might be used to support assertions regarding "tolerance" and "withdrawal." [Cipollone v. Liggett Group, 505 U.S. 504 (1992), was one of the first tobacco lawsuits in which the industry was assessed damages. It was particularly significant to the industry because it involved the unprecedented use of thousands of internal industry documents.]

515709297-9340 at 9298 (US 20866).

1145. The evidence overwhelmingly shows that Defendants have for decades internally recognized that smoking is addictive and that nicotine is the key to that addiction.

### 4. Defendants Publicly Denied that Nicotine Is Addictive and Continue to Do So

1146. Despite the extensive and detailed knowledge possessed by Defendants for decades about the addictive qualities of nicotine and smoking, Defendants have publicly made false and misleading denials of the addictiveness of smoking, as well as nicotine's role in causing that addiction, and have suppressed the research results and data they produced and possessed contradicting such denials.

1147. As acknowledged by industry counsel Covington & Burling, in a once-confidential May 1988 summary, "Tobacco industry statements deal only sparsely with the issue of addiction. To the extent such statements exist they generally deny outright any addictive effect." BWX0007189-7297 at 7200 (US 36237).

1148. Defendants' statements denying addiction, as described in the May 1988 Covington & Burling memorandum, as well as the many other similar denials of smoking and nicotine addiction set forth, infra., were used to convey four important themes to the public:

1. Smoking cigarettes is not addictive because some smokers can, and have, quit smoking on their own;

2. Smoking cigarettes is not addictive because it does not produce physical "dependence";

3. Smoking cigarettes is not addictive because it does not produce "intoxication"; and

4. Smoking cigarettes is not addictive because cigarettes are not like other addictive drugs, i.e., they are not illegal and are not necessarily linked to an anti-social lifestyle;

> smoking cigarettes is merely a pleasurable "habit" like playing tennis, jogging, eating chocolate, listening to rock music, etc.

These statements are detailed below.

**a. Philip Morris**

1149. Philip Morris Chairman James C. Bowling denied that cigarette smoking was an addiction in a July 18, 1973 "60 Minutes" interview. Instead, Bowling compared the choice to stop smoking to the choice to eat eggs or not. 503665743-5757 at 5752 (US 50417).

1150. In a 1992 pamphlet, Philip Morris stated that "those who term smoking an addiction do so for ideological, not scientific, reasons." 2023916742-6776 at 6745 (US 20396).

1151. In 1994, counsel for Philip Morris prepared a document titled "Smoking and Health Questions and Answers," in which an attachment titled "Smoking and Addiction" stated that smoking could only be classified as "addictive" if addiction did not require physical dependence (as evidenced by withdrawal) and cited the ineffectiveness of nicotine gum and patches as evidence that nicotine was not addictive. 682639225-9281 at 9277 (US 21028).

1152. In a 1994 published statement in the New York Times, Philip Morris asserted that it "does not believe cigarette smoking is addictive." 2023011263-1263 (US 20371).

1153. On April 14, 1994, the President and Chief Executive Officer of Philip Morris, William I. Campbell, testified under penalty of perjury in a nationally televised hearing before the House of Representatives Subcommittee on Health and the Environment. During this hearing, Campbell affirmatively denied that nicotine is addictive:

> Rep. Ron Wyden: Let me ask you. . . . Do you believe that nicotine is not addictive?

Mr. Campbell: I believe nicotine is not addictive, yes.

Regulation of Tobacco Products (Part I) Hearings before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, House of Representatives, 103rd Congress April 14, 1994, 2023195738-5892 (US 21990).

1154. Campbell's prepared written statement made the same claim that "cigarette smoking is not addictive" and that "Philip Morris has not hidden research which says that it is." In response to accusations of addiction by Dr. David Kessler, head of the Food and Drug Administration ("FDA") and others, Campbell wrote: "The presence of nicotine, . . . does not make cigarettes a drug or smoking an addiction" and "Smokers are not drug addicts." Campbell's statements made clear that he was speaking on behalf of both the industry and Philip Morris USA: "I would like to take this opportunity to set the record straight on charges that have recently been leveled against the industry and Philip Morris." ATC2746877-6887 (US 59009), Keane TT, 1/18/05, 10442:9-10442:24.

1155. On May 9, 1994, a telefax letter from Cathy Ellis, Director of Research at Philip Morris, was sent to Representative Henry Waxman, Chairman, Subcommittee on Health and the Environment, Committee on Energy and Commerce, denying nicotine's addictiveness under the definition of addiction which, although used in the 1964 Surgeon General's Report, was later rejected in the 1988 Surgeon General's Report. She claimed that nicotine could be described as addictive only if it caused smokers to experience "intoxication, pharmacological tolerance, and physical dependence in a manner that would impair the smokers' ability to exercise a free choice to continue or to quit smoking." 2029200293-0294 at 0294 (US 21537).

1156. After the 1994 hearing before the Congressional subcommittee, Philip Morris

placed an advertisement in national magazines, as an open letter to "smokers and nonsmokers" titled "FACTS YOU SHOULD KNOW." One of the "facts" was that "Philip Morris does not believe cigarette smoking is addictive. People can and do quit all the time." 2023011263-1263 (US 20371).

1157. In a lengthy August 2, 1994 submission to NIDA's Drug Abuse Advisory Committee, Philip Morris (along with the American Tobacco Company) once again asserted that "neither cigarette smoking nor the nicotine delivered in cigarettes is addictive" and denied that smoking was a "form of 'drug-seeking' behavior." 92486960-7040 (US 88560).

1158. Altria and Philip Morris Companies' employees Geoffrey Bible, Steve Parrish, Murray Bring, Marc Firestone, Victor Han, David Nicoli, and Charles Wall were all involved in crafting PM's 1994 submission to the FDA Drug Abuse Advisory Committee. 2047096727-6727 (US 26974).

1159. In Philip Morris's January 2, 1996 written submission in opposition to the FDA's assertion of jurisdiction over tobacco products, the company denied that it knew nicotine was addictive, denied that its documents showed that nicotine was addictive, and denied that smokers smoke to obtain nicotine. HHA0660489-0538 (US 87145).

1160. Philip Morris Companies' Corporate Affairs Senior Vice President Steven Parrish issued the January 2, 1996 "Industry Statement" accompanying the cigarette manufacturer Defendants' comments on the FDA rule; this statement also disputed the addictiveness of cigarettes. 2041220158-0163 (US 26936).

1161. In the May 12, 1997 issue of Time magazine, then President and CEO of Philip Morris, James Morgan, was quoted from his deposition testimony as stating, "If [cigarettes] are

behaviorally addictive or habit forming, they are much more like . . . Gummi Bears, and I eat Gummi Bears, and I don't like it when I don't eat my Gummi Bears, but I'm certainly not addicted to them." Myron Levin, Jury Views CEO's “Gummy Bear” Tobacco Deposition: Philip Morris Executive Testifies Cigarettes Aren't Any More Addictive Than Coffee or Candy," Los Angeles Times, July 18, 1997, at D3; Morgan PD, Broin v. Phillip Morris, et al., 4/17/97, 77:20-78:23.

1162. In the October 2, 1997 so-called “Hatch Statement” (actually titled "Philip Morris' Statement of Position), issued on PMC letterhead, Philip Morris once again denied addiction and claimed that cigarettes were addictive only under definitional changes that can be used to "describe many different kinds of behavior." However, Philip Morris did agree to cease all public debate on the issue. 2063123083-3084 (US 39734).

1163. In January 1998, Geoffrey Bible, CEO of Philip Morris Companies, submitted testimony that stated in part:

> We recognize that nicotine, as found in cigarette smoke, has mild pharmacological effects, and that, under some definitions, cigarette smoking is "addictive." The word "addiction" has been and is currently used differently by different people in different contexts, and the definition of the term has undergone significant changes over the past several decades. In 1964, for example, the Advisory Committee to the Surgeon General of the United States concluded that smoking, although "habit forming," did not fit within its definition of "addiction." However, in 1988, the Surgeon General redefined the term, and concluded that smoking is "addictive." We have not embraced those definitions of "addiction" which do not include such historically accepted and objective criterion, such as intoxication and physical withdrawal, as important markers.

Bible admitted that Philip Morris Companies' position was "at odds . . . with the public health community," and said that for the sake of a consistent public health message, Philip Morris Companies would no longer debate the addictiveness of nicotine except insofar as it was

"necessary to defend ourselves and our opinions in the courts." 83623323-3347 at 3343-3344 (US 21820).

1164. As late as 2002, Philip Morris was admitting only that smoking, not nicotine, met the "physiological definition of addictiveness." Philip Morris's admission was premised on a broad definition of "addiction" to include anything that is habit-forming. Merlo PD, United States v. Philip Morris, et al., 6/12/02, 500:24-503:22.

1165. As of 2005, Philip Morris USA's website states that it now "agrees with the overwhelming medical scientific consensus that cigarette smoking is addictive."

**b. R.J. Reynolds**

1166. At hearings before a Congressional Subcommittee from March 5 through March 12, 1982, RJR Chairman and CEO Edward Horrigan stated under oath that "with regard to addiction, there is absolutely no proof that cigarettes are addictive." At the time of this statement, Horrigan was also chairman of the Tobacco Institute executive committee. 521056398-6557 at 6411 (US 85334); 201830983-0993 (US 36327).

1167. In a May 8, 1990 revised draft response to a letter from Elaine Moss, a cigarette smoker, Jo Spach, a Manager of Public Information for the RJR Public Relations Department, stated that: "The fact is that there is nothing about smoking, or about the nicotine in cigarettes, that would prevent smokers from quitting. Unlike heroin, cocaine or even alcohol, cigarettes do not impair a smoker's ability to think clearly -- about smoking or about quitting. If a smoker wants to quit, it may take will power, but that is all it takes." 507707454-7455 at 7455 (US 22069).

1168. In January 1992, two RJR employees, John Robinson and Walter Pritchard,

published an article titled "The Role of Nicotine in Tobacco Use." The article compared nicotine to caffeine and absolutely denied that nicotine was addictive. The Robinson and Pritchard paper was cited in industry submissions to Congress in 1994 and to the FDA in 1996. 190211472-1482 (US 88561); 190211719-1724 (US 88562); 2505597781-7998G at 7804 (US 23028*).

1169. The Cologne office of RJR International faxed a December 14, 1992 draft statement titled "Arguments Against The E. C. Cigarette Warning Label 'Smoking Causes Addiction'," which stated that "on an 'addiction scale,' nicotine is less addictive than food" and that "nicotine improves performance, renders the user more alert and increases the efficiency of performance and reduces anxiety." 400729374-9380 at 9376 (US 29354).

1170. Counsel for RJR prepared an anticipated "Q & A" for company Chairman and CEO James Johnston dated April 6, 1994, which said that nicotine was "not addictive," and that the term "addiction" was misused in the context of cigarette smoking. 512688562-8571 at 8564 (US 20849).

1171. On April 14, 1994, Johnston testified under penalty of perjury in a nationally-televised hearing before the House of Representatives Subcommittee on Health and the Environment. During this hearing, Johnston affirmatively denied that nicotine is addictive:

| | |
|---|---|
| Rep. Ron Wyden: | Let me ask you. . . . Do you believe that nicotine is not addictive? |
| Mr. Johnston: | Congressman, cigarettes and nicotine clearly do not meet the classic definitions of addiction. There is no intoxication. |

Regulation of Tobacco Products (Part I) Hearings before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, House of Representatives, 103rd

Congress April 14, 1994, 2023195738-5892 at 5780-5781 (US 36975).

1172. An article in the August 2, 1994 New York Times reported that RJR scientist John Robinson "contests the consensus view of nicotine as addictive." Robinson stated that he could not differentiate "crack smoking from coffee drinking, glue sniffing from jogging, heroin from carrots, and cocaine from colas." 970260581-0581 (US 85337).

1173. A November 1994 RJR document titled "Media Tips" denied that smoking was addictive by using factors that are not relevant to any accepted scientific definition. The "Media Tips" binder was intended to be used by RJR employees to answer press inquiries. With respect to addiction, the document stated that:

> Regardless of how you define addiction, cigarettes are clearly not in the same class as addictive, mind-altering drugs like heroin and cocaine. The physiologic, pharmacologic and behavioral effects of nicotine, like caffeine, are fundamentally different from drugs like alcohol, heroin and cocaine. . . .
>
> Smokers do not become intoxicated. Their smoking does not cause them to hallucinate, have blackouts, commit immoral or criminal acts, abuse their families, or cause trauma and psychological damage to their loved ones.

525412344-2488 at 2374 (US 88563).

1174. The company prepared and distributed a similar document, called "Issues Guide," for use by company representatives worldwide in responding to media, public, and government inquiries. In this document, employees were instructed to deny addiction. 510345185-5358 at 5232-5235 (US 88046).

1175. In a March 1995 article in the periodical World Tobacco, RJR scientist John Roinson stated that nicotine was not addictive because it did not cause any physical intoxication.

519274569-4573 at 4572 (US 85339).

1176. In a proxy statement filed with the Securities and Exchange Commission ("SEC") on April 12, 1995, the Board of Directors of RJR Nabisco Holdings Corporation publicly stated: A group of shareholders filed a proposal to the Board that the company issue a public report regarding "whether nicotine content in and absorption from its tobacco products are deliberately controlled by the [c]ompany and if the reasons for any such control include the delivery of a reliable dose of nicotine to and/or the promotion of nicotine absorption by the customer." In recommending a vote against the proposal, the Board argued, "In RJRT's opinion, cigarette smoking does not meet the classic definitions of 'addiction,' and the forty-five million Americans who smoke are not 'addicts.' To call nicotine 'addictive' is to ignore significant differences between cigarettes and truly addictive drugs." The Board repeated these opinions in a proxy statement filed with the SEC in 1996, adding, "there is no accurate evidence establishing that any specific yield of nicotine causes 'addiction.'" Schedule 14A of RJR Nabisco Holdings Corp., -- Proxy Statement, Dated 4/12/95, Disclosure, 525735695-5730 at 5710 (US 88004); Schedule 14A of RJR Nabisco Holdings Corp., -- Proxy Statement, Dated 4/17/96, Disclosure; 2048767992-8041 at 8027 (87747*).

1177. An undated RJR magazine advertisement used industry-funded, CTR Special Account-4 recipient, psychologist Dr. Theodore Blau, to deny that smoking is addictive. In the advertisement, RJR not only denied any addictive aspects of smoking, but also blamed smokers for not being able to quit: "It's not that they can't stop; it's because they don't want to." 501926233-6233 (US 87148); 517214542-4557 (US 87149).

1178. Along with Philip Morris, B&W, Lorillard, and the Tobacco Institute, RJR filed a

joint submission on January 2, 1996, opposing FDA's assertion of jurisdiction over cigarettes. In its public statement on the FDA submission, RJR stated that, "Under scientifically verifiable criteria, nicotine and cigarette smoking are not addictive." 522626648-6651 (US 87150).

1179. In a September 9, 1997 draft document, RJR stated that

> if you broadly define “addiction” as engaging in an activity that is hard to quit once you start, then certainly, smoking can be considered addictive. The simple fact is many people find that once they have started smoking cigarettes, it can be difficult to quit. And some people find it extremely difficult.

The document added that

> despite this difficulty, the number of Americans who have quit smoking is as large as the number who currently smoke. The 1990 Surgeon General's Report stated that nearly 45 million Americans had quit smoking, most of them on their own without any outside help. Based on this fact, we believe that any smoker with a sincere desire to quit smoking can -- and should -- quit.

RJR's position on addiction failed to mention nicotine at all. 522879046-9047 at 9046 (US 85340).

1180. A May 4, 1999 draft RJR document denied the addictiveness of smoking, stating that "the word addiction means different things to different people and to some people it is a very emotive word. It's true that some smokers may find it very difficult to stop smoking and there are some smokers who believe that they are addicted to cigarettes. But the fact is that cigarettes do not have the addictive qualities of hard drugs such as heroin." 321309118-9133 at 9118 (US 85341).

1181. RJR CEO Andrew Schindler testified in prior litigation and in this case in 1997 and 2000, respectively, that smoking is not an addiction like heroin or cocaine. Schindler WD,

31:22-32:18. RJR made the same statement in responding to discovery requests in this litigation. Schindler WD, 34:24-35:7.

1182. In a May 2002 RJR document titled "Guiding Principles," the company stated its position regarding addiction in a section called "Quitting and Addiction." In this section, the company again demonstrated the cigarette industry's refusal to make an unqualified admission that cigarette smoking is addictive: "Many people believe that smoking is addictive, and as that term is commonly used today, it is. Many smokers find it difficult to quit and some find it extremely difficult." RJR later added that "[h]owever, we disagree with characterizing smoking as being addictive in the same sense as heroin, cocaine or similar substances." In addition, there was no mention of RJR's knowledge of the role of nicotine in maintaining addiction to smoking. 524946045-6088 at 6049 (US 52966).

**c. BATCo**

1183. In comments published in the Wall Street Journal on October 31, 1996, the CEO of BAT Industries and Director of BATCo, Martin Broughton, denied any concealment of research linking smoking and addiction, saying that, "We have no internal research which proves that . . . smoking is addictive." State of Minnesota v. Philip Morris, Inc., et al., C1-94-8565, Exhibit No. 2909, 700428854-8856 at 8854 (US 85342). This statement, made to analysts, investors, and journalists, was confirmed in a BATCo "Company Notice" to employees dated October 31, 1996.

1184. The statement by Broughton had been earlier released by BATCo as a Press Announcement. 800113810-3812 at 3810 (US 85343).

1185. BATCo, along with several other major international tobacco concerns (including

Defendants Philip Morris and RJR), was a member of INFOTAB (International Tobacco Information Center), a Europe-based pro-industry association similar to the Tobacco Institute. In April 1990, INFOTAB published a pamphlet called "Children and Smoking: The Balanced View," which contained the following on the subject of addiction:

> Cigarette smoking is not addictive and cannot be equated to hard drug use. Many millions of smokers have been able to quit smoking.
>
> The smoker decides if, when and how much he wishes to smoke and is not motivated as is the hard drug user to get a "fix" by whatever means possible, including criminal acts. Most smokers are able to quit without assistance.

2070052572-2578 at 2577 (US 87151).

1186. In a December 3, 1990 document, BATCo prepared "Q&As" to respond to public inquiries. The answer to expected questions denied evidence of the addictiveness of cigarettes:

> Whilst the US Surgeon General has claimed that nicotine is addictive, he has also claimed that video games are addictive. This is a prime example of the misuse of the term “addiction”. . . . [C]igarette smokers bear no resemblance to addicts . . . . Smokers smoke because they enjoy smoking.

536502262-2266 at 2262 (US 20930).

1187. In a similar 1992 document titled "Smoking Issues; Claims and Responses," BATCo denied that smoking was addictive and asserted that, "Smokers do not experience most of the symptoms of addiction." 601037850-7862 at 7853 (US 85345*).

1188. In a June 29, 1994 letter to the editor of The Daily Telegraph, responding to an earlier article published by the paper concerning the addictiveness of smoking, BATCo scientist Dr. Sharon Boyse (Blackie), stated the company's public position on addiction:

> As to the claim that smoking is addictive: this has been widely challenged by scientists working in the field. Those working with drug addicts in the USA, for example, complained that the US Surgeon General's claim that smoking was as addictive as heroin and cocaine back in 1988 trivialized the whole problem of drug addiction. It is easy to see why. Tobacco is not intoxicating, in direct contrast to any other substance that has been claimed to be addictive, from heroin and cocaine through to alcohol. Smokers are perfectly capable of continuing a normal social and family life and holding down a job -- there is little evidence of this with users of drugs of dependence. Nicotine does not induce physical dependence or tolerance (a fact recognised by the US Surgeon General when he attempted to redefine addiction to incorporate nicotine and decided to relegate these two previously crucial criteria to the bottom of the list!) and as even the Surgeon General acknowledged, millions of smokers all around the world have given up without any professional help.

500810940-0941 at 0940 (US 23036).

1189. In this same document, Dr. Boyse wrote that

> It has been suggested that smoking must be addictive because it contains nicotine. So do many common vegetables, including tomatoes, aubergines and potato skins. Are vegetable eaters also drug users -- physically dependent on their ratatouille, perhaps, in the same way that heroin addicts are dependent on their heroin?

Id. at 0941.

1190. In 1994, BATCo spokesperson Michael Prideful stated that BAT's current position on nicotine was that cigarette smoking was habit forming, but not addictive. British Tobacco Companies Hushed up Health Dangers, The Independent, June 19, 1994 502576028-6030 (US 86882).

1191. BATCo promulgated a company notice on January 4, 1997, in response to Liggett's settlement obligation with a group of state attorneys general. The notice contained the following:

> As to addiction, of course you can construct a broad subjective definition of addiction that includes cigarette smoking. Equally, under a meaningful objective definition, cigarette smoking is not an addiction. Regardless of the definition, smokers who want to quit do.

321007259-7260 (US 85344).

1192. In a March 21, 1997 statement posted for its staff on the British American Tobacco electronic bulletin board, BATCo again criticized Liggett's concession that nicotine was addictive, stating that Liggett's CEO was "simply brokering this deal in a desperate attempt to force one of the cigarette manufacturers to take over his financially troubled and failing tobacco interests." The statement added that "Liggett's action is not based on any new scientific discovery and does not affect British American Tobacco's attitude to its defense of litigation in either the US or other parts of the world." 321007261-7262 (US 46651).

**d. American Tobacco Company**

1193. On April 14, 1994, the Chief Executive Officer of American, Donald S. Johnston, testified under penalty of perjury in a nationally televised hearing before the House Subcommittee on Health and the Environment. During this hearing, Johnston denied that nicotine is addictive:

> Rep. Ron Wyden: Let me ask you . . . . Do you believe that nicotine is not addictive?
>
> Mr. Johnston: And I too, believe that nicotine is not addictive.

Regulation of Tobacco Products (Part I) Hearings before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, House of Representatives, 103rd Congress April 14, 1994, 2023195738-5892 at 5780-5781 (US 21990).

### e. Brown & Williamson

1194. While B&W knew internally that smokers were addicts who smoked for nicotine, the company understood that the industry's "free choice" argument in litigation would be undermined by any suggestion that smoking and nicotine were addictive. In the words of long-time general counsel Ernest Pepples, in a February 14, 1973 "Confidential" memorandum to public relations director John Ballock, one of the "salient problems now facing the cigarette industry" was:

> ADDICTION - Some emphasis is now being placed on the habit forming capacities of cigarette smoke. To some extent the argument revolving around "free choice" is being negated on the grounds of addiction. The threat is that this argument will increase significantly and lead to further restrictions on product specifications and greater danger in litigation.

696001196-1199 at 1198 (US 85346).

1195. On April 14, 1994, the Chairman and Chief Executive Officer of B&W, Thomas Sandefur, also testified under penalty of perjury in a nationally televised hearing before the House Subcommittee on Health and the Environment. At this hearing, Sandefur, consistent with his fellow CEOs, denied that nicotine is addictive:

> Rep. Ron Wyden: Let me ask you . . . . Do you believe that nicotine is not addictive?
>
> Mr. Sandefur: I believe nicotine is not addictive.

Regulation of Tobacco Products (Part I) Hearings before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, House of Representatives, 103rd Congress April 14, 1994, 2023195738-5892 at 5780-5781 (US 21990).

1196. In a 1994 press release titled "The Media Frenzy. Truth vs. Distortions," B&W

attacked the press coverage of its CEO's testimony before Congress, stating that he was merely providing his personal opinion that nicotine is not addictive. 800335973-5975 (US 31913).

1197. In its January 2, 1996 supplemental submission to the FDA in opposition to the FDA's assertion of jurisdiction over tobacco products, B&W (speaking for itself and BATCo) denied addiction and the prominence of nicotine in the smoking habit. The supplemental comments, signed by B&W's Director of Scientific and Regulatory Affairs Scott Appleton, stated, "[U]nder scientifically verifiable criteria, neither cigarette smoking nor the nicotine in smoke is addictive." 490107317-7366 at 7364 (US 87152).

1198. In 1999, B&W posted on its website a document called "Hot Topics: Smoking and Health Issues." While this document did admit that "by some definitions, including that of the Surgeon General in 1988, cigarette smoking would be classified as addictive," it went on to state that:

> Brown & Williamson believes that the relevant issue should not be how or whether one chooses to define cigarette smoking as addictive based on an analysis of all definitions available. Rather, the issue should be whether consumers are aware that smoking may be difficult to quit (which they are) and whether there is anything in cigarette smoke that impairs smokers from reaching and implementing a decision to quit (which we believe there is not.)

Response of Brown & Williamson Tobacco Corporation to the United States' First Set of Requests for Admission to All Defendants, RFA# 390, April 19, 2002, USX6390001-0400 at 0094 (US 89555).

**f. Lorillard**

1199. On April 14, 1994, the Chairman and CEO of Lorillard, Andrew H. Tisch, also

testified under penalty of perjury in a nationally televised hearing before the House of Representatives Subcommittee on Health and the Environment. During this hearing, Tisch also denied that nicotine is addictive:

| | |
|---|---|
| Rep. Ron Wyden: | Let me ask you . . . . Do you believe that nicotine is not addictive? |
| Mr. Tisch: | I believe that nicotine is not addictive. |

Regulation of Tobacco Products (Part I) Hearings before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, House of Representatives, 103rd Congress April 14, 1994, 2023195738-5892 at 5780-5781 (US 21990).

1200. In 1996, a group of shareholders filed a proposal with the Board of Directors of Loews Corporation, the parent company of Lorillard, stating, "virtually every major health organization in the United States of America as well as throughout the world has concluded that cigarette smoking and smokeless tobacco-use [sic] are addictive." In responding to the proposal, the Board countered, that "the use of the term 'addiction' ignores the well-known fact that millions of people have stopped smoking in recent years." Schedule 14A of Loews Corp., - Proxy Statement, Dated 5/14/96, Disclosure, 91762567-2592 at 2586-2587 (US 22080).

1201. In an October 1, 1997 letter to Senators Edward Kennedy and Orrin Hatch, Lorillard Chairman and CEO Alexander Spears denied the need for a warning on cigarettes stating that cigarettes are addictive. Spears wrote, "Although Lorillard does not believe that cigarettes are 'addictive' in a stricter pharmacological sense, as the use of cigarettes does not result in euphoric intoxicating effects, we have no desire to engage in a public debate over the definition of the word 'addiction.'" 83699666-9668 (US 85348).

1202. According to Lorillard CEO Martin Orlowsky, Lorillard has recently "accepted" that cigarette smoking is addictive, but that “acceptance” is dependent on a loose definition that includes any "pleasurable activity that can be difficult to stop." Orlowsky WD, 116:14-23.

1203. With respect to nicotine, CEO Orlowsky stated that Lorillard does not "take a public position one way or the other" on whether nicotine is an addictive drug and that the company still does not know whether nicotine is addictive or not. Orlowsky WD, 121:15-22.

1204. Dr. Christopher Coggins, Lorillard’s Senior Vice President of Science and Technology agreed that cigarette smoking falls only within the loose definition of addiction relied on by Orlowsky and added that cigarette smoking is only as addictive as “sugar and salt and Internet access.” Coggins PD, United States v. Philip Morris, 8/16/01, 116:22-117:14.

1205. Coggins claimed the same lack of knowledge of whether nicotine was addictive, adding that nicotine may or may not be an addictive agent in tobacco. In fact, according to Dr. Coggins, the addictiveness of smoking may be the result of a "simple physical repetitive pleasurable activity." Coggins PD, United States v. Philip Morris, et al., 8/16/01, 117:15-120:11.

**g. Liggett**

1206. On April 14, 1994, the Chairman and Chief Executive Officer of the Liggett Group, Inc., Edward A. Horrigan (formerly of RJR), also testified under penalty of perjury in a nationally televised hearing before the House of Representatives Subcommittee on Health and the Environment. During this hearing, Horrigan denied that nicotine is addictive:

| | |
|---|---|
| Rep. Ron Wyden: | Let me ask you . . . . Do you believe that nicotine is not addictive? |
| Mr. Horrigan: | I believe nicotine is not addictive. |

Regulation of Tobacco Products (Part I) Hearings before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, House of Representatives, 103rd Congress April 14, 1994, 2023195738-5892 at 5780-5781 (US 21990).

**h. Tobacco Institute**

1207. The Tobacco Institute was by far the Defendants' most vocal spokesperson in the industry's campaign to deny addiction and conceal internal research and knowledge. Over the decades, the Tobacco Institute, on behalf of the cigarette company Defendants, publicly disseminated countless false, deceptive, or misleading statements denying the addictiveness of nicotine and cigarette smoking. The following instances exemplify the many statements made by TI employees in the organization’s attempts to deceive and mislead the American public about smoking, the role nicotine played in smoking, why quitting was so difficult, and whether people who could not quit smoking merely lacked will-power.

1208. When the Director of NIDA, Dr. William Pollin, testified before the Senate Committee on Labor and Human Resources in 1982 that the agency had concluded that nicotine met all the standard criteria used by NIDA, the Drug Enforcement Administration ("DEA"), the FDA, and the WHO, to define a dependence-producing drug, Defendants did not come forward with their internal research, as detailed in the preceding Section, supporting NIDA's conclusion. Instead, Defendants, through the Tobacco Institute and outside counsel, sent representatives and paid researchers to testify that NIDA was wrong and that nicotine did not cause addiction or dependence. (US 58808); Henningfield WD, 132:10-134:22.

1209. One of the witnesses Defendants produced at the Congressional Committee hearing was Theodore Blau, who stated on behalf of the Tobacco Institute and its members that,

"There is no scientific basis for a statement that cigarette smoking is addictive." 680584197-4204 at 4201 (US 85349); TIMN0170757-0765 (US 85351).

1210. On March 12, 1982, the Tobacco Institute's William D. Toohey issued a press release summarizing the tobacco company-funded testimony of Blau before a Congressional Subcommittee. According to the release, Blau criticized the characterization of smoking as addictive, claiming that he placed the "attachment" to smoking in the same category as "tennis, jogging, candy, rock music, Coca-cola, members of the opposite sex and hamburgers." The press release went on to claim that "removal of these activities, persons or objects can cause sleeplessness, irritation, depression and other uncomfortable symptoms, similar to those felt by some with abstinence from tobacco." TIMN0120729-0730 (US 65625).

1211. The March 1982 Tobacco Institute press release failed to state that Blau was paid by the cigarette company Defendants to testify and that he was a member of, in Tobacco Institute President Sam Chilcote's words, the "Tobacco Institute Team." Instead, the press release indicated only that Blau was a "Florida psychologist," leaving the false impression that he had no ties to the tobacco industry. TIMN0120729-0730 (US 65625).

1212. In fact, as noted earlier, Blau was a CTR Special Account 4-recipient of thousands of cigarette company Defendant dollars through the law firm of Shook, Hardy & Bacon. Moreover, he was one of the many industry-funded scientists whose testimony was reviewed and approved by Shook, Hardy & Bacon prior to presentation before Congress. 1005125796-5796 (US 36096); 01335087-5087 (US 85352); 01335086-5086 (US 26842); TIMN197541-7581 (US 85353); 1005064612-4612 (US 85354); 01335102-5102 (US 26483); 1005061616-1625 (US 35959); 03746309-6316 (US 85355); 503655215-5215 (US 85356); 1005125795-5795 (US

85357).

1213. The April 1982 edition of TI's newsletter, The Tobacco Observer, also quoted Dr. Blau's addiction denial before Congress in an article titled "Smoking Said Not Addictive." TIMN0126427-6438 (US 85358).

1214. When the Department of Health and Human Services' Office on Smoking and Health produced a pamphlet stating that cigarette smoking was addictive, the Tobacco Institute went to the media with a statement denying addiction. The Tobacco Institute President informed industry general counsel in a memorandum dated March 7, 1983, that the Tobacco Institute "drilled" the media with the industry message that cited "substantial refutation of the addiction claim," including the 1982 testimony of Blau. Once again, the Tobacco Institute press release failed to reveal that Blau was an industry paid spokesman for the Tobacco Institute and its members. TIMN0350773-0775 at 0773 (US 85359).

1215. The Tobacco Institute then sent Curtis Judge, Lorillard President and Chairman of the Tobacco Institute Executive Committee, to speak for the industry before the Senate Committee on Labor and Human Resources on March 12, 1983, in opposition to legislation that would require additional warnings on cigarette packages, including a warning that smoking was addictive. Accompanying Judge were several industry-paid scientists, including Blau, who once again denied and disputed addiction and the mounting scientific evidence behind the NIDA pamphlet and the basis for the warning. TIMN0049411-9548 (US 85360).

1216. On March 17, 1983, Blau submitted a written statement denying addiction to the House of Representatives Subcommittee on Health and the Environment considering the same issue. In the statement, he made no mention of his tobacco industry funding and ties.

TIMN0384222-4231 (US 85361).

1217. On the same date, the Tobacco Institute distributed a press release to newspapers and other news outlets across the United States, quoting Blau, with no industry attribution, again denying the addictiveness of cigarette smoking. TIMN0138444-8446 (US 85362).

1218. A May 12, 1983 Tobacco Institute press release quoted Dr. Blau's apparently "independent" denial of addiction. He had again been paid by the industry to testify before a Senate Committee on Labor and Human Resources: "Dr. Theodore H. Blau, a clinical psychologist in Tampa, Florida, and past president of the American Psychological Association, sharply disputed an assertion in pending legislation that cigarette smoking is 'addictive.'" The Tobacco Institute did not tell the general public that Blau had testified on behalf of the tobacco industry and the Tobacco Institute. TIMN0120772-0773 (US 85363).

1219. The Tobacco Institute also denied that smoking and nicotine are addictive in its submissions and testimony leading up to the 1988 Surgeon General's Report. Henningfield WD, 134:23-136:1.

1220. In 1988, the Surgeon General released a report titled "The Health Consequences of Smoking: Nicotine Addiction." While the issuance of the 1988 Surgeon General's Report certainly represented a consensus in the scientific and public health community, there can be no doubt that the industry had reached an internal consensus on the addictiveness of smoking decades earlier. See Section V(B)(3), supra. The Tobacco Institute quickly responded to the Report with a series of advertisements, press releases, and public statements attacking and denying the Surgeon General's findings, even though these findings reflected the overwhelming medical and scientific consensus on the subject. For example, on May 16, 1988, the Tobacco

Institute, on behalf of the cigarette company Defendants, issued a press release stating:

> CLAIMS THAT CIGARETTES ARE ADDICTIVE CONTRADICT COMMON SENSE . . . Smoking is truly a personal choice which can be stopped if and when a person decides to do so. . . . The claim that cigarette smoking causes physical dependence is simply an unproven attempt to find some way to differentiate smoking from other behaviors. In fact, any feelings persons might have upon giving up smoking are those that would be expected when one is frustrated by giving up any desired activity. . . . The claims that smokers are “addicts” defy common sense and contradict the fact that people quit smoking every day.

TIMN0019963-9963 (US 21239); Dawson WD, 38:18-23.

1221. A second Tobacco Institute press release dated May 16, 1988 carried the headline, "CLAIMS THAT CIGARETTES ARE ADDICTIVE IRRESPONSIBLE AND SCARE TACTICS." This press release also attacked the Surgeon General's Report and specifically denied any dependence on nicotine, stating:

> After years of well-funded research, it has not been established that cigarette smoking produces a physical dependence to nicotine. In fact, it has been impossible to establish that the feelings persons have upon giving up smoking are anything but that which would be expected when one is frustrated by giving up any desired habit.

TIMN0019964-9965 at 9964 (US 85366).

1222. In a July 29, 1988 press release, the Tobacco Institute stated that the Surgeon General's declaration that smoking is an addiction was "[an escalation of anti smoking rhetoric . . . without medical or scientific foundation." TIMN0125189-5189 (US 77065).

1223. The 1988 press release also utilized Tobacco Institute spokesmen/scientists Blau and Stephen Raffle to deny addiction. For example, the Tobacco Institute quoted Raffle in the press release, stating, "Clinically, cigarette smoking does not result in addiction-like behavior."

Blau was quoted in the press release as saying that the Surgeon General's report was "misleading and unfortunate." TIMN00125189-5189 (US 77065).

1224. Raffle also provided a statement to the House subcommittee denying addiction. The statement was made at the Tobacco Institute's request, but contained no mention of any Tobacco Institute connection or sponsorship. TIMN207378-7384 (JD-080049).

1225. The July 29, 1988 press release failed to indicate in any way that Raffle and Blau were industry selected, managed, and paid consultants to Defendants and their law firms. Nor did the press release mention that their statements to the House subcommittee had been reviewed by Covington & Burling lawyers and several Defendants prior to being delivered to Congress. Instead, the press releases implied that both scientists testified independently before the House Subcommittee. TIMN0125189-5189 (US 77065); 506419103-9103 (US 85372); 87701893-1903 (US 32065); 2025875995-5997 (US 85375).

1226. In a 1989 nationally broadcast interview on "Good Morning America," Tobacco Institute spokesperson Brennan Dawson stated: "I can't allow the claim that smoking is addictive to go unchallenged. . . . The majority of people who smoke make that decision, they can quit if they want to do it. It's a matter of willpower." TIME 389474-9479 at 9476 (US 21286).

1227. The Tobacco Institute published a brochure in March 1989 titled "The Anti-Smoking Campaign: Enough is Enough." In this document, the Tobacco Institute denied that smoking is addictive, emphasizing that: "The fact is that there is nothing about smoking, or about the nicotine in cigarettes, that would prevent smokers from quitting. . . . If a smoker wants to quit, it may take will power, but that's all it takes." TIMN0130559-0578 at 0574 (US 85376).

1228. In another nationally-broadcast interview, in 1990 on "Larry King Live," Ms.

Dawson stated on behalf of the Tobacco Institute:

> About 95 percent of those people have quit cold turkey. They've walked away from cigarettes and they've not gone through formal treatment centers or anything else. It's not like alcoholism or drug abuse. It's not an addiction. . . .
>
> There's nothing about nicotine that prevents you from quitting. And that's the whole difference.

TIMN341405-1422 at 1420 (US 21363).

1229. On February 20, 1990, the Tobacco Institute issued a press release stating that Charles Whitley had appeared before the Senate Committee on Labor and Human Resources on behalf of the Tobacco Institute, had criticized proposed legislation, and had stated that requiring an addiction warning label on cigarette packages and advertisements "defies all logic, when, according to the Surgeon General, nearly half of all Americans who ever smoked have quit and most of the 41 million smokers who quit did so without formal treatment programs or smoking cessation devices." TIMN341503-1504 (US 85377).

1230. During a February 27, 1990 appearance on the program, "Nightwatch," Ms. Dawson stated on behalf of the Tobacco Institute that

> Well, the fact is that now in the United States there are as many ex-smokers as there are smokers. And 95 percent of the people who have quit smoking have done it cold turkey. That is, they've just put down their cigarettes and walked away. And that's not the picture of the addictive drugs that we see, at least certainly not with the illegal substances, much less alcohol, that we see in terms of problems in society.

CORTI1731-1738 (US 87735).

1231. The Tobacco Institute published another press release dated July 12, 1990, stating that Blau had once again testified before a House Subcommittee denying the addictiveness of

cigarettes. The Tobacco Institute provided the following in its press release, once again omitting any mention of the tie between Blau and the cigarette manufacturer Defendants:

> The proposed "addiction" warning label is likewise unjustified. Dr. Theodore H. Blau, a practicing clinical psychologist from Tampa, Florida, said that, "In my view, labeling tobacco use 'addictive' is misleading and potentially harmful to the American public." Blau noted that -- unlike heroin addicts, cocaine addicts and alcoholics who are in the process of giving up these drugs -- the alleged "withdrawal symptoms" which some smokers report when giving up smoking are "generally the same kinds of frustrations that one would expect to see when someone discontinues any well-established and well liked habit. Such symptoms as missing the habit and mild irritability are similar to the reactions experienced by those who give up coffee or sweets.

TIMN0026755-6757 at 6757 (US 85379).

1232. The Tobacco Institute paid Dr. Raffle to speak out again in 1994 following the sworn testimony of FDA Commissioner Dr. David Kessler that smoking was addictive. In a March 25, 1994 Tobacco Institute press release, the Tobacco Institute Media Relations department restated Raffle's industry-funded and industry-prepared comments that smoking was not "truly addicting" and that "in order to include smoking as an addiction, one must redefine that term, water down its meaning, and ignore critical differences involving every aspect of these behaviors." The press release did not disclose any connection between Raffle and the Tobacco Institute or the cigarette manufacturer Defendants. TIMN328214-8215 (US 77090).

1233. During the nationally broadcast news show "Crossfire" on March 10, 1994, Brennan Dawson, Vice President of Public Affairs at the Tobacco Institute, was asked by host Michael Kinsley, "Is nicotine addictive?" Dawson responded, "Absolutely not. Nicotine is first of all- I mean nicotine occurs naturally in cigarettes. Nicotine is also found in things as scary as

potatoes." TI10720452-0464 at 0455 (US 87155*).

1234. During this same interview, Ms. Dawson admitted making the following statement regarding the addictiveness of nicotine:

> Well, first of all, let's understand that -- that sometimes we use the word "addiction" in very broad terms. We talk about being, you know, news junkies. We talk about being chocoholics. We -- you know, we -- we put all these broad terms[.] . . . But when we talk about addiction in a classical sense, we're talking about things like, you know, heroin and alcohol, for example, where you're either intoxicated and you can't make a decent decision, or you're in such physical withdrawal that you're probably in the hospital. And there's nothing about nicotine specifically that classifies it as such.

Id. at 0459-0460; Dawson WD, 45:7-48:23.

1235. She added that "[t]here is no chemical addiction" to nicotine. TI10720452-0464 at 0460 (US 87155*), Dawson WD, 45:7-48:23.

1236. During the nationally broadcast news show "Face the Nation" on March 27, 1994, Ms. Dawson was asked by host Robert Schieffer, "[D]oes the industry take the position that cigarettes are not addictive?" She responded, "The industry does take that position." (US 89319).

1237. During an April 1, 1994 appearance on the "MacNeil/Lehrer Newshour," when asked, "[d]o you -- do you, in the industry, concede that nicotine is an addictive drug?" Ms. Dawson responded, "[n]o we don't." (US 89300), Dawson WD, 45:7-48:23.

1238. On April 13, 1994, Dawson again appeared on the CNN program "Larry King Live." When she was asked whether nicotine was addictive, she responded, "No, nicotine is not addictive." TIMN0010649-0650 at 0650 (US 62778).

1239. In this litigation, Ms. Dawson testified that the Tobacco Institute's public position

was that smoking and nicotine were not addictive and that this position remained unchanged over the years. Dawson WD, 36:8-13; Dawson TT, 1/12/05, 9938:3-9940:19.

1240. Dawson, on behalf of the Tobacco Institute, also admitted that there was no scientific basis for the public statements denying the addictiveness of nicotine, Dawson WD, 49:5-50:4, and that the cigarette manufacturer Defendants never provided the Tobacco Institute with information that nicotine was a drug with a variety of physiological effects and was thought to be responsible for the addictive properties of cigarette smoking. Dawson WD, 53:9-12, 54:8-12, 55:10-14; Dawson TT, 1/12/05, 9958:1-11.

1241. The Tobacco Institute joined Defendants Philip Morris, RJR, B&W, Lorillard, and Liggett in opposing the Food and Drug Administration's assertion of jurisdiction over cigarettes as drug (nicotine) delivery devices in 1996. In Volume III of the filing prepared and submitted on behalf of the Tobacco Institute and the cigarette manufacturer Defendants, the group denied that nicotine in tobacco was addictive, denied any significant pharmacological effects of nicotine, denied that smokers smoke primarily for nicotine, denied any "threshold" amount of nicotine necessary for addiction, and denied compensation by smokers of low tar products. 2505597781-7998G (see, e.g. 7793-7795) (US 23028*).

1242. The submission of the Tobacco Institute and the five manufacturers named above was publicized at a Tobacco Institute press conference on the morning of January 2, 1996. While the Tobacco Institute's Brennan Dawson led the press briefing, she was accompanied by Philip Morris' Steven Parrish, RJR's Charles Blixt, and Lorillard's Arthur Stevens. TI01750819-0820 (US 87156).

**i. CTR**

1243. Sheldon Sommers, Research Director of CTR and member of CTR's Scientific Advisory Board, told a Congressional subcommittee in hearings held in April 1969 that "smoking tobacco is not considered an addiction." 500925974-5998 at 5976 (US 85382); BWX0007189-7297 (US 36237).

1244. Robert Hockett, a subsequent CTR Research Director, stated during Congressional hearings held October 5 and 6, 1978, that while "there is an adjustment " to smoking over time, the issue of tobacco dependence was "a very tough question." 500925974-5998 at 5976 (US 85382).

1245. Statements such as these were misleading and are contradicted by decades of scientific research conducted by or funded by Defendants, and by a myriad of internal statements by company representatives.

**j. Defendants' Conduct Continues**

1246. Even today, although certain Defendants have acknowledged, to varying degrees, the overwhelming evidence that smoking is addictive, no Defendant accepts the Surgeon General's definition of addiction, no Defendant admits that nicotine is the drug delivered by cigarettes that creates and sustains addiction, and no Defendant acknowledges that the reason quitting smoking is so difficult, and not simply a function of individual will power, is because of its addictive nature.

1247. In 1999, Philip Morris first posted on its website a statement that "[w]e agree with the overwhelming medical and scientific consensus that cigarette smoking is addictive" and that it can be difficult to quit smoking. However, there is no mention of the established fact that the nicotine in cigarettes is what causes the smoker's addiction. TLT0770066-0088 (US 72408);

Szymanczyk WD, 63:3-7; Parrish TT, 1/25/05, 11038:23-11039:8.

1248. On its current website, BATCo states that "[w]e accept the common understanding today that smoking is addictive." Yet, when discussing quitting smoking, the company makes no mention of the role nicotine plays in maintaining the addiction, downplays the success of nicotine replacement therapy in helping smokers quit, and still states that the most important factor in successful quitting is "having the motivation and the self-belief that you can quit."

http://www.bat.com/oneweb/sites/uk3mnfen.nsf/wwPageswebLive/BEDB4BB/FDD4F7CE8025 6BF4000ee157?open document, TLT0231984-1984 (US 86692); (US 89563).

1249. On its current website, RJR states that, "Many people believe that smoking is addictive, and as that term is commonly used, it is." However, RJR later equivocates on this statement, stating its disagreement with the opinion in the health and scientific communities that smoking is as addictive as heroin or cocaine. RJR does not disclose the role of nicotine in the addiction. TLT0770095-0128 (US 72410); Beasley WD, 67:16-23.

1250. On its current website, B&W recites its new public position that it "agrees that, by current definitions of the term 'addiction,' including that of the Surgeon General in 1988, cigarette smoking is addictive." Two paragraphs down from this, however, B&W reverts to its former denials, omitting any reference to nicotine and stating the following :

> Although smoking can be very difficult to quit, we do not believe that the term "addiction" should be used to imply that there is anything in cigarette smoke that prevents smokers from reaching and implementing a decision to quit. Smoking may indeed be difficult to quit, but people can quit and do so in large numbers. The scientific literature demonstrates that smokers who believe they can quit, and who believe that the benefits of quitting

outweigh the enjoyment of continuing to smoke, can do so.

TLT1020158-0158 (US 87157); Ivey WD, 94:16-96:1.

1251. B&W's current Nicotine and Addiction section does not even discuss nicotine or its effects on the human body. In sum, the B&W current, post-MSA position continues to deny that any aspect of smoking "prevents" a smoker from quitting. Moreover, this position continues to confuse and distort the facts on addiction, namely that smoking is very difficult to quit primarily because of nicotine and that quitting is not simply a question of willpower and motivation. At the same time, the position refers to "the enjoyment of continuing to smoke," suggesting that smokers smoke simply for continued "enjoyment," as opposed to a physiological craving or need for nicotine. TLT1020158-0158 (US 87157); Ivey WD, 94:16-96:1.

1252. Susan Ivey, former president and CEO of B&W and current CEO of RJR and Reynolds American, stated in 2004 that while B&W believed that nicotine is a "significant contributor to addiction," the company would not agree that nicotine is an addictive drug. Ivey TT, 11/16/04, 6194:21-6195:5.

1253. Lorillard's current position, as of 2005, is that smoking is addictive but only in the same way as "repetitive pleasurable activities that can be difficult to stop." Lorillard believes that smoking is not addictive in a "pharmacological sense." Orlowsky WD, 116:14-117:18. With respect to nicotine, President and CEO Martin Orlowsky stated, on behalf of Lorillard, that the company does not take a public position" and does not know if nicotine is an addictive drug or not. Id. at 121:15-22.

1254. The Lorillard website has recently added a statement that includes the sentence, "Cigarette smoking can also be addictive." However, this statement does not define the term

"addictive," and omits any reference to nicotine. (JD-024979).

1255. Martin Orlowsky agreed that Lorillard's position was that smoking is addictive, but he "did not know what a 'drug addiction' is." Orlowsky WD, 119:21-121:6. Orlowsky would only say that "nicotine is an important part of smoking" and refused to accept the fact that nicotine was the ingredient in cigarettes that made cigarette smoking addictive. Orlowsky WD, 119:21-121:6, 121:15-122:6. Orlowsky was a particularly evasive and unresponsive witness in this litigation. His testimony was not credible.

1256. While Philip Morris now appears to have accepted that smoking and nicotine are addictive, that new position was not adopted until 2000, after the filing of this lawsuit. After decades of consistent public denials by different corporate executives, Philip Morris USA President and CEO Michael Szymanczyk first admitted in June 2000 that nicotine was addictive. Philip Morris USA subsequently added a statement to its website in October 2000 agreeing that "cigarette smoking is addictive, as that term is most commonly used today." That statement has since been modified to read, "We agree with the overwhelming medical and scientific consensus that cigarette smoking is addictive." However, the Philip Morris USA website still omits any information on nicotine. Szymanczyk PD, United States v. Philip Morris, et al., 6/13/02, 249:15-254:8, 267:10-270:3.

1257. Philip Morris International changed its public position to agree with the public health community's conclusions that smoking is addictive at the same time (October 2000) that Philip Morris USA did so. 2078850517 (US 45218).

1258. Philip Morris adopted its current position that nicotine when found in cigarette smoke is addictive for the first time in January 2003, in a pleading filed in this case.

USX639001-0400 (US 89555). The company's present definition of addiction is "a repetitive behavior that's associated with an adverse outcome." The "adverse outcome" is disease associated with smoking. Philip Morris believes that if the risk of disease were eliminated, cigarette smoking would no longer be an addiction. In addition, Philip Morris continues to dispute that nicotine is in and of itself an addictive drug. Carchman PD, United States v. Philip Morris, et al., 6/6/03, 14:6-15:12, 22:3-23:3, 23:19-20, 25:4-26:24, 29:1-13, 85:17-86:10.

1259. According to Denise Keane, general counsel for Defendant Philip Morris USA, Philip Morris never publicly explained its position that cigarette smoking is not addictive because the company believes it should properly be characterized as a drug dependence. Keane TT, 1/18/05, 10447:23-10448:7.

1260. Ms. Keane also admitted that when Philip Morris purchased three Liggett brands in 1999, L&M, Lark, and Chesterfield, it removed the pre-existing package labels stating that smoking is addictive. Keane TT, 1/18/05, 10457:5-10460:16.

1261. While Philip Morris replaced the pre-existing package labels with onserts, these onserts did not contain the statement that Philip Morris agrees that smoking is addictive, even though Philip Morris had publicly stated this view in 2000 as already noted. Keane TT, 1/18/05, 10460:17-10462:15.

1262. While Philip Morris told people that it agrees that cigarette smoking is addictive, it has not told the public that it agrees that it is the nicotine delivered in cigarette smoking that is addictive. Ms. Keane, Philip Morris' general counsel, admitted this was material information that the public should possess. Keane TT, 1/18/05, 10533:5-10534:4.

1263. In spite of the overwhelming medical and scientific evidence, only one cigarette

manufacturer Defendant, Liggett, has placed a warning on its packages flatly and clearly stating that nicotine is addictive. Liggett advertising and packaging state, "Smoking is Addictive." LeBow TT, 2/7/05, 12375:21-12376:1.

1264. Moreover, no cigarette company Defendant other than Liggett and Philip Morris, has admitted that nicotine in cigarette smoke is addictive. Liggett is the only Defendant to do so publicly.

1265. Geoffrey Bible, former CEO of Philip Morris Companies, was the ultimate authority on the content of public statements on smoking and health made by Philip Morris Companies' subsidiaries, including Philip Morris USA. Bible PD, United States v. Philip Morris, et al., 8/22/02, 83:9-84:9, 85:22-86:25.

### 5. Defendants Concealed and Suppressed Research Data and Other Evidence that Nicotine Is Addictive

1266. As demonstrated, Defendants' internal documents reflect a sophisticated understanding of nicotine and its role in creating smoking addiction -- an understanding that is totally inconsistent with their long-standing public denials that nicotine is addictive. In addition, it is clear that Defendants intentionally withheld from public dissemination, from the public health community, and from government authorities, accurate and important information regarding the addictiveness of nicotine in cigarettes. Henningfield WD, 87:10-88:20, 161:23-167:6.

1267. Defendants suppressed their own extensive research findings discussed in Section V(B)(3), supra, supporting the conclusion that nicotine is addictive, and fostered controversy about the extent of scientific knowledge concerning nicotine and its addictive effects that was

publicly available. Henningfield WD, 134:23-136:9, 161:23-167:6.

1268. As that evidence shows, Defendants themselves possessed, from their own in-house and external research, information that led them to conclude, long before public health bodies did, that the primary reason people keep smoking cigarettes is to obtain the drug nicotine, which is addictive. Defendants intentionally withheld this data (including many of studies on the physiological effects of nicotine in animals and humans, and much of their research on the determinants of nicotine dosing in cigarettes) when there were major public efforts to review and synthesize all available information. This occurred with the preparation of both the 1964 and 1985 Surgeon General's Reports and numerous congressional investigations. Defendants also engaged in a decades-long, elaborate, sophisticated, well-funded public relations offensive, denying and attacking the consensus conclusion they had long ago reached internally, but that the less well-funded public health community was belatedly reaching, that smoking is addictive primarily because cigarettes effectively deliver nicotine. Henningfield WD, 87:10-103:13, 104:14-110:8, 134:23-136:1, 150:14-159:8, 161:23-167:6. See also 490010042-0044 at 0043 (US 79285) (presenting "Addiction Statement," prepared by Shook, Hardy & Bacon, deciding the company's position must be that smoking is not addictive and that, "Statements in company documents cannot refute this conclusion.").

1269. A September 9, 1980 Tobacco Institute internal memorandum revealed the recognition by the member companies that a public admission that nicotine was addictive would undermine their litigation defense that a person's decision to smoke is a "free choice":

> [T]he entire matter of addiction is the most potent weapon a prosecuting attorney could have in a lung cancer/cigarette case. We can't defend continued smoking as "free choice" if the person

was “addicted.”

TIMN0107822-7823 at 7823 (US 21275).

1270. A second reason Defendants denied addiction was to avoid regulation by the FDA. None of the companies' internal research and evidence about addiction was submitted in 1996 when the FDA sought to assert jurisdiction over cigarettes as drug (nicotine) delivery devices. Instead, Defendants vigorously denied every aspect of addiction. 25055597781-7998G (US 23028*).

1271. The following are examples of the actions Defendants undertook to either block or limit the nature and dissemination of nicotine-related research, as well as any evidence suggesting addiction.

**a. Philip Morris**

1272. As already discussed, Philip Morris intensively studied nicotine and both its pharmacological and physiological effects on smokers (sometimes called addictive, dependence-producing, or reinforcing effects) in an effort to increase its market share within the industry. However, Philip Morris withheld from the public its internal knowledge and acceptance that smoking, because of nicotine, was addictive. Similarly, Philip Morris's research demonstrating the addictive impact of nicotine on the bodies of animals and humans was suppressed, and in some cases terminated.

1273. In a 1992 memorandum titled "Philip Morris Behavioral Research Program," the company's long-time outside counsel, Shook, Hardy & Bacon, reviewed and summarized much of Philip Morris's nicotine research conducted from 1969 to 1984 under the direction of Principal Scientist William L. Dunn. The research into nervous system effects and smoking behavior was

conducted both internally (by scientists such as Dunn, Berntson, Gullotta, DeNoble and others) and by outside researchers (including scientists Hutchinson, Abood, Egle and others). 2021423403-3497 at 3406-3409 (US 36743).

1274. The funding for the Behavioral Research Program, or Nicotine Program as it was sometimes called, was terminated without explanation in 1984. 2025768108-8166 at 8113 (US 36743).

1275. Discussing Philip Morris's research into the pharmacological effects of nicotine, Dr. Dunn wrote the following in a "CONFIDENTIAL" memorandum to Research & Development Vice President Helmut Wakeham on February 19, 1969: '[D]o we really want to tout cigarette smoke as a drug? It is, of course, but there are dangerous F.D.A. implications to having such a conceptualization go beyond these walls." 1003289921-9922 at 9921 (US 20167).

1276. Dunn wrote a "CONFIDENTIAL" memorandum dated October 19, 1977 titled "Smoker Psychology Program Review" summarizing his program for Tom Osdene. Dunn made three observations that represented the Philip Morris position on smoker behavior and nicotine research. First, the mission of the Philip Morris program was to "study the psychology of the smoker in search of information that can increase corporate profits." Second, Dunn admitted that while "[t]here is a general realm of psychological inquiry that would not make our lawyers nervous were the findings to be made public," there is "legal concern" with any scientific inquiry into the dependency-producing compound, or "reinforcing mechanism," of smoking. Third, Dunn stated that his research assumed that nicotine was the compound in question, a compound without which "the cigarette market would collapse, P.M. would collapse, and we'd all lose our jobs and consulting fees." 1000046538-6546 at 6538-6542 (US 26074); 2021423403-3497 at

3488 (US 36743).

1277. Dunn also compared smokers seeking nicotine to Pavlov's dogs and to hungry laboratory rats who press levers seeking food pellet "rewards":

> Consider the smoker. Smoking the cigarette is the lever press. The effect of that smoking act upon the person is the reward. That effect reinforces the smoking act. He comes to push the smoking lever 10 to 60 times per day.

1000046538-6546 at 6543 (US 26074); 2021423403-3497 at 3485 (US 36743).

1278. Shortly thereafter, in a November 3, 1977 memorandum, Dunn revealed his strategy for concealing any unfavorable nicotine research results. Regarding a proposed study of nicotine withdrawal in rats to be undertaken by Philip Morris scientist Carolyn Levy, Dunn stated that he approved it. However, he cautioned that, "If she is able to demonstrate, as she anticipates, no withdrawal effects of nicotine, we will want to pursue this with some vigor. If, however, the results with nicotine are similar to those gotten with morphine and caffeine, we will want to bury it." 1003293588-3588 (US 20168).

1279. The terms of Levy's "Proposed Study of Nicotine Withdrawal in Rats" are contained in a November 1, 1977 memorandum from her to Dunn, where Levy states her hypothesis that her research would show that there are no withdrawal symptoms associated with nicotine. Levy intended to compare known morphine and caffeine withdrawal symptoms to nicotine's effects. Levy stated, however, that while she predicted favorable results, she understood that "it is dangerous to set out to prove the null hypothesis." 1003293589-3591 (US 21421).

1280. Robert Seligman, Vice President of Research & Development at Philip Morris,

wrote a memorandum to company general counsel Alex Holtzman dated June 27, 1978, attaching Dunn's report of a conference Seligman and Dunn attended called "Cigarette Smoking as a Dependence Process." The conference was apparently put on by the National Institute on Drug Abuse. Seligman prophetically warned Holtzman that:

> It is my impression that at some time in the future, nicotine will be listed as a dependency drug (or smoking will be listed as a dependence process). Thus, it might be wise to contemplate the future legal ramifications of such an inevitability. Additionally, you might want to consider some mode of action which might forestall such a designation by the drug abuse community.

1003726420-6420 (US 85384) (emphasis in original).

1281. A memorandum to Seligman from J.I. Seeman, dated March 18, 1980, provided additional commentary on the Philip Morris "Nicotine Receptor Program." In Seeman's memorandum, he implied that any outside scientist working with Philip Morris had to share the company's interest. He wrote that, "An additional, and perhaps fundamental, requirement was that the individual(s) chosen to work with us is acceptable from a 'political' perspective." 1003289974-9975 (US 87078).

1282. Dunn wrote an internal memorandum to Seligman dated March 21, 1980, describing Philip Morris's "Nicotine Receptor Program," an internal company research program focusing on the psychopharmacology of nicotine. The research was "aimed at understanding that specific action of nicotine which causes the smoker to repeatedly introduce nicotine into his body." While Dunn stated that the nicotine research would likely produce "significant scientific developments," he noted that it was "a highly vexatious topic" that company lawyers did not want to become public because nicotine's drug properties, if known, would support regulation of

tobacco by the FDA. Dunn wrote, "Yet this is where our attorneys least want us to be." Moreover, lawyers were concerned that new "knowledge of nicotine" might permit "therapeutic breakthroughs to reduce the incidence of smoking." 0000127789-7792 (US 35152).

1283. Consequently, Dunn observed that while Philip Morris would continue its research program "to study the drug nicotine, we must not be visible about it." And while the program depended on a "heavy commitment" by Philip Morris, Dunn wrote that "our attorneys, however, will likely continue to insist on a clandestine effort in order to keep nicotine the drug in low profile." Dunn mentioned Shook, Hardy & Bacon's Don Hoel and Jacob & Medinger's Ed Jacob by name in his memorandum. 0000127789-7790 (US 21794).

1284. A March 16, 1983 memorandum from researchers James Charles and Victor DeNoble concerning their critiques of the Public Health Service's Report titled "Why People Smoke" acknowledged that Philip Morris had research results with implications contrary to the company's publicly stated opinions on nicotine, but that Philip Morris had not disseminated those findings publicly: "Recent experiments in Vic's [DeNoble's] project have shown that there is a behavioral component to tolerance (a learned phenomenon), but this work has not been published." 1005061346-1346 (US 20199). This was the work, described below, led by Drs. DeNoble and Mele. Mele WD, 11:6-15:4.

1285. Under the guidance of Drs. DeNoble and Mele, the Philip Morris Biochemical Research Division developed an important method for demonstrating that rats press levers and will work for nicotine. Such studies had been done earlier with monkeys, but there had not previously been a good rat model. Philip Morris was one of the first to develop a valid rat model for nicotine intravenous self-administration. As outlined infra, Philip Morris prevented the

publication and presentation of this important new work, claiming the methodology was flawed. Henningfield WD, 161:23-167:6; DeNoble WD, 17:1-18:6, 22:6-23:18, 39:12-45:11; Mele WD, 20:3-22:12, 28:13-32:4.

1286. Drs. DeNoble and Mele had also demonstrated, by administering nicotine to rats, the existence of both physiological and behavioral tolerance to nicotine. Mele WD, 11:6-13:5. Behavioral tolerance -- when tolerance develops to a behavioral effect of a drug -- had not been shown prior to this research. Id. at 12:16-13:10. When Dr. Mele sought to publish this groundbreaking research in 1983, Philip Morris informed him that the tolerance study could not be published "because the study showed tolerance and physical dependence to nicotine." Id. at 14:2-10. Instead, Philip Morris would only allow Dr. Mele to write for internal consumption. Id.; 1000413881-3964 (US 20100).

1287. Shook, Hardy & Bacon commented on an unpublished manuscript from Drs. DeNoble and Mele titled "Development of Behavioral Tolerance Following Chronic Nicotine Administration," that "[t]he bottom line is that the authors are maintaining that there is tolerance to nicotine, which involves both behavioral and physiological factors." The memorandum noted that such a finding would be detrimental to the cigarette industry:

> It is obvious that such a report has undesirable implications for smoking and health litigation. Tolerance is frequently cited as one of the hallmarks of addiction. It is the industry's position that one of the classic criteria for addiction is tolerance, and that such has not been demonstrated in the case of nicotine. While it is true that the Mele and DeNoble paper does not discuss smoking in particular or attempt to extrapolate their experimental findings beyond the laboratory, there is nevertheless the implication simply by the fact that Philip Morris is doing this research, that it is viewing this research as relevant to smoking behavior.

2021424402-4412 at 4404-4405 (US 22847).

1288. In the same memorandum, Shook, Hardy & Bacon pointed out the legal implications of the "unfavorable" Philip Morris internal nicotine research:

> Research engaged in, as well as some possibly under consideration, by Philip Morris has undesirable and dangerous implications for litigation positions the industry takes in regard to smoking behavior. The pharmacological nature of the research implies strongly a view of the importance of nicotine. What is worse, research reports under Philip Morris' sponsorship contain claims of unequivocal demonstrations of reinforcement by nicotine in animals. This kind of research is a major tool of our adversaries on the addiction issue; the irony is that industry-sponsored research is honing that tool. In the final analysis, the performing and publishing of nicotine related research clearly seems ill-advised from a litigation point of view.

2021424402-4412 at 4412 (US 22847); 2021423403-3461 at 3422 (US 87038*).

1289. The intravenous self-administration rat model is considered a classic indicator that a substance has abuse potential. Using that model, and the same procedure that NIDA used to demonstrate abuse potential, the Philip Morris DeNoble study demonstrated the abuse potential of nicotine. DeNoble WD, 17:9-20:2; See also, 2023963269-3341 at 3312-2213 (US 20398) (DeNoble testimony at 1994 Waxman hearings).

1290. DeNoble's rat studies on self-administration and tolerance succeeded where others had failed and clearly were very significant at that point in history. DeNoble WD, 17:9-18:6. As DeNoble explained in his testimony before the Waxman Subcommittee in 1994:

> The work that we did with nicotine was clearly some years ahead of the external community, scientific community. It wasn't until 1989 that Bill Corgal (sp) demonstrated that nicotine would function as an intravenously delivered reinforcer for rats, using the same models that I used -- that Paul [Mele] and I used. The work that we did on self administration, on dependence, on tolerance, on

> frustration, clearly would have moved the scientific community much further along than it had been moved by that work not getting out.

2023963269-3341 at 3285 (US 20398). This assessment echoes Dr. Henningfield's view about the adverse impact that Philip Morris's concealment had on the scientific research community. Henningfield WD, 162:10-167:6.

1291. DeNoble's research colleague at Philip Morris, Dr. Paul Mele, also agreed with this analysis in his testimony before the Waxman Subcommittee in 1994:

> . . . [S]ome of these studies were the first to be done with nicotine. I have no doubt that other people would have performed these studies subsequently just as has been done recently in Toronto. But they weren't being done at the time, and to quote a recent review article in Science . . . it basically took six or seven years for the nicotine self-administration model to be developed and come out. Whereas, it would have been out much earlier had this work been allowed to go out and stay out.

2023963269-3341 at 3286 (US 20398).

1292. Philip Morris management fully appreciated the scientific significance of the DeNoble rat self-administration nicotine study. At first, Dr. DeNoble obtained approval to submit it to a leading peer review scientific journal, Psychopharmacology, and there were plans to present results of the study at the 1983 American Psychological Association meeting in Anaheim, California. 2023963269-3341 at 3303 (US 20398).

1293. Prior to publication, at a 1982 presentation at corporate headquarters on the activities of the behavioral pharmacology laboratory including the results of the rat self-administration nicotine study, DeNoble was asked only one question, by the President and CEO of Philip Morris, Ross Millhiser: "Why should I risk a billion-dollar industry on rats pressing a

lever to get nicotine?" DeNoble WD, 24:8-25:1.

1294. The saga of the Philip Morris Nicotine Program is summarized in detail in a lengthy 1992 document prepared by outside counsel Shook, Hardy & Bacon titled "Philip Morris Behavioral Research Program." In this report, counsel describe many aspects of the program and cite specific documents showing a major internal research initiative that lasted from 1969 to 1984, involving many scientists, including DeNoble and Mele. The report makes clear that the program generated results and was still generating data in 1984 related to nicotine receptors, analogs, peripheral nervous system effects, central nervous system effects, effects on animal behavior, and differences between high nicotine delivery and low nicotine delivery cigarettes. 2021423403-3497 at 3408-3409 (US 36743).

1295. In a July 27, 1983 letter to the head of Philip Morris, Shook, Hardy & Bacon attorney Patrick Sigrid summarized the nicotine research being conducted by DeNoble and recommended its suppression. 2046754720-4731 (US 20476).

1296. In April 1984, a few months after a top Philip Morris executive and lawyer visited the behavioral pharmacology lab, DeNoble's laboratory was suddenly, with no warning, preparation, or explanation, shut down and the animals killed. DeNoble WD, 38:4-16, 39:3-9; Mele WD, 25:19-26:21. In DeNoble's own words, "[O]ur laboratory was terminated in one day." 2504099642-9666 at 9660 (US 22708).

1297. Subsequently, DeNoble was told by several representatives of Philip Morris management that his lab was producing information that the company did not want generated internally. As DeNoble testified at a Congressional hearing:

> Apparently, at that same time, some litigation had come out, some

> law suits, and we were told that the data we were generating, the types of studies that we were doing would not be favorable in that litigation. . . . They just said that if the work were removed from the company connecting it back to the company would be, you know, more difficult to do than if it's being done right in the company itself.

2023963269-3341 at 3305-3306 (US 20398); See also, DeNoble WD, 38:12-14.

1298. In 1986, Dr. DeNoble and Dr. Mele presented their findings on behavioral tolerance development to nicotine in rats to the Federation of American Societies for Experimental Biology in St. Louis, Missouri. In April that year, Philip Morris Companies Assistant General Counsel Eric A. Taussig sent each scientist a letter which stated in part:

> As you are aware, upon your employment at Philip Morris . . . you signed an agreement (a copy of which is enclosed) requiring you to keep confidential, unless expressly permitted otherwise, research developed while an employee of the Company. The disclosure of such information as a result of your employment at Philip Morris without permission constitutes a breach of your agreement with the Company. In the future, you are expected to comply with the terms of the agreement.

DeNoble WD, 39:12-42:20; Mele WD, 28:13-30:22; 2047340350-0350 (US 22772); 2077541354-1354 (US 44603).

1299. DeNoble perceived this letter to be a threat of future litigation. In a September 10, 1986 letter, Taussig again threatened DeNoble and Mele with litigation if they published, or presented, their findings on nicotine self-administration and brain effects, accusing DeNoble of disclosing "information relating to research on a project titled 'Brain Sites Involved in the Mediation of Behavioral Effects of Intraventricularly Administered Nicotine." Taussig wrote that Philip Morris was aware that they had on two occasions already presented the results of their nicotine research, allegedly in violation of their employment termination agreement. He

informed them that "the Company cannot tolerate this type of conduct," and reiterated that "if you wish to publish or otherwise utilize research from Philip Morris, you must request and receive permission from the Company." He ended the letter by stating that "[a]ny further breach of your agreement will result in action being taken." 2023192361-2362 (US 20380). DeNoble was released from his confidentiality agreement with Philip Morris in 1994. DeNoble TT, 1/6/05, 9043:19-23.

1300. An April 1994 Shook, Hardy & Bacon report titled "Philip Morris Research of Nicotine Pharmacology and Human Smoking Behavior" pinpoints exactly which research was never made public and the relationship of that research to Philip Morris products. When describing the "Nicotine/Acetaldehyde" research conducted by DeNoble in 1982, research that showed that acetaldehyde and nicotine functioned as "positive reinforcers," the Shook, Hardy & Bacon report admitted that the research was never published:

> CAVEAT: This research has never been published. There is nothing in the literature regarding the synergistic effects of nicotine and acetaldehyde. In addition, see description below re: Frank Ryan data on predicting sales.
>
> Upon learning that acetaldehyde functions as a positive reinforcer, they endeavored to study the combined effects of nicotine and acetaldehyde on self-administration. Results indicated that reinforcing effects of these agents are additive.
>
> Research done by Frank Ryan indicated that acetaldehyde and nicotine data could be used to predict cigarette sales at a 96% accuracy. . . . Frank Ryan ran a program and was able to predict blindly which cigarettes would sell and which wouldn't based on the combination of nicotine and acetaldehyde delivery.

2046819241-9268 at 9249-9250 (US 85265*).

1301. In a later section of the 1994 report, Shook, Hardy & Bacon described how

nicotine research undermined Philip Morris's public position denying addiction, and could invite regulation by the FDA:

> D. Why Was Research Stopped
>
> 1. Sensitivity. [CAVEAT: Significance is self-evident.]
>
> According to DeNoble, "we were the only tobacco company that I knew of, or that anybody else knew of, doing work with whole animals, live whole animals, and because of the nature of the research, that is, looking at self-administration, looking at the effects of nicotine on the brain function, the research was held restricted to upper management only."
>
> DeNoble discussed the effect of his research on the company with Dr. Charles, Dr. Osdene, Dr. Pages, Mr. McDow, Max Hausermann, Mr. Pollock, and Jim Remington. . . . "The downside was that we were doing whole animal research, which looked to them like we were doing Federal Drug Administration [sic] research."
>
> DeNoble understood that the research he was doing could undermine the public posture Philip Morris was taking with outsiders.
>
> DeNoble discussed with Jim Charles and Tom Osdene the potential damage to the company of continuing animal research.

2046819241-9268 at 9256 -9257 (US 85265*) (citations omitted).

1302. The 1994 Shook, Hardy & Bacon report also acknowledged the sudden DeNoble "Laboratory Shutdown," adding "[CAVEAT: Significance is self-evident.]." The report then acknowledges that DeNoble's research was suppressed: "[H]e was not allowed to publish the research regarding the effects of nicotine and acetaldehyde." This occurred "after a letter from Shook, Hardy to the Philip Morris Legal Department and discussions between [attorney] Alex Holtzman and [scientist] Jim Charles." 2046819241-9268 at 9258-961 (US 85265*).

1303. None of the results or conclusions from the Philip Morris Nicotine Program or Behavioral Research Program were made public or were included in Philip Morris's and the industry's collective submission to the FDA in 1996. In fact, Volume III of the industry's "Comments" deny FDA assertions that research existed showing that nicotine is addictive. 2505597781-7998G (US 23028*).

1304. Philip Morris was not only interested in suppressing research that suggested nicotine addiction, but consumer products that combated nicotine addiction as well. In 1984, Philip Morris became aware that one of its major suppliers of a humectant (a chemical added to tobacco to keep it moist), Merrell Dow Pharmaceuticals, was marketing a new smoking cessation gum called Nicorette. Philip Morris understood the threat Nicorette posed, namely allowing nicotine-addicted smokers to quit, and took action:

> Dow was told that we were discontinuing all humectant purchases because of Dow-Merrell's attack on cigarette smoking associated with the introduction of Nicorette, a nicotine-containing prescription chewing gum which reportedly aids patients in quitting smoking. . . .
>
> Through a series of meetings over the past few years, Dow had been repeatedly advised of our displeasure over the anti-smoking nature of Dow-Merrell's Nicorette Program. . . . Dow was informed that the recent spate of activity can only be interpreted as a conscious corporate decision that Nicorette is more important than the Philip Morris (and other tobacco) business. That is, they cannot realistically expect a customer to spend millions of dollars for materials, when the profits from those sales, directly or indirectly, are used to attack that customer's product and perhaps reduce the customer's sales.

2023799799-9800 at 9799 (US 26801).

1305. Philip Morris's representatives met with Merrell Dow on several occasions and

attempted to shut down the marketing and sale of Nicorette. An October 25, 1984 Philip Morris document recorded the following threat at one of the Philip Morris/Dow meetings: "It was reiterated that Dow had been a superior supplier and that we desired to maintain our relationship. However, future purchases would be predicated on Dow's performance as a supplier as well as the course of the Nicorette program." 2023799801-9802 at 9802 (US 37048); Henningfield WD, 167:7-168:22. See also 2023799804-9804 (US 26802); 2023799803-9803 (US 37049).

**b. BATCo**

1306. BATCo's efforts to conceal the nicotine research it carried out at Battelle Labs dates back to at least 1963. In a May 29, 1963 letter to the Tobacco Research Council ("TRC"), the English equivalent of CTR, Sir Charles Ellis enclosed several nicotine research reports, but stated that the BATCo Board "wish me to ask you that these reports should be kept strictly confidential" by the TRC executive committee. Ellis's letter is marked "STRICTLY PERSONAL AND CONFIDENTIAL." 105620759-0761 (US 85387).

1307. In an October 25, 1978 memorandum titled "Notes on BAT/ITL Joint Meeting," Ed Jacob, a longtime tobacco industry counsel in the United States, advised that there be "a total embargo on all work associated with the pharmacology of nicotine and the benefits conferred by smoking for three reasons," including "a pending California lawsuit which indicted nicotine as an addictive substance," and another lawsuit "against [HHS Secretary] Califano to show cause why tobacco should not be brought under the powers of the FDA." 110083647-3650 at 3649-3650 (US 76174).

1308. At a February 16, 1983 meeting of tobacco company directors, attended by Manny Bourlas of Philip Morris, L.C.F. Blackman, a BATCo board member and former head of

research, and representatives from several European tobacco companies, the participants discussed how to respond to the impending Independent Scientific Committee on Smoking and Health ("ISC") Report. The participants agreed that the tobacco industry should not cooperate with the ISC and should respond to government requests by falsely stating that it had no relevant expertise. The participants agreed on the need to avoid any "sensitive" studies, including research into nicotine's role in "perpetuating the smoking habit":

> 3. The effect of nicotine at the levels achieved through smoking. While animal experiments could probably be designed to study the effect of nicotine (either by itself or as 'spiked' additions) our response to the ISC should be that we have nothing to offer. The little information we have is already in the public domain, and we have no idea as to a worthwhile research programme . . .
>
> 5. The role of nicotine, at the relevant lower range of nicotine dosage, in perpetuating the smoking habit. While much information already exists in the literature (Russell, Ashton and Stepney etc) this is a particularly sensitive area for the industry.
>
> If any future study showed that nicotine either was, or was not, associated with perpetuating the smoking habit, industry could well be called upon to reduce or eliminate nicotine from the product. (A heads we lose, tails we cannot win situation!)
>
> We must not become involved in any collaborative study with the ISC.

109840698-0702 at 0699-0700 (US 21733) (emphasis in original).

**c. Brown & Williamson**

1309. In 1963, as the following facts demonstrate, B&W, acting in concert with its parent BATCo and RJR, concealed nicotine and addiction research from the Surgeon General's Advisory Committee, which was then in the process of preparing the Surgeon General's 1984 Report on smoking and health.

1310. The 1959-1964 BATCo nicotine research, carried out under code names "MAD HATTER," "HIPPO," and "ARIEL," was provided to B&W. This was research that, in the words of BATCo's lead scientist Sir Charles Ellis, was designed to determine "what constitutes the hold of smoking, that is, to understand addiction." 301083820-3835 at 3826 (JE-46579). Ellis also acknowledged that the BATCo secret nicotine research gave the industry "knowledge of the effects of nicotine far more extensive than exists in published scientific literature." 301083820-3835 at 3828 (JE-46579).

1311. Moreover, B&W executives were present at a 1962 BAT research conference where Ellis declared the group's position that "smoking is a habit of addiction." This copy of the conference report is stamped "Property of Brown & Williamson Research Department." 650344433-4493 at 4439 (US 53468).

1312. PROJECT HIPPO I was completed in January 1962, finding that rats developed tolerance to nicotine and that nicotine shared many similarities with tranquillizers. The final report on PROJECT HIPPO II, dated March 1963, concluded that nicotine had many more beneficial physiological effects than tranquillizers, benefits that support "the pleasure of smoking" and lead to withdrawal. 105620620-0683 (US 20247); 105620569-0605 (US 20246).

1313. General Counsel Addison Yeaman, in a "STRICTLY PRIVATE AND CONFIDENTIAL" memorandum dated July 17, 1963, reviewing PROJECT HIPPO I and II, agreed that "nicotine is addictive" and that "we are in the business of selling nicotine, an addictive drug." Yeaman also advised that the company should develop filtered products that still delivered the necessary "nice jolt of nicotine." 682764441-4461 at 4455 (US 21030).

1314. On May 14, 1963, B&W's President William S. Cutchins received a request for

information from the Surgeon General's Advisory Committee regarding smoking and health matters. In a response to the Assistant Surgeon General James Hundley, Cutchins simply stated that B&W contributed to smoking and health research via its contributions to the TIRC. 680249780-9781 (US 85390); See also, 680249799-9799 (US 85389). No information about PROJECT HIPPO I or II was supplied.

1315. Cutchins' letter was the carefully crafted product of industry legal advice. In a letter dated May 6, 1963, to B&W in-house counsel DeBaun Bryant, outside counsel J.M. Johnson recommended that the company respond to the Surgeon General's Advisory Committee in an intentionally vague and confusing manner:

> I am of the further opinion that any description in the letter to the Committee of the methods and steps involved in the various scientific research programs conducted by Brown & Williamson must necessarily be so vague and incomplete as to be irksome to the reader. . . . Therefore, it is my suggestion that we state simply that we have conducted no medical research, having left that to TIRC. . . . I repeat it is unfortunate that Brown & Williamson must submit anything, but this approach seems to me to be the most innocuous of the alternatives.

680249785-9786 (US 85391)).

1316. Johnson concluded his letter with the advice that B&W's submission to the Surgeon General's Advisory Committee must protect the company's litigation position, and must contain only material that had already been published: "From a litigation standpoint I believe it is axiomatic that it is best to submit the least scientific material possible consonant with the objective of not irritating the Committee. As I mentioned on the telephone I would prefer to see only previously published material submitted . . . ." 680249785-9786 (US 85391).

1317. In a June 19, 1963 document titled "Note for Mr. Cutchins," BATCo president Ed

Finch told his counterpart at B&W that BATCo had sent B&W copies of all the BATCo-sponsored nicotine research conducted at the Battelle Labs. Finch stated that because the reports were "sound piece[s] of research . . . it might be desirable to get them submitted to the U.S. Surgeon General's Committee." Finch also informed Cutchins that the Tobacco Research Council in Britain was sending copies of the nicotine research reports to the TIRC (CTR's predecessor) as well, "with a request that they consider whether it would help the U.S. industry for these reports to be passed on to the Surgeon General's Committee." 689033429-3429 (US 54274).

1318. A letter from BATCo's Sir Charles Ellis to B&W's Yeaman ,dated June 28, 1963, recalled that B&W had already received the "HIPPO" research reports, and enclosed the May 1963 BATCo report from Dr. Haselbach titled "A Tentative Hypothesis on Nicotine Addiction." MTP0013569-3569 (US 76159).

1319. The "Tentative Hypothesis" document, quoted in detail at Section V(B)(3)(c)(¶1009), supra, closed with the following: "In conclusion, a tentative hypothesis for the explanation of nicotine addiction would be that of an unconscious desire to restore the normal physiological equilibrium of the corticotropin releasing system in a body in which the normal functioning of the system has been weakened by the chronic intake of nicotine." 536480912-0914 (US 20928).

1320. BATCo also forwarded its report titled "The Fate of Nicotine in the Body" to B&W under cover letter from Sir Charles Ellis to chairman Bill Cutchins (stamped "Received") on July 1, 1963. In his cover letter, Ellis wrote:

> I feel sure you will agree that a knowledge of the fate of nicotine in

> the body is a necessary accompaniment to studying the physiological effects that nicotine can produce. I hope you will be interested in the experiments which in my opinion add considerably to the published knowledge in this subject.

689033419-3419 (US 54271).

1321. At some point in 1963, B&W was considering providing BATCo-funded Battelle Labs research on the addictiveness of nicotine to the Surgeon General prior to the first Report on Smoking and Health in 1964. B&W changed its mind, as evidenced by a July 3, 1963 cable to BATCo Chairman A.D. McCormick, in which B&W General Counsel Addison Yeaman stated his intention to withhold the research results from the Surgeon General:

> Hoyt of TIRC agreed to withhold disclosure Battelle report to TIRC members or SAB until further notice from me. Finch agrees submission Battelle or Griffith developments to Surgeon General undesirable and we agree continuance of Battelle work useful but disturbed at its implications re cardiovascular disorders. . . .
> We believe combination Battelle work and Griffith's developments have implication which increase desirability [of] reevaluation [of] TIRC and reassessment fundamental policy re health.

689033422-3422 (US 22734).

1322. BATCo and B&W shared their PROJECT HIPPO I and II reports with RJR General Counsel Henry Ramm and outside industry counsel Ed Jacob. In an August 5, 1963 letter from B&W General Counsel Addison Yeaman to Ramm and Jacob, B&W enclosed "herewith the three volumes of "Project HIPPO I and II." 689033411-3416 (US 31044).

1323. There is no evidence that the report or its findings were ever shared with the Surgeon General’s Advisory Committee. Despite BATCo and B&W's keen interest in nicotine and its impact on smokers' bodies and the extensive research Battelle Labs had conducted for BATCo, B&W never disclosed to the Surgeon General its knowledge that nicotine was addictive,

or the research it possessed showing craving, tolerance, withdrawal, and the many physiological effects of nicotine on the body.

1324. The Surgeon General's Report was published in January 1964. The Report did not identify nicotine as an "addiction," finding instead that nicotine was a "habit." This finding was based on the Surgeon General's Advisory Committee's conclusion (1) that smoking created a "desire" but not a "compulsion;" (2) that smoking did not result in a "tendency to increase the dose;" and (3) that smoking did not create a psychological and physical dependence on nicotine. Report of the Surgeon General (1964) at 350-51, VXA1601844-2232 (US 64057).

1325. These findings of the Surgeon General's Advisory Committee, and the Report's ultimate characterization of smoking as a "habit" instead of an "addiction," were in direct conflict with the extensive and sophisticated nicotine research in the possession of B&W in 1963 -- research which was intentionally kept from the Advisory Committee. Moreover, the 1964 finding of "habituation" is in conflict with the internal consensus of opinion at both BATCo and B&W, as stated by Sir Charles Ellis, Addison Yeaman, and company scientists, that nicotine and smoking produced an "addiction," not a mere "habit."

1326. There is certainly a possibility, although it is impossible to say from hindsight, that had the Surgeon General's Advisory Committee had full knowledge of Defendants' research and the conclusions to be drawn from such research, his 1964 Report may have accurately identified nicotine as addictive long before that conclusion was reached 14 years later in 1988. Henningfield WD, 114:13-122:19.

1327. In later years, B&W limited its involvement in nicotine research to studying the effects of nicotine on the central nervous system, work done in Europe under BATCo's

supervision. This was done, as the following facts show, because of B&W's concern that research demonstrating nicotine addiction or dependence contradicted the industry's public position and might lead to regulation.

1328. Following a visit to B&W in October 1979, BATCo scientist D.G. Felton described the situation as follows:

> There is said to be a general nervousness in the U.S. Tobacco Industry (apart from Philip Morris) in working on the effects of nicotine, because of the risk of demonstrating nicotine dependence or addiction. There are fears that this would result in the Industry coming under the Food and Drug Administration. This view was given me both by the CTR administration and separately by [outside industry counsel] Mr. Tim Finnegan. In the latter's opinion, any work concerned with the central effects of smoking or of nicotine would run this risk legally.

650032772-2786 at 2783-2784 (US 85385).

1329. In an August 16, 1984 memorandum to BATCo counsel Earl Kohnhorst, B&W Senior Vice President and General Counsel Ernest Pepples advised against the use of a report by BATCo scientist R.P. Ferris titled "The Functional Significance of Smoking in Every Day Life" because of the report's concession that "many potential criteria for addiction identification are met by smoking behavior," and its reference to smoking as "one form of 'drug usage', 'psychoactive substance usage,' or 'psychoactive drug usage.'" Pepples called any use of the report by the company "not appropriate or advisable." 682015254-5255 at 5254 (US 23022); 650000563-0740 (US 85393).

1330. In his memorandum to Kohnhorst, Pepples described the "more serious problems" with the Ferris report, which referred to nicotine as a drug, admitted "tolerance and withdrawal," and concluded that the pharmacological effect of nicotine is the "primary motivation" for

smoking. Overall, Pepples was very concerned that the report would be used in litigation as evidence that cigarette smoking is addictive, and as a basis for regulation by the FDA. 682015254-5255 (US 23022).

1331. B&W's efforts to block the presentation or use of Ferris's study went further. Soon after, in an August 28, 1984 letter to BATCo deputy chairman Ray Pritchard, Pepples expressed B&W's objection to using the study, its concern that the Ferris study could seriously harm the industry, and its recommendation that BATCo legal counsel be involved in the planning of further research and drafting of reports related to nicotine and addiction. In his letter, Pepples implicitly asked Pritchard to conceal the Ferris study, and stop Ferris from making a presentation on the report at an upcoming research conference, in light of "the current legislative and litigation environment in the U.S." and "the possibility for involvement by the U.S. Food and Drug Administration." Pepples explained that the industry needed to oppose any concessions that nicotine and smoking are addictive "in order not to give a claimant an unjustified weapon to use against the company or the industry." 680583069-3070 (US 23024).

1332. As in his earlier memorandum to Kohnhorst, Pepples' letter to Pritchard expressed "great concern" about Ferris's report because it conceded that smoking is addictive. Pepples did not deny any of Ferris' observations or conclusions regarding nicotine and smoking; indeed, he admitted that Ferris' use of authorities and references was "generally accurate." Fearing involvement by the FDA, Pepples then recommended closer involvement by lawyers in scientific projects in the future. He wrote:

> [T]he report seems to concede that many potential criteria for addiction identification are met by smoking behavior. For example, the report urges the position that the primary motivation

> for smoking is ultimately tied to a pharmacological "psychoactive" function of nicotine. . . .
>
> Throughout the report, unfortunate concessions appear regarding "tolerance and withdrawal." The report frequently expresses that smoking has certain "therapeutic properties" and nicotine is compared to the action of tranquilizers, alcohol, etc. In addition, smoking is referred to as one form of "drug usage," psychoactive substance usage," or "psychoactive drug usage."
>
> As you know in the current legislative and litigation environment in the U.S., claims of addiction have been and will be used against Brown & Williamson by our adversaries. Such claims have been vigorously opposed in order not to give a claimant an unjustified weapon to use against the company or the industry.
>
> In addition, the possibility for involvement by the U.S. Food and Drug Administration would be heightened by company or industry promotion of the theme of this report, as it will be generally perceived.
>
> If such matters as the “Functional Significance” document and the Conference binders, enclosed herewith, are not already routinely vetted with BATCo lawyers, you may want to consider involving them more closely in both the conceptual and the drafting stages of these projects. Thank you very much for your help in this area of great concern for us.

521016786-6786 (US 22129).

1333. With respect to the Ferris report, B&W attorney J. Kendrick Wells emphasized in a November 12, 1984 letter to BAT attorney Anne Johnson why the BAT study must not be publicized:

> A plaintiff in a smoking and health products liability lawsuit in the U.S. could use the paper to support its argument that smoking is difficult to quit ("Addiction"). The plaintiff could argue that the paper contradicts the voluntary assumption of risk defense. It is doubtful whether editing can transform the paper into one which would not be helpful to the plaintiff in a products liability action.

680583045-3045 (US 85395).

1334. Around this same time, B&W intervened to edit adverse references to addiction out of another BATCo report, titled "The Controversy on Smoking and Health -- Some Facts and Anomalies" by BAT scientist Dr. L.C.F. Blackman. By letter dated October 25, 1984, B&W attorney J. Kendrick Wells wrote BATCo counsel Alec Morini that "review" of BATCo publications by B&W was necessary in light of ongoing smoking and health litigation; Wells went on to provide 45 paragraphs of revisions to Blackman's draft report in a marked-up report These included:

> 2. Delete Donald Gould reference. The article identifies cigarettes as a drug.
>
> 3. Delete reference to Dr. W.S. Cain. The article identifies short term and longer term pharmacological and physiological factors as important in the derivation of "habitual cigarette smoking" . . . .
>
> 5. Delete. The point made here might be said to run counter to arguments that cigarette smoking is not addictive . . . .

680582499-2507 at 2500 (US 54052).

1335. The three paragraphs referenced above bearing adversely on the company's position on addiction were ultimately stricken from the report. 107332541-2574 at 2545 (US 26281); compare to 680582512-2512 (US 85396).

1336. In a May 10, 1994 B&W press release, the company made the following claims -- claims that are patently false in light of the company's pre-1964 acknowledgment that nicotine is addictive and the company's decision not to disclose to the Surgeon General BATCo’s internal nicotine research showing addiction prior to the 1964 report:

> It has always been B&W's position -- and still is -- that cigarette smoking is not addictive under the standards set forth in the 1964 Surgeon General's Report. Calculated misrepresentations of the company's position merely encourage ill-informed grandstanding.
>
> Brown & Williamson was acknowledged by the Surgeon General for its "substantial cooperation and assistance" in connection with the 1964 Report. Contrary to the recent media reports, B&W had not concluded that cigarette smoking was addictive prior to the release of the 1964 Report.

202337394-7394 (US 21965).

**d. American Tobacco Company**

1337. American attempted to keep its limited nicotine research hidden as well. For example, in a September 16, 1938 letter, H.R. Hanmer of American's R & D Department informed George W. Hill, an American Vice President, that research performed on dogs had demonstrated an increase in blood pressure due to the cigarette's nicotine. Mr. Hanmer added that while this was "very clear-cut biological evidence," "nothing of this sort could ever be used in presenting facts to the public." MNAT00115492-5499 (US 21401).

**e. Tobacco Institute**

1338. The Tobacco Institute attempted to ensure that any potentially adverse nicotine and addiction research would not be performed. In a May 17, 1983 memorandum from Fred Panzer to David Henderson, Panzer wrote that certain legislation needed to be amended to make it favorable to the industry by preventing addiction research: "We need language for a rider to the appropriation bill for the National Institute on Drug Abuse (NIDA) that would prevent the use of appropriated funds for a study of the addictive properties of tobacco." TIME 370968-0968 (US 62769).

### f. CTR and Other Defendant Funded Research Groups

1339. CTR-selected and funded nicotine research was intended to be favorable to the industry. See Sections III(C)(2) and III(E)(2-3), supra. Lawyers played an important part in carefully considering all nicotine and "psychopharmacology" research before it was started to insure it would stay "pro-industry." Id. Nicotine/behavioral research was discussed by the CTR Director and industry counsel at a July 28, 1976 meeting of the industry Research Liaison Committee, where long-time industry counsel Dave Hardy (of Shook, Hardy & Bacon), American Tobacco counsel Cyril Hetsko, and others commented:

> Hetsko: Concerned that such a study [on the benefits of smoking] might play into hands of F.T.C. subpoena fishing for information [regarding] smoker motivation. Would like to see conference proposal checked out before we go ahead. This program goes beyond the organizing committee and should be considered by "committee of counsel."
>
> Hardy: Smoking behavior should be part of C.T.R. program as long as it is not "pro-company" but is kept "pro-industry."
>
> Hetsko: No problem if it is generated by SAB. This is a totally different area from what SAB has been dealing with. Doesn't want another book "to haunt us," as the one from the "Caribbean Caper" did.
>
> Yeaman: We take our direction from our members – the industry members. C.T.R. so far is clean of F.T.C. investigation, except possibly for the St. Martin conference.
>
> Hardy: Dr. Gardner should proceed with planning but not take any action.
>
> Hetsko: Decision for action should be made by lawyers, not C.T.R. or Organizing Committee. Chronologically, this meeting might be occurring just at a time that some of these experts are also being questioned by F.T.C. about motivation. This convergence might result in intensification of the conflict. Suggests Dr. Gardner

> present his program for review by all the lawyers. No records of such a review are to be kept.

1003719175-9179 (US 86406).

1340. The book from the "Caribbean Caper" that, according to Hetsko, "haunted" the tobacco industry, was a book edited by Philip Morris's Dunn and titled "Smoking Behavior: Motives and Incentives." The book was the result of the 1972 nicotine conference on the Caribbean island of St. Martin, where Dunn recalled that, "The majority of the conferees would go even further and accept the proposition that nicotine is the active constituent of cigarette smoke. Without nicotine, the argument goes, there would be no smoking." 2023193286-3304 at 3289 (US 22967). See discussion at Sections III(E)(2)(b)(¶¶264-265) and V(B)(3)(a)(¶¶903-905), supra.

1341. The book contained some outside researchers' views that smoking and nicotine had characteristics suggesting addiction. For example, Murray Jarvik's article in the book acknowledged evidence that nicotine was "the chemical underlying the smoking habit," and stated his personal opinion that "nicotine is the reinforcing agent in smoking." Another writer, Caroline Thomas, recognized "addictive smoking" as one type of smoking. A third author, Neal Miller, alluded to "anecdotal evidence" that nicotine administration in rats leads to withdrawal symptoms. The conference and the book were sponsored by CTR. LD90011031-0330 (US 87320).

1342. In November 22, 1977, CTR Associate Research Director Donald H. Ford stated the following with respect to nicotine in a proposal for in-depth CTR-funded nicotine research:

> [I]t now seems evident that nicotine, like narcotics, influences the CNS in multiple ways involving effects related to most known

> neurotransmitters Further, the dependence which develops tobacco in humans (and withdrawal symptoms during the cessation of smoking) and the degree of tolerance to nicotine which occurs in certain animal paradigms strongly suggest that nicotine is a habituating agent.

1000041912-1918 at 1912 (US 20073).

1343. Dr. Ford presented his nicotine observations at a November 1977 CTR meeting. His proposed avenues of research related to "Receptors and sites of nicotine action," neurochemical studies, the effects of nicotine on fetal development, neuroendocrinology, and behavioral responses to nicotine. Id.

1344. In response to Dr. Ford's presentation and other CTR nicotine research, Philip Morris's Tom Osdene wrote to Robert Seligman on November 29, 1977, that "we are in the process of digging our own grave." He wrote further: "I am very much afraid that the direction of the work being taken by CTR is totally detrimental to our position and undermines the posture we have taken to outsiders." 2022246952-4952 (US 36865).

1345. Janet Brown, long-time outside industry counsel for American, reported on Ford's CTR research in her minutes of a February 1, 1978 meeting of industry counsel. Her detailed notes of the meeting revealed Defendants' knowledge about the importance of nicotine for smoking, and the importance of stopping Ford's nicotine research, when she discussed her opposition to Ford's central nervous system study. She wrote that while CTR President Addison Yeaman told her that Ford's nicotine research, which included the goal of finding a "nicotine blocker or substitute," was "mere speculation," she nonetheless responded as follows:

> I said the “speculation” was dangerous and the work had some important commercial implications. A nicotine “blocker” or “substitute” could put the industry out of business overnight. Any

> information about it, or about CNS reasons “why people smoke,” reaching one member before the others could give that member an enormous competitive advantage in developing a 'blocker' for the “blocker,” or in producing a “substitute” product, or a purely “tranquilizing” or purely stimulant product. I do not know what all the commercial ramifications are, but they suggest themselves to me as vast. These are arenas that CTR has traditionally steered well clear of and it must continue to do so.

968148608-8639 (US 88840).

1346. Industry counsel quickly made sure that Dr. Ford's proposal never received funding. As recited in the May 10, 1978 notes of the Industry Technical Committee Chairman Preston Leake (scientific director for American) to Arnold Henson (General Counsel for American), the proposed nicotine work was "ruled out" by outside counsel Ed Jacob. 955017148-7154 at 7149-7150 (US 87172).

1347. Philip Morris's Osdene and Seligman met with CTR Directors Gardner and Hockett at CTR in New York on January 5, 1978. Osdene's memorandum of the January 5 meeting states:

> Dr. Seligman brought up the [CTR] grant by Dr. Abood in which one of the stated aims was to make a clinically acceptable antagonist [or blocker] to nicotine. This goal would have the potential of putting the tobacco manufacturers out of business.

1000286213-6214 at 6213 (US 35204).

1348. A series of CTR documents illustrate the attempts, and ultimate failure, of Dr. Avram Goldstein and Dr. Leonard Cornell to obtain CTR funding for a new addiction research facility. Dr. Goldstein's and Dr. Cornell's research specifically proposed an investigation by his Addiction Research Foundation of "nicotine receptors in the brain" and "the mechanism(s) of dependence on nicotine." It was the opinion of CTR chairman Addison Yeaman that "Dr.

Goldstein's scientific credentials are of the highest." Dr. Seligman of Philip Morris was impressed by Dr. Goldstein's objectivity and intelligence. 03740559-0567 (US 88548); 686052326-2335 (US 88549); 686052262-2263 (US 88550); 026474-6475 (US 88551); 1003177412-7413 (US 88552); 1003728001-8007 (US 88554); 686052267-2289 (US 88555); 85681034-1034 (US 88556); 686052258-2259 (US 88557); 686052293-2296 (US 88558).

1349. Despite these views of the scientists' abilities, the industry decided to give no support to Dr. Goldstein, Dr. Cornell, and the Addiction Research Foundation. The rationale for the decision was spelled out in a September 19, 1978 memorandum from C.I. Waite to H.R. Kornegay (of the Tobacco Institute), with copies to Bill Shinn (of Shook, Hardy & Bacon) and Ernie Pepples (of B&W):

> Mr. Cornell's foundation actually assumes tobacco (nicotine) is addictive and costs the U.S. citizen 42 billion dollars a year.
>
> He also believes tobacco causes 300,000 premature deaths each year.
>
> And he wonders if this is why we might not be interested.

686052246-2246 (US 88559).

1350. BATCo scientist D.G. Felton visited CTR in October 1979, where he was escorted by industry counsel Tim Finnegan from Jacob & Medinger. In his typed notes of the trip to CTR, Felton recorded the following:

> I then asked about possible legal problems arising from work on beneficial effects of smoking. In Mr. Finnegan's opinion, any work concerned with central effects of smoking or nicotine would run the risk that FDA would become involved with tobacco, something that was to be avoided, if possible.

100651251-1312 at 1299 (US 85402*).

1351. Shortly thereafter, in a larger meeting with CTR President Yeaman, Scientific Director Gardner, and CTR scientists, Felton also inquired into Leo Abood's nicotine work. He was told of the Defendants' decision to terminate his research given the risk of demonstrating addiction:

> The discussion passed to effects of nicotine and the reasons why CTR did not continue their grant to Leo Abood. There is a general nervousness in the US Industry (apart from Philip Morris) in working on the effects of nicotine, because of the risk of demonstrating nicotine dependence or addiction.

100651251-1312 at 1299-1300 (US 85402*).

1352. A June 20, 1984 memorandum written by Shook, Hardy & Bacon attorney Wendell L. Stone chronicled much of the CTR-funded nicotine research, and concluded that Defendants' termination of Abood's "nicotine receptor" work could be used by plaintiffs "to make a point regarding CTR that when research by its grantees appeared to be incriminating of smoking, then the CTR grants were terminated." 515709297-9340 at 9299 (US 20866).

1353. On the other side of the Atlantic, the industry's Tobacco Advisory Council (TAC), which was the European counterpart of the Tobacco Institute, was also screening research results to ensure that “anti-industry conclusions” were not made public. One particular example will suffice.

1354. Long-time tobacco industry-affiliated/funded scientists Francis Roe and Jeffrey Cohen were asked to prepare a "Nicotine Monograph" in 1977 for the member companies of the Tobacco Advisory Council (including Philip Morris, RJR, and BATCo). 2501160364-0371 at 0369 (US 87173).

1355. Dr. Roe forwarded the first draft of the monograph to D.H. Beese at the TAC

under cover letter dated July 30, 1979, for review by the member companies; BATCo produced a copy of the draft "monograph" and Roe's letter, which stated that "It may well be that parts of the text will need to be expanded and the 'conclusions' section given a new title or omitted. . . . I shall look forward to hearing from you and having a reaction from the Companies in due course." 1000138177-8237 at 8177 (US 87174).

1356. Roe and Cohen stated the following in a draft "Monograph" section titled "Smoking Behaviour: Role of Nicotine in the Smoking Habit":

> There is now increasing evidence that the presence of nicotine may be the major factor responsible for the widespread use of tobacco in all human societies. . . . Whilst smoking fulfils a psychological need in certain individuals it is only the inhaling cigarette smoker who is likely to gain psychopharmacological satisfaction from nicotine and become dependent on it. Nicotine has been described as a psychoactive agent with tranquillizing, antianxiety, stimulant, depressant, antiagression, mood stabilizing and stress-attenuating properties.

1000138177-8234 at 8219 (US 87174).

1357. In the "Conclusions" section of Roe and Cohen's draft "Nicotine Monograph," the authors emphasized that:

> The present worldwide campaign toward low-tar, low nicotine cigarettes faces the problem that nicotine-seeking smokers will need to inhale more smoke to obtain their nicotine requirement and in doing so inhale more tar. . . . Because of the weak absorption of nicotine from buccal and alimentary systems, chewing nicotine gum as a possible alternative vehicle to smoke inhalation would prove much less satisfying to the craving cigarette inhaler .

1000138177-8234 at 8221 (US 87174).

1358. These observations and conclusions did not survive review by the TAC and its member companies. Roe and Cohen's "Nicotine Monograph" was eventually published in 1981

by the TAC on behalf of the tobacco industry under the title "Monograph on the Pharmacology and Toxicology of Nicotine." In the published version of the "Monograph, the "Smoking Behaviour" section quoted above was edited dramatically. The statement that nicotine may be the "major factor responsible for the widespread use of tobacco in all human societies" was deleted entirely. The fact that an "inhaling cigarette smoker" will become "dependent" on smoking was deleted. In the "Conclusions" section, there is no mention of "nicotine-seeking smokers" or the "craving cigarette inhaler." The TAC and its member companies controlled the "Monograph" scientific review, and made sure that Roe and Cohen's document was industry-favorable on the issues of nicotine and addiction. 2021585328-5378 at 5365-5368 (US 87175).

**6. Conclusions**

1359. For approximately forty years, Defendants publicly, vehemently, and repeatedly denied the addictiveness of smoking and nicotine's central role in smoking. They made these denials out of fear that public acknowledgment of what was so well documented and widely accepted internally within their corporate offices and scientific laboratories could result in governmental (i.e., FDA) regulation, adverse liability judgments from addicted smokers suffering the adverse health effects of smoking, loss of social acceptability of smoking, and the ultimate loss of corporate profits. The evidence spelled out above is simply overwhelming that Defendants knew that smoking is addictive and knew that nicotine is the agent creating and sustaining that addiction. There is also overwhelming evidence that even though Defendants have known internally about addiction for decades, they have endeavored to keep the extensive research and data they had accumulated out of the public domain and out of the hands of the public health community by denying that such data existed, by refusing to disclose it, and by

shutting down or censoring laboratories and research projects which were investigating the mechanisms of nicotine.

1360. Defendants assert that the public health community and the public itself has known for decades that nicotine produced dependence. For example, Defendants cite to the 1962 publication of the well respected Larson, Haag and Silvette compendium, Tobacco Experimental and Clinical Studies, which described nicotine's effects on the human nervous system and summarized existing research suggesting that people smoke to obtain nicotine, that nicotine has pharmacological effects, and that nicotine is addictive or habituating. (no bates) (JD-000500). Defendants also cite to the United States Supreme Court comment that, when Congress enacted the Federal Cigarette Labeling Act in 1965, "the adverse health consequences of tobacco were well known, as were nicotine's pharmacological effects." Food and Drug Admin. v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 138 (2000). Even if there is truth to Defendants' speculation that "everyone knew" of nicotine's addictiveness, there is no question that the public health community lacked the substantial and sophisticated understanding of nicotine's effects and role that Defendants possessed. Put quite simply, if the Surgeon General of the United States possessed the information and data Defendants possessed prior to publication of his 1964 Report, it is simply not possible that he would have ignored it.

1361. Moreover, there is a basic inconsistency in Defendants' position. If, in fact, "everybody knew" that smoking and nicotine were addictive, then why were Defendants publicly, vehemently, and repeatedly denying it?

1362. Defendants' denials misled the public about why quitting smoking is so difficult, exactly how difficult it is, and about why failure to quit is not simply a function of personal

weakness or lack of willpower. In short, after reassuring the smoker that smoking was not bad for her health, and was not addictive, Defendants then blamed her for being unable to stop using the product they had so successfully marketed with false information.

1363. Defendants did not simply deny that smoking warranted the label "addiction"; they denied the entire concept of physiological dependence. The semantic battle Defendants have waged in the public realm and at trial is a distraction from the fact that, whether using the word "dependence" or "addiction," the core concept is the compulsive and uncontrollable use of nicotine reflected in drug-seeking and drug-taking behavior, all of which Defendants deny exist.

1364. Based on the extensive individual Findings of Fact set forth in this Section, the Court finds that Defendants have known for decades that cigarette smoking was addictive, and that nicotine is the addicting element in smoking behavior. Defendants' false and misleading statements relating to addiction continue even today.

1365. Moreover, Defendants deliberately and intentionally hid this information from the public and closed down research laboratories and on-going projects in order to ensure secrecy. Time and time again, Defendants falsely denied these facts to smokers and potential smokers, to government regulatory authorities, to the public health community and to the American public.

* * * *

### E. Defendants Falsely Marketed and Promoted Low Tar/Light Cigarettes as Less Harmful than Full-Flavor Cigarettes in Order to Keep People Smoking and Sustain Corporate Revenues

2023. For several decades, Defendants have marketed and promoted their low tar brands as being less harmful than conventional cigarettes. That claim is false, as these Findings of Fact demonstrate. By making these false claims, Defendants have given smokers an acceptable

alternative to quitting smoking, as well as an excuse for not quitting.

2024. Defendants used a combination of techniques to market and promote their low tar brands. Defendants' marketing has emphasized claims of low tar and nicotine delivery accompanied by statements that smoking these brands would reduce exposure to the "controversial" elements of cigarette smoke (i.e., tar). Since the 1970s, Defendants also have used so-called brand descriptors such as "light" and "ultra light" to communicate reassuring messages that these are healthier cigarettes and to suggest that smoking low tar cigarettes is an acceptable alternative to quitting. In addition to appealing advertising and easily-remembered brand descriptors, Defendants have used sophisticated marketing imagery such as lighter color cigarette packaging and white tipping paper to reinforce the same message that these brands were low in tar and therefore less harmful. See Section V(E)(5), infra (Defendants' deceptive marketing of low tar cigarettes).

2025. Even as they engaged in a campaign to market and promote filtered and low tar cigarettes as less harmful than conventional ones, Defendants either lacked evidence to substantiate their claims or knew them to be false. Indeed, internal industry documents reveal Defendants' awareness by the late 1960s/early 1970s that, because low tar cigarettes do not actually deliver the low levels of tar and nicotine which are advertised, they are unlikely to provide any clear health benefit to human smokers, as opposed to the FTC smoking machine, when compared to regular, full flavor cigarettes.

2026. As Defendants have long been aware, nicotine delivered by cigarettes is addictive (see Section V(B)(3), supra (addiction)). Defendants' internal documents demonstrate their understanding that, in order to obtain an amount of nicotine sufficient to satisfy their addiction,

smokers of low tar cigarettes modify their smoking behavior, or "compensate," for the reduced nicotine yields by taking more frequent puffs, inhaling smoke more deeply, holding smoke in their lungs longer, covering cigarette ventilation holes with fingers or lips, and/or smoking more cigarettes. See Section V(E)(2)(b), infra (smoker compensation). As a result of this nicotine-driven smoker behavior, smokers of light cigarettes boost their intake of tar, thus negating what Defendants have long promoted as the primary health-related benefit of light cigarettes: lower tar intake.

2027. Defendants did not disclose the full extent and depth of their knowledge and understanding of smoker compensation to the public health community or to government regulators.

2028. Defendants' conduct relating to low tar cigarettes was intended to further their overarching economic goal: to keep smokers smoking; to stop smokers from quitting; to encourage people, especially young people, to start smoking; and to maintain or increase corporate profits.

### 1. Low Tar/Light Cigarettes Offer No Clear Health Benefit over Regular Cigarettes

#### a. History of Health Claims

2029. In the early 1950s, on the heels of a series of studies linking smoking and disease, the Defendant cigarette manufacturers began making health claims, often using models in doctors' white coats, in their advertising:

- American Tobacco Co. made representations "that its cigarettes were less irritating to the throat than competing brands, offered one's throat protection, were easy on one's throat, and provided protection against throat irritation and

coughing. . . .” Federal Trade Commission, In the Matter of American Tobacco Co., Complaint, Findings, and Order in Regard to the Alleged Violation of Sec. 5 of an Act of Congress Approved Sept. 26, 1914 (47 F.T.C. 1393), decided June 20, 1951.

- R.J. Reynolds Tobacco Co. “represented to the public . . . that the smoking of such cigarettes . . . aided digestion”; “represented that the wind and physical condition of athletes would not be impaired by the smoking of as many Camel cigarettes as desired”; and “represented that the smoking of Camel cigarettes was soothing, restful, and comforting to the nerves, and protected one against becoming ‘jittery’ or ‘unsure’ when subjected to intense nerve strain ….” Federal Trade Commission, In the Matter of R.J. Reynolds Tobacco Co., Complaint, Findings, and Order in Regard to the Alleged Violation of Sec. 5 of an Act of Congress Approved Sept. 26, 1914 (46 F.T.C. 706), decided March 31, 1950.

- Liggett & Myers Tobacco Co. represented “‘directly or by implication, that Chesterfield cigarettes can be smoked by an [sic] smoker without inducing any adverse affect upon the nose, throat and accessory organs of the smoker.’” FTC v. Liggett & Myers Tobacco Co., 108 F. Supp. 573 (S.D.N.Y. 1952).

- Lorillard made comparisons between the tar and nicotine yields of its cigarettes and those of its competitors. For example, Old Gold advertisements included statements that Old Gold was “lowest in nicotine and throat irritating tars and resins when compared with 6 other leading brands.” Langenfeld WD at 42:5-10 (citing In the Matter of P. Lorillard Co., 46 F.T.C. 735 (1950)).

2030. As discussed in great detail in section V(E)(1)(a), infra, the FTC successfully prosecuted the Defendant cigarette manufacturers’ for some of these health claims. See In the Matter of American Tobacco Co., 47 F.T.C. 1393 (F.T.C. 1951); R.J. Reynolds Tobacco Co., 46 F.T.C. 706 (1950), modified, 192 F.2d 535 (7th Cir. 1951), on remand, 48 F.T.C. 682 (1952);

Federal Trade Commission v. Liggett & Myers Tobacco Co., 108 F. Supp. 573 (S.D.N.Y. 1952), affirmed on opinion below, 203 F.2d 955 (2d Cir. 1953); P. Lorillard Co. v. Federal Trade Commission, 186 F.2d 52, 56-57 (4th Cir. 1950).

2031. Those prosecutions led to public calls for a ban on advertisements containing such health claims. (no bates) (JD 043377) (Advertising Age (Dec. 21, 1953)) ("Cigarette advertisers were urged today by the National Better Business Bureau to adopt an eight point code to eliminate unfounded health claims in cigarette advertising.").

2032. Given the public's concern over tar and lung cancer, the "White Coat" ads of the 1940s and early 1950s gradually disappeared, and a wave of ads featuring claims about filtration and tar reduction became the new basis for competition. See (no bates) (JD 000636 at 5) (1981 Surgeon General's Report) ("In the 1950s, cigarette manufacturers introduced cigarette filters as 'health protection' and advertised them widely."); Harris TT, 10/18/04, 2783:15-18.

2033. Defendants competed through comparative filtration ads in the period following 1953. (no bates) (US 58700 at 199) (NCI Monograph 13) ("Companies initially responded to this health scare by introducing filtered products that were accompanied by advertisements with explicit health-related statements.").

2034. In 1954, the FTC issued a letter to all tobacco companies announcing its intention to adopt uniform standards for cigarette advertising "to prevent the use of false or misleading claims." (no bates) (JD 000332 at 276) (False & Misleading Advertising (Filter-Tip Cigarettes), Hearings before the House Subcomm. of the Comm. on Gov't Operations, 85th Cong. (1957)) . During the ensuing negotiations with cigarette manufacturers, the FTC advised the industry to conform its advertising with FTC decisions, "including decisions finding that comparisons of tar

and nicotine between brands were false and misleading." Id.

2035. In 1955, the FTC adopted the "Cigarette Advertising Guides," proscribing any implicit or explicit health claims in cigarette advertising. The Guides did, however, provide a limited exception to this general rule, for what the FTC believed were implicit health claims. This exception allowed comparative ads claiming that a cigarette was "low in nicotine or tars," provided it has "been established by competent scientific proof applicable at the time of dissemination that the claim is true, and if true, that such difference or differences are significant." 50202 3956-57 (JD 003616 at 2) (FTC Press Release of 9/22/55 (Cigarette Advertising Guides)); (no bates) (JD 021949) (4 Trade Reg. (CCH) ¶ 39,012 (1995)). At the same time, some members of the public health community urged the development and adoption of cigarettes with reduced tar yields. Harris TT, 10/18/04, 2782:7-13; Burns TT, 2/15/05, 13357:8-16; Townsend WD, 80:22-81:10.

2036. By the mid to late 1950s, the American cigarette manufacturers responded with a heated "tar derby" of competing claims about the effectiveness of various filters: "[C]igarette companies advertised that certain brands were lower in 'tar' and nicotine and, by implication, less dangerous." (no bates) (JD 001032 at 1-49, n.174) (FTC Staff Report on the Cigarette Advertising Investigation (May 1981)); see also (no bates) (JD 004344 at 8343) (Unfair or Deceptive Advertising & Labeling of Cigarettes in Relation to the Health Hazards of Smoking, 29 Fed. Reg. 8324 (June 22, 1964)).

2037. Smokers responded too, switching in droves to filtered cigarettes. Krugman TT, 12/15/04, 8603:8-14; (no bates) (US 58700 Fig. 4-3, at 93).

2038. However, Congress and the FTC perceived that the resulting competition was confusing since different cigarette manufacturers sought to substantiate their "low tar" claims based on different "scientific" testing methods. (no bates) (JD 000332 at 276) (False & Misleading Advertising (Filter-Tip Cigarettes), Hearings Before a Subcomm. of the House Comm. on Gov't Operations, 85th Cong. (1957)) (discussing lack of standardized test method). Faced with the "tar derby" and perceived consumer confusion, the FTC concluded that, "[i]n the absence of uniform testing procedures, it was impossible to make claims about 'tar' and nicotine levels that could be substantiated. . . ." (no bates) (JD 001032 at 1-49, n.174) (FTC Staff Report on the Cigarette Advertising Investigation (May 1981)). Accordingly, in 1959, the FTC called a halt to the "tar derby" and "reiterated its view that tar and nicotine claims would be regarded as conveying the additional claim that lower levels of tar and nicotine reduced health risks." (no bates) (JD 000435 at 41) (J. Calfee, Cigarette Advertising, Health Information and Regulation Before 1970, Working Paper No. 134 (Dec. 1985)).

2039. "[T]he position taken by the FTC at this time was that the simple fact of listing tar and nicotine deliveries . . . constituted an implied health claim," because the "implication was that these cigarettes would be less hazardous or less harmful." Harris TT, 10/19/04, 2902:19-2903:3. On December 17, 1959, the FTC informed tobacco manufacturers that it henceforth would bar all health claims in advertising, including "all representations of low or reduced tar or nicotine, whether by filtration or otherwise." 1005150070 (JD 004534). The FTC further "inform[ed] the industry that in its opinion the evidence then available would support a complaint against any marketer who made any reference to tar or nicotine content, charging that such a reference was false and misleading." 670310575-588 (JD 040931 at 3).

2040. A month later, the FTC requested that the cigarette manufacturers agree to make no references to tar and nicotine in their advertising, and the manufacturers agreed. 1005150056-57 (JD 004535); 1005150051-52 (JD 003617).

**b. The FTC Method**

2041. The FTC thought the 1964 Surgeon General's Report provided "an evidentiary foundation to support a Rule requiring a positive statement [of average 'tar' and nicotine yields] in [cigarette] labeling and advertising." Letter of 4/11/66 from Paul Rand Dixon, FTC Chairman, to Sen. Warren Magnuson (670310575-588), JD 040931 (at 3).

2042. Within a week of the issuance of the 1964 Surgeon General's Report, the FTC proposed a Trade Regulation Rule that, among other things, would permit the advertising of tar and nicotine yields, provided that such advertising was "verified in accordance with a uniform and reliable testing procedure approved by the Federal Trade Commission." 29 Fed. Reg. 530, (no bates) (JD 040184 at 532); 29 Fed. Reg. 8324 (1964), (no bates) (JD 004344 at 8355-56).

2043. According to the FTC, "[c]onfusion can be obviated, and the ability of consumers to make an intelligent choice among competing brands protected, only if the measurement of cigarette-smoke ingredients accords with a uniform, fully reliable and approved testing procedure." 670310575-588 (JD 040931 at 4).

2044. "[T]here was substantial support for the proposition that an accurate statement of tar and nicotine content would be in the public interest. . . ." 0002905512 (JD 004537 at 5512).

2045. The National Interagency Council on Smoking and Health "hope[d] that [the FTC would] take the steps necessary to make it permissible for cigarette manufacturers to list tar and nicotine content on the labels of cigarette packages." 670310575-588 (JD 040931 at 8);

1002905514 (JD 004537).

2046. The American Cancer Society, the American College Health Association, the Roswell Park Memorial Institute, and others expressed support for the proposed rule. 1002905512-5519 at 5514-5519 (JD-004537).

2047. On March 24, 1966, the FTC notified cigarette manufacturers that they would be permitted to advertise tar and nicotine yields provided they used the Cambridge Filter Method, as published by Dr. C.L. Ogg of the U.S. Department of Agriculture, to substantiate any yield claims, and so long as "no collateral representations" were made as to the "reduction or elimination of health hazards" from lower yield cigarettes. (no bates) (JD 004538); see also 680236589 (JD 004612); (no bates) (JD 001032 at 4-3).

2048. The FTC Cambridge Filter Method uses a machine to "smoke" the cigarette for a designated puff volume at a designated interval for a designated period of time. As the smoke is drawn into the machine, it passes over a filter known as a Cambridge pad, on which the particulate tar matter is collected. That accumulated matter is measured to calculate the tar and nicotine yields for the cigarette. The FTC Method was developed to provide consumers with a relative ranking of nicotine, tar, and carbon monoxide yields from any cigarettes that were tested. Henningfield WD, 47:11-48:2; Henningfield TT, 11/22/04, 6794:8-6796:6.

2049. When the FTC gave manufacturers permission to make disclosures of tar and nicotine yields, it "recognized that the result would be that consumers would, in fact, believe that lowered delivery cigarettes were less hazardous and less harmful." Harris TT, 10/19/04, 2913:20-24.

2050. The FTC's change in policy to permit these claims was designed to achieve two

goals: provide consumers with an incentive to smoke the lower tar/nicotine cigarettes rather than the higher tar/conventional cigarettes and give manufacturers a competitive incentive to produce cigarettes with low levels of tar and nicotine. Harris TT, 10/19/04, 2909:1-25.

2051. The federal government wanted to provide consumers with information that they could use to compare brands. See, e.g., FTCDOCS 0259-1751-1793 (JD 004353 at 1) ("The 'tar' and nicotine testing program was intended to provide smokers seeking to switch to lower 'tar' cigarettes with a single, standardized measurement with which to choose among the then-existing brands.").

2052. In addition, given the premise of a dose-response relationship -- i.e., more tar equals more disease risk -- the FTC wanted to encourage competition among the cigarette manufacturers, thereby increasing the research, development, and production of cigarettes with lower FTC-measured tar yields. See, e.g., (no bates) (JD 043418 at 17) ("Based upon the proposition that lower yield cigarettes present a lessened hazard to the American public," the FTC has acted to "prompt cigarette manufacturers to develop less hazardous cigarettes."); see also (no bates) (JD 004615 at 1) (Sen. Warren G. Magnuson, News Release, Nov. 27, 1967) ("The results of the first government tests ranking cigarette brands by tar and nicotine levels were released today. . . . Hopefully, the wide dissemination of this information and the growing awareness of its significance among the smoking public will channel competition in the cigarette industry toward the marketing of cigarettes of progressively lower tar and nicotine content.").

2053. The theory was that the public would shift its consumption away from higher tar products, and toward lower tar products, just as it had done with the advent of filter-tipped cigarettes. In this way, it was anticipated that the national sales-weighted-average tar yields of

cigarettes sold in the United States would decline, and the public health would benefit. (no bates) (JD 053570 at 1).

2054. On July 31, 1967, the FTC directed its staff to commence "formal test[ing]" of cigarettes using the Cambridge Filter Test. (no bates) (JD 002477 at 2064360211); (no bates) (JD 004348 at 1).

2055. On August 8, 1970, the FTC proposed a rule to mandate disclosure of tar and nicotine ratings in all cigarette advertising. (no bates) (JD 004350).

2056. The FTC also invited the cigarette manufacturers to submit a voluntary proposal, in lieu of the proposed rule, for such disclosures in cigarette advertising. 2023098316 (JD 040304) ("If the industry can devise a voluntary plan that is feasible and appropriate, the Commission is willing to consider it.").

2057. The tobacco companies complied, (no bates) (JD 040305), and the FTC solicited public comment on the industry plan. 1005045883-84 (JD 041337); (no bates) (JD 002066).

2058. Ultimately, the FTC agreed to allow tobacco companies make certain disclosures about tar and nicotine content in cigarette advertising instead of issuing a formal rule. On December 22, 1970, the FTC formally adopted a revised version of the cigarette manufacturers' proposal for displaying FTC tar and nicotine ratings in all advertising. The agreement was implemented by the FTC on January 13, 1971, as a substitute for its proposed trade regulation rule requiring such disclosure. 1005045883-84 (JD 041337); (no bates) (JD 003634).

2059. The FTC concluded that the voluntary agreement to provide "tar and nicotine disclosure and the voluntary agreement . . . to put the Surgeon General's health warning on the side of the pack in advertisements . . . [were] highly responsible activit[ies] by" the cigarette

manufacturers. Public Health Cigarette Amendments of 1971, Hearings on S. 1454 before the Consumer Subcomm. of the Senate Comm. on Commerce, 92nd Cong. (1972) (statement of Robert Pitofsky, Dir., Bureau of Consumer Protection); (no bates) (JD 042276 at 58).

**c. The FTC Method Does Not Measure Actual Tar and Nicotine Delivery**

2060. Within months after it notified cigarette manufacturers on March 24, 1996 of its decision to allow advertising of tar and nicotine yields so long as the Cambridge Filter Method was used, the FTC invited cigarette manufacturers to comment in detail on the precise method to be used to measure tar and nicotine yields. See, e.g., (no bates) (JD 040780); (no bates) (JD 003620).

2061. Defendants "initially resisted imposition of the Cambridge testing method and claimed it would be inaccurate" because different smokers "smoke differently -- and even smoke differently at different times." Henningfield WD, 48:3-50:12. This is known as smoker variation. Early in the FTC process of developing a standard testing method, Defendants advised the Agency that, because of smoker variation, the Cambridge Filter Method would not measure the tar or nicotine that a human being would ingest from smoking any particular cigarette:

> No two human smokers smoke in the same way. No individual smoker always smokes in the same fashion. The speed at which one smokes varies both among smokers, and usually also varies with the same individual under different circumstances even within the same day. Some take long puffs (or draws); some take short puffs. That variation affects the [tar and nicotine] quantity in the smoke generated.

(no bates) (JD 004362 at 2). See also United States' Obj. and Answers to Joint Defs' Modified Eleventh Set of Req. for Admis. to the Pl. United States, RFA Resp. 5, 49-50, 54 (4/12/02) (The Government admits that in 1966, during the comment period for discussion of the Cambridge

method, certain tobacco companies stated that the FTC method would only be an effective measurement for certain conditions of smoking behavior).

2062. The FTC also heard from, among others, Clyde L. Ogg, Ph.D., of USDA, who developed the method initially adopted by the FTC. He admitted that: "Since smokers vary so greatly in their smoking habits, the proposed ... method will not tell a smoker how much tar and nicotine he will get from any given cigarette. It will indicate, however, whether he will get more from one than from another cigarette if there is a significant difference between the two and if he smokes the two in the same manner." (no bates) (JD 004748 at 38).

2063. The FTC's press release announcing its decision clearly described the limitations of the standardized test method it was adopting. (no bates) (JE 061264 at 1-2). The FTC stated:

> No test can precisely duplicate conditions of actual human smoking and, within fairly wide limits, no one method can be said to be either "right" or "wrong." The Commission considers it most important that the test results be based on a reasonable standardized method and that they be capable of being presented to the public in a manner that is readily understandable. . . . [T]he public interest requires that all test results presented to the public be based on a uniform method used by all laboratories. Use of more than one testing method would produce different results which would only serve to confuse or mislead the public.
>
> The Cambridge Filter Method does not and cannot measure these many variations in human smoking habits. . . . It does not measure all of the tar and nicotine in any cigarette, but only that in the smoke drawn in the standardized machine smoking according to the prescribed method. Thus, the purpose of testing is not to determine the amount of tar and nicotine inhaled by any human smoker, but rather to determine the amount of tar and nicotine generated when a cigarette is smoked by machine in accordance with the prescribed method.

(no bates) (JE 061264 at 1-2).

2064. On that same day, the Tobacco Institute issued a press release stating that the FTC

method was "unsound" and declaring that the "'tar' and nicotine results" produced by the FTC method "may be inaccurate [and] misleading" to consumers. Tobacco Institute Press Release, Tobacco Institute Says FTC Chose Unsound Test Methods: 'Tar' and Nicotine Results May Be Inaccurate, Misleading, Aug. 1, 1967, 500031952-1955 (JD 047658 at 1). Among other things, the press release pointed out that humans smoke cigarettes differently and that "per cigarette" tar and nicotine yields therefore would be "useless and misleading" to smokers who do not smoke within the FTC parameters. (no bates) (JD 047658 at 1).

2065. Defendants did not, however, disclose their knowledge that smokers would ultimately ingest as much if not more nicotine and tar from low-delivery cigarettes as they would from full-flavor products. Defendants knew that the phenomenon of smoker compensation, discussed in greater detail infra, would cause smokers to smoke low-delivery products more intensely and more frequently in order to obtain their desired level of nicotine. To feed their addiction, therefore, these smokers would defeat the stated purpose of the lower-delivery products. Henningfield WD, 48:3-50:12. Nor did Defendants disclose to the FTC that "a major reason that the method could yield misleading data was that nicotine addiction would drive smokers to achieve relatively stable nicotine intakes" and that smokers' "physiological need to obtain nicotine substantially lessens the accuracy of the FTC ratings." Henningfield WD, 48-14-49:7. According to Dr. Farone, Defendants did not inform the FTC in 1966 "that smokers alter their smoking behavior to get nicotine." Nor did Defendants tell the FTC that people's "smoking behavior was driven by the need to satisfy their nicotine addiction." Farone TT, 10/12/04, 2170:5-23. .

2066. There is a dose-response relationship between smoking and lung cancer. That is,

the less smoke to which smokers are exposed, the lower their lung cancer risk. Benowitz TT, 11/1/04, 4521:13-16; Townsend WD, 80:9-18. The predicate for the development and marketing of lower FTC-yield cigarettes was the expectation that, as a group, smokers of lower FTC-yield cigarettes would be exposed to less smoke. Townsend WD, 80:9-18.

2067. Because of compensation and the need of smokers to obtain a desired dose of nicotine, they may offset the decrease in their cigarettes' FTC tar and nicotine yields, in whole or in part, by one of two means. First, smokers may engage in so-called "puff" or "within cigarette compensation." This is done by smoking individual, lower FTC-yield cigarettes more intensively by taking bigger puffs, taking more frequent puffs, smoking the cigarette closer to the butt, blocking ventilation holes placed in the filter that dilute the smoke, or other means. Second, they may simply smoke more cigarettes. Benowitz TT, 11/1/04, 4512:11-4513:1; Dixon WD, 16:13-21.

2068. The issue of compensation has been discussed in the scientific literature since at least the 1940s. Benowitz TT, 11/1/04, 4526:19-4527:3. The early literature on nicotine, including compensation, was summarized in a well respected compendium of articles collected by Larson, P.S. et al., in Tobacco: Experimental and Clinical Studies: A Comprehensive Account of the World Literature (Baltimore, Williams & Wilkins Co. 1961). (no bates) (JD 000500); Rowell WD, 17:4-17. This useful research tool was cited repeatedly in the 1964 Surgeon General's Report. Rowell WD ,18:1-18. The Larson volume was funded by TIRC. McAllister WD, 102:9-22; Rowell WD , 17:18-20.

2069. It was a "common concern" in the early 1960s that smokers who switched to filtered cigarettes might "compensate" by smoking more cigarettes each day. Burns TT,

2/16/05, 13580:18-13581:7; see also Samet TT, 9/29/04, 1183:5-9.

2070. "Compensatory smoking behavior is a manifestation of nicotine addiction," and "occurs primarily due to nicotine." Dr. Benowitz described "the consensus in the medical and scientific fields" regarding compensation: "The concept of smoking to obtain desired levels of nicotine and the concept of nicotine titration with associated compensation is widely accepted by the scientific and public health communities." Methods of smoker compensation include taking "bigger puffs," taking "more frequent puffs," "block[ing] the ventilation holes in the filter," and smoking more cigarettes. Benowitz WD, 55:11-22, 56:22-23, 57:5-9, 57:23-1; Benowitz TT, 11/2/04, 4762:23-24, 4763:14-16. Even as to ultra low tar cigarettes, where a smoker switching down may not be able to compensate fully "on a per cigarette basis[,] . . . that smoker could always smoke more cigarettes." Farone WD, 103:18-104:1; accord Farone TT, 10/12/04, 2169:18-19 (testifying that "the requirement for nicotine" drives smoker compensation).

2071. Because each smoker smokes to obtain his or her own particular nicotine quota, smokers end up inhaling essentially the same amount of nicotine -- and tar -- from so-called "low tar and nicotine" cigarettes as they would inhale from regular, "full flavor" cigarettes. This is referred to as "complete" compensation. Virtually all smokers, over 95%, compensate for nicotine. Benowitz WD, 59:6-17; 61:15-62:13; Benowitz TT, 11/2/04, 4769:25-4770:4; (no bates) (US 58700 at 10) (Monograph 13); accord Burns WD, 1:10-15, 12:10-11, 43:19-45:2; Burns TT, 2/15/05, 13311:9-15; Burns TT, 2/16/05, 13537:6-9.

2072. The amount of nicotine that smokers need to sustain their nicotine addiction does not change over time. Therefore, compensation for reduced deliveries is permanent, and occurs for as long as the smoker smokes the low tar product. Benowitz WD, 70:25-71:10; see generally

DXA0310399-0650 at 0452-0476 (US 58700) (Monograph 13) (indicating no evidence to warrant conclusion that there is reduction in compensation over time).

2073. Because compensation is essentially complete, low tar cigarette smokers inhale essentially the same amount of tar and nicotine as they would from full flavor cigarettes, thereby eliminating any purported health benefit from low tar cigarettes. In short, "light and ultra-light cigarettes" do not, in actuality, "reduce the risks of smoking":

> Considering the overall exposure data for individuals selecting their own brand, there is little reason to expect that smokers of cigarettes with low machine measured yields will have a lower risk of disease than those who smoke higher yield cigarettes.

Benowitz WD, 72:9-14; (no bates) (US 58700 at 60); see also Benowitz WD, 61:6-13 (explaining the conclusions of Chapter 3 of NCI Monograph 13).

2074. As Dr. Benowitz pointed out,

> Compensation explains why smoking of light cigarettes has not been associated with a reduction of smoking-induced disease risks. One would think, looking at the FTC yield data, that toxic exposures would be substantially reduced if one switches to light cigarettes; however, because of compensation, resulting toxic exposures are similar for light and regular cigarettes.

Benowitz WD, 60:23-61:14.

2075. Despite the fact that tar deliveries, as measured by the FTC Method, decreased by more than two-thirds between 1954 and 1994, lung cancer in smokers actually increased. (no bates) (US 58700) (Monograph 13); (no bates) (US 76212) (1997 CDC MMWR article); see also (no bates) (US 88626) (1995 Thun et al. article).

2076. Compensation behavior is distinct from "individual smoker variation":

> Individual smoker variation refers to the fact that one smoker may smoke cigarettes -- either regular or low tar -- differently than another smoker, and that the same person may smoke the same cigarette differently on different occasions. . . . Individual smoker variability relates to the fact that cigarettes are smoked differently by different individuals. This type of variability is separate and distinct from the issue of compensation, which relates to the phenomenon of smokers smoking purportedly low-delivery cigarettes more intensely in order to achieve their particular desired level of nicotine intake.

Benowitz WD, 56:6-23.

2077. In its August 1, 1967 press release, the FTC set forth the Commission's understanding of smoker variation:

> No two human smokers smoke in the same way. No individual smoker always smokes in the same fashion. The speed at which one smokes varies both among smokers, and usually also varies with the same individual under different circumstances even within the same day. Some take long puffs (or draws); some take short puffs. That variation affects the tar and nicotine quantity in the smoke generated.
>
> Even with the same type of cigarette, individual smokers take a different number of puffs per cigarette depending upon the circumstances. When concentrating, or talking, the number of puffs is usually less. When listening, or required to listen to another person talking, the number of puffs per cigarette, as well as duration of each puff, usually increases. Smoking rates while reading a book may differ from smoking rates while viewing a television program. The number of puffs and puff duration (as well as butt length) will vary according to emotional state. Some smokers customarily put their cigarettes down in an ashtray where they burn between puffs; other smokers constantly hold cigarettes in their mouths; others hold them between their fingers.

(no bates) (JD 040254 at 2); 03573029-3030 at 3029 (US 22244).

2078. Significantly, the August 1, 1967 press release does not demonstrate a similar understanding of nicotine or addiction. It does not even mention nicotine and does not discuss

the fact that nicotine addiction would lead smokers to obtain essentially the same amount of nicotine from so-called low tar cigarettes as they would from regular cigarettes. (no bates) (JD 040254); Farone TT, 10/12/04, 2170:5-23.

2079. Public service announcements of the Office on Smoking and Health from the early 1980s relating to the potential for compensation reflected a similarly incomplete and ultimately incorrect view of compensation. Rather, they "implie[d] that the individual has within [his/her] ability automatically not to compensate; that is, that the compensation is not driven by the addictive process. That was the understanding we had in the early 1980s . . . . It was only after that [] that we understood with precision and specificity how the nicotine drives that smoking change." Burns TT, 2/16/05, 13565:8-13566:4.

2080. Defendants suggested an analogy between the FTC tar and nicotine yields and automobile gas mileage estimates, intimating that they are both useful, albeit imperfect. As Dr. Henningfield explained, this comparison is not valid:

> [W]e know through that [gas mileage] rating system that if you buy a car with a better gas mileage rating, virtually no matter how you drive it, you're going to get better mileage than a car with a worse rating. But in cigarettes, by just subtle changes in the way you smoke and things that most people don't even know about, the ventilation and the channels and the burn accelerants and all these different tricks, makes those two cigarettes look the same. Thus, for example, when humans smoke Marlboro cigarettes . . . Marlboro Lights can yield approximately twice as much nicotine as the Regulars are claimed to deliver by the standard FTC method. Marlboro Ultra Lights can deliver three times their advertised rating and most of the Carlton brands can deliver seven or more times their advertised rating.

Henningfield WD, 83:14-84:10.

2081. Light cigarette descriptors also "are totally different" from the information on food

labels and drug labels, because "if you eat the listed serving size of [foods], you will receive the amount of [the constituents] listed on the label. . . . By contrast, . . . the advertised FTC tar and nicotine ratings for cigarettes bear very little relation to the actual dose a smoker can and, in most instances, does receive from smoking that cigarette. The inaccuracy in the FTC ratings is especially pronounced for cigarettes sold as 'light' or 'low tar' by the tobacco companies. This discrepancy is especially serious because it is in the direction of more toxins than advertised." Henningfield WD, 84:11-85:3.

2082. Dr. Whidby, a scientist, former employee, and consultant for Philip Morris USA, agreed that: "[m]easurements of tar and nicotine yields using the FTC method do not offer smokers meaningful information on the amount of tar and nicotine they will receive from a cigarette . . . [or about] the relative amounts of tar and nicotine exposure likely to be received from smoking different brands of cigarettes." Whidby TT, 2/22/05, 13993:14-19; DXA0310399-0650 at 0423, 0452-0476 (US 58700).

2083. Compensation has been documented by various scientific methods. Three different kinds of studies are generally used to conduct research on compensation: (1) spontaneous brand switching studies, (2) forced brand switching studies, and (3) cross-sectional studies. Benowitz WD, 62:14-20.

2084. First, spontaneous brand switching studies are longitudinal studies that follow the same group of smokers over a specific period of time. At the start, the study measures the smokers' daily smoke exposure and records the FTC-yield of the smokers' usual brand. Later, at follow-up, the same smokers are re-contacted, at which time the study observes any change in the FTC-yield of the smokers' usual cigarette and again measures the smokers' daily smoke

exposure. Benowitz WD, 62:21-63:4; Benowitz TT, 11/1/04, 4513:2-4514:3, especially 4513:13-21; (no bates) (US 58700 at 45) (Monograph 13).

2085. Such a study permits estimation of the changes in the daily smoke exposure of those smokers who, over the course of the study, spontaneously and voluntarily switched to cigarette brands with higher or lower FTC yields, as well as any changes in the daily smoke exposure of those smokers who did not change the FTC yield of their cigarette. Benowitz WD, 63:22-64:2; Benowitz TT, 11/1/04, 4513:2-4514:3, especially 4513:13-21.

2086. Spontaneous brand switching studies, like randomized experiments, may be long term or short term. Dixon TT, 3/9/05, 15051:14-15052:5.

2087. Spontaneous brand switching studies "are more informative of smokers' exposure in the real world when switching from higher to lower yield cigarettes," because "the brand of cigarette has been selected by the smoker and not by the researchers." Benowitz WD, 63:22-64:2. "[S]pontaneous brand switching studies generally show that there is no reduction in smoke intake [including nicotine and tar intake] per cigarette. . . . The per cigarette figure [is important because it] shows what an individual can take in from a particular cigarette. Thus, it provides information on the delivery characteristics of the product." Id. at 64:8-16, 66:3-5.

2088. There is only one complete, peer-reviewed long-term spontaneous brand switching study, Lynch and Benowitz 1987, "Spontaneous Cigarette Brand Switching: Consequences for Nicotine and Carbon Monoxide Exposure," J. Public Health, 78(9): 1191-1194, (no bates) (JD 063010); Benowitz TT, 11/2/04, 4753:11-4755:5. The study found:

a. per cigarette nicotine intake was about the same, comparing smokers who switched to lower FTC-yield cigarettes during the course of the study to their own baseline per cigarette

nicotine intake. (no bates) (JD 063010 at 1192).

b. per cigarette nicotine intake was lower, comparing smokers who switched to lower FTC-yield cigarettes during the course of the study to a similar "control group" of full-flavor smokers who did not switch. Benowitz TT, 11/2/04, 4758:25-4760:13; (no bates) (JD 063010 at 1192).

2089. Only daily nicotine intake was actually measured in the study. The per cigarette nicotine values were calculated by dividing daily nicotine intake by the number of cigarettes the smokers reported they smoked per day. Benowitz TT, 11/2/04, 4758:12-18; Wecker WD, 9:9-10:3.

2090. Dr. Benowitz drew this conclusion from his study:

> For smokers who switched to lower yield cigarettes, the analysis of cotinine concentration or carbon monoxide per cigarette showed no change despite the reduction in nominal machine measured yield. Therefore, these smokers obtained the same dose of nicotine and carbon monoxide from each cigarette even though the machine measured yield was lower.

Benowitz WD, 63:22-64:2. The Benowitz study demonstrated that: "For spontaneous brand switchers, there is complete compensation for each cigarette smoked. As a result, for these smokers, switching from higher to lower yield cigarettes is not likely to reduce the risk of smoking." Id. at 64:14-65:6, 65:14-17. The evidence that there is no reduction per cigarette by switching to lower tar cigarettes is particularly compelling in light of Dr. Benowitz's testimony that "we do know that on average people who are smoking lower-yield cigarettes smoke the same or even slightly more than higher-yield cigarettes." Benowitz WD, 63:22-64:2; 64:14-65:6; 65:14-17; Benowitz TT, 11/2/04, 4762:23-24; 4763:14-16; see also Benowitz WD, 63:5-10 (explaining that "[c]otinine is a major breakdown product of nicotine" that "is metabolized . . . by

the liver" in humans, and therefore "has become the accepted marker for looking at nicotine exposure measurement from tobacco products").

2091. Based on this study, Monograph 13 concluded:

> For spontaneous brand switchers, there appears to be complete compensation for nicotine delivery, reflecting more intensive smoking of lower-yield cigarettes.
>
> * * *
>
> Spontaneous brand-switching studies suggest that there is no reduction in smoke intake per cigarette. . . .

(no bates) (US 58700 at 10 and 60); see also Dixon TT, 3/9/05, 15046:7-15047:7.

2092. There are also short-term spontaneous brand switching studies on compensation. Dixon TT, 3/9/05, 15051:14-15052:05; Dixon WD, 40:7-13.

2093. The peer-reviewed literature contains a 1999 meta-analysis of the brand switching studies that employed nicotine biomarker data. The mean estimate of the extent of compensation in that article was about 50-60%. Dixon WD, 40:14-20; see also (no bates) (JD 000547 at 1).

2094. Second, in experimental studies for forced brand switching, smokers are randomly assigned to smoke cigarettes with higher or lower FTC yields. The smokers' daily smoke exposure, as measured by various biologic markers, is compared to see if the smokers assigned to smoke lower FTC-yield cigarettes have a lower daily smoke exposure than smokers assigned to smoke higher FTC-yield cigarettes. Benowitz WD, 68:6-9.

2095. Daily smoke exposure takes into account both forms of potential compensation -- the tendency of smokers of lower FTC-yield cigarettes to smoke individual cigarettes more intensively, as well as the tendency of smokers of lower FTC-yield cigarettes to smoke more cigarettes. Benowitz TT, 11/2/04, 4739:13-4740:3; Wecker WD, 5:22-6:7.

2096. In these long-term randomized experiments on forced brand switching, smokers randomly assigned to smoke lower tar cigarettes were exposed to less smoke each day than the smokers randomly assigned to smoke higher tar cigarettes. The estimated compensation is about 75-80%, suggesting substantial but incomplete compensation. Benowitz WD, 70:19-21; Benowitz TT, 11/2/04, 4751:1-7; Wecker WD, 5:10-17.

2097. Dr. Benowitz explained that the substantial but incomplete compensation shown in the forced switching compensation studies is likely due to the act of forcing participants to switch brands:

> [S]mokers are switched only for the purpose of the research. Motivation and cigarette acceptability differ from the natural situation of brand switching. . . . The forced brand switching studies show on average about eighty percent compensation. . . . Presumably compensation is not complete because the smokers have been switched to cigarettes that were not of their own choosing.

Benowitz WD, 68:6-21; 70:19-24.

2098. Third, in cross-sectional studies, the daily nicotine intake of smokers smoking their usual, voluntarily-selected brand is measured, typically using biologic markers for exposure to cigarette smoke, such as cotinine in the blood or saliva, and compared with the FTC-yield of the smokers' cigarettes. Benowitz TT, 11/2/04, 4742:25-4743:11.

2099. Cross-sectional studies also lead to the conclusion that compensation is essentially complete:

> Cross-sectional studies involve sampling smokers in the general population who are smoking their own chosen brand of cigarettes . . . show that there is very little difference in tobacco smoke exposure in people smoking cigarettes with different machine-determined yields. . . . There have been many cross-

> sectional studies performed, and overall they demonstrate that while there are some differences in nicotine exposure when high- and low-yield cigarette brands are compared, these differences are quite small. . . . Cross-sectional studies show nearly 100 percent compensation.

Benowitz WD, 66:9-68:5.

2100. In cross-sectional studies where the participants themselves choose the tar level of their cigarettes, there is a "very shallow slope" or "very tiny slope across the range of tar and nicotine" comparing the nicotine intake of smokers of various tar levels, demonstrating that smokers who smoke cigarettes of widely varied FTC tar levels are ingesting similar amounts of nicotine. This data indicates that compensation is essentially complete. As Dr. Burns explained, the fact that lower tar smokers may show, on the whole, slightly lower levels of nicotine than higher tar smokers does not mean that the lower levels are the result of the type of cigarette, but rather that the nicotine quota of smokers able to smoke lower tar cigarettes is customarily lower:

> The effect is one that one would expect to be present as a small slope, since one would expect that high yield smokers would be likely to have higher nicotine levels and that the very lowest yield cigarette smokers would be there because they don't need much nicotine. That's independent of the brand of cigarettes they smoke. That's why they chose those brands. It's not an effect of the brand that they smoke. And so you would expect to see a small slope. The fact that the slope is as small as it is suggests that . . . there is full compensation on a population level when people in the natural setting move from one brand to another.

Dr. Benowitz's 1983 study, which showed this "very shallow slope," has been "replicated [in]numerable times by other scientists," and "those studies show basically the same picture, that there's a very shallow slope between the machine yield and cotinine levels." Burns TT, 2/16/05, 13541:8-13542:14; Benowitz WD, 67:10-18 (discussing his 1983 cross-sectional study);

Benowitz TT, 11/1/04, 4564:13-15; Benowitz TT, 11/2/04, 4826:13-4827:5; see also Burns TT, 2/16/05, 13547:7-11 (indicating that the Gori and Lynch compensation study "was presented and examined in [Monograph 13] by Dr. Benowitz and was part of the data that was examined in that chapter that reached the conclusion that compensation was essentially complete"). [To rebut the testimony of Drs. Benowitz, Burns, Henningfield, and Farone regarding smoker compensation, Defendants relied upon tobacco industry scientist Michael Dixon, Ph.D., an employee of Defendant BATCo, to testify as an expert in "human smoking behavior." Dr. Dixon testified that compensation is not complete because smokers compensate for tar not nicotine. Dr. Dixon is neither a medical doctor nor an epidemiologist; he holds a Ph.D. in respiratory physiology. Dr. Dixon further admitted that nowhere in his written direct examination did he even mention the subject of nicotine addiction. He has not published any articles on the subject of nicotine addiction, and there is nothing in the record to suggest that he has published a single peer-reviewed publication on any subject. Without any expertise in nicotine addiction, Dr. Dixon's testimony as to whether nicotine addiction drives smokers to compensate is not credible, especially when compared to the totally contrary evidence of government experts Benowitz, Burns, and Henningfield, each of whom has enormous expertise in the fields of nicotine addiction and smoking and health, have written numerous peer reviewed articles on these subjects, and have participated in the rigorous process of writing different Surgeon General's Reports on smoking and health. Dixon WD, 2:1-8, 3:1-9; Dixon TT, 3/9/05, 14917:5-9, 14960:16-14961:7, 14997:6-15001:11.]

2101. The cross-sectional studies as a whole suggested that compensation is not complete but substantial. Benowitz TT, 11/2/04, 4737:22-4738:9, 4738:15-18; Dixon WD,

44:23-45:18; Mulholland WD, 19:18-20:13.

2102. Evaluating all the types of studies as a whole, the evidence demonstrates, at a minimum, that compensation for daily nicotine is substantial if not complete. Benowitz TT, 11/2/04, 4737:22-4738:9, 4738:15-18 (cross-sectional studies); 4751:1-7 (randomized experiments); 4757:4-8, 4757:19-23, 4766:24-4767:3 (spontaneous brand switching, daily nicotine intake); Wecker WD, 15:19-16:5; Dixon TT, 3/9/05, 14942:5-14943:14; Mulholland WD, 57:12-22; Mulholland TT, 4/25/05, 19943:12-19945:19.

**d. The Public Health Community Has Concluded that Low Tar Cigarettes Offer No Clear Health Benefit**

2103. Low tar cigarettes have not reduced the risks of smoking relative to full-flavor cigarettes. Burns WD, 1:10-15; 12:10-11; 30:5-12 ("I have concluded that the changes in cigarettes that resulted in a lowering of the FTC tar and nicotine yields over the past 50 years have not resulted in a reduction in the disease risks of smoking cigarettes for the smokers who use these cigarettes."); Burns TT, 2/15/05, 13311:9-15. Dr. Jonathan Samet, a Government expert with extraordinary qualifications, is a physician and epidemiologist with extensive experience treating patients with lung cancer and COPD. He is the Chair of the Department of Epidemiology at the Johns Hopkins University Bloomberg School of Public Health and has served as author and/or editor of several Surgeon Generals' Reports over more than 25 years, contributed to several National Cancer Institute Tobacco Control Monographs, and served as an author of Chapter 4 of Monograph 13. As an expert in the science of tobacco smoking and health, including epidemiology, pulmonary medicine, and internal medicine, he concluded that the use of lower tar and lower nicotine cigarettes "has had no clear benefit on the health risks of

active smoking." Samet WD, 1:3-12, 2:20-3:3, 3:7-11, 3:19-23, 10:15-12:16, 14:1-15:13, 18:12-16, 168:17-19; Samet TT, 9/29/04, 10-18. Similarly, Dr. William Farone, fact and expert witness and former Director of Applied Research at Philip Morris, concluded that, based on his training and experience, "'light' cigarettes -- because they generally permit easy compensation and employ levels of dilution that increase the mutagenicity of the tar – are not any less hazardous than their full flavor versions." Farone WD, 123:21-124:4. The Court credits the testimony of these three experts.

2104. The 1981 Surgeon General's Report concluded, referring to the FTC Method of measuring tar and nicotine:

> [T]he smoking-machine model is limited in accurately reproducing human smoking behavior.... Smokers, however, are able to take larger, more frequent, and higher velocity puffs than the machines do. It appears that such compensatory adjustments often turn nominally lower 'tar' and nicotine cigarettes into higher 'tar' and nicotine cigarettes. . . . Even if the compensations made in smoking a single cigarette are small or nonexistent, smokers can increase their intake of 'tar' and nicotine by smoking more cigarettes.

(no bates) (JD 000636 at 180) (1981 Surgeon General's Report).

2105. The 1981 Report recognized that there are still "smokers who are unwilling or as yet unable to quit." As to them, the Report concluded that they "are well advised to switch to cigarettes yielding less 'tar' and nicotine, provided they do not increase their smoking or change their smoking in other ways." Id. at v.

2106. Dr. Burns, an editor of the 1981 Surgeon General's Report as well as "an author, editor or reviewer for each of the annual Reports of the U.S. Surgeon General on the Health Consequences of Smoking since 1975," concluded that, in his expert opinion,

> had the information available to the tobacco industry been available to the scientists preparing the 1981 Surgeon General's Report, that Report would not have drawn the erroneous conclusion that lower tar cigarettes produced lower risk or have made the recommendation that smokers who could not quit were "well advised to switch to cigarettes yielding less 'tar' and nicotine."

Burns WD, 1:10-15, 12:10-11, 36:3-37:12, 55:17-56:13, 56:21-57:17; Burns TT, 2/15/05, 13311:9-15; Burns TT, 2/16/05, 13666:25-13667:24 ("Had that information been available to us, we would not have then offered the recommendation to the population of the United States that it would be a good idea to shift to these products."); see also Burns WD, 56:14-20 ("The Surgeon General clearly expressed a concern [in the 1981 Report] about reduced yield smoking leading to compensatory increases in smoking behaviors; but, at that time, the public health community was not aware of the role of nicotine addiction in altering puffing behavior, the elasticity of delivery designed into cigarettes then on the market which facilitated compensation on the part of the smoker, or the observations made by the industry that showed compensation was essentially complete for some 'light' cigarettes. Had we known that, the recommendation would not have been made."); Burns WD, 38:10-13 (indicating that "some of the same concerns [relating to the lack of a health benefit to lower tar cigarettes] were expressed in the 1989 Surgeon General's Report").

2107. The 1981 Report

> did not fully take into consideration the phenomenon of compensation, and how smokers smoke to get a certain amount of nicotine, and will even adjust their smoking behavior to get the amount of nicotine they seek or are accustomed to . . . we didn't know in 1981 the extent to which smokers would compensate after switching to a 'low tar' and low nicotine yield product.

Samet WD, 164:15-165:5.

2108. Dr. Burns provided the "three principal reasons" that "the traditional epidemiological approaches that were employed at the time of the 1981 Surgeon General's Report" yielded results erroneously suggesting that lower tar cigarettes provided less lung cancer risk:

> (1) "[T]hat people who smoked low-tar and nicotine cigarettes" were smoking them largely "based on the understanding that these cigarettes . . . offered less risk." As a result, the people who choose these cigarettes "have different health behaviors" and often "different smoking characteristics" than smokers of higher tar cigarettes, leading to different expectations of health outcomes.
>
> (2) That "very few people in the epidemiologic studies started out smoking low tar and nicotine or even filtered cigarettes." Most smokers who smoke the high-tar cigarettes very intensely are not able to switch down to lower tar cigarettes, whereas people who do not smoke the higher tar cigarettes very intensely, "when they switched to a low-tar cigarette . . . may be successful because they didn't have much nicotine intake that they needed to satisfy, and correspondingly they didn't have much tar intake. So the process of switching to low tar and nicotine starts to separate individuals who have different intensities of smoking, different amounts of tar that they are ingesting and, therefore, will have different risks."
>
> (3) That "a substantial fraction of people who switch from high-tar and nicotine cigarettes to low-tar and nicotine cigarettes use increased numbers of cigarettes . . . as a mechanism of compensation. . . . In order to control for intensity of smoking, the epidemiologic studies used the number of cigarettes smoked per day as a measure of intensity with the mistaken assumption that people wouldn't change the number of cigarettes they smoked per day. That leads us to underestimate the actual number of cigarettes smoked per day as a measure of exposure in low-tar and nicotine cigarette smokers," because the epidemiological

> analysis compares people who smoke a higher number of cigarettes per day after switching to a lower tar cigarette to people who smoked this higher number of cigarettes per day of the higher tar cigarette. "That produces an erroneous, or incorrect, perception that switching to [the lower tar] cigarette lowered your lung cancer risk as an individual."

Burns TT, 2/15/05, 13327:21-13331:3; 13334:6-13337:5.

2109. Moreover, epidemiological studies may underestimate the risks for lower tar smokers because these smokers may have other characteristics – such as healthier lifestyles – that contribute to a reduction in risk regardless of the type of cigarette smoked:

> Epidemiological studies often assume that smokers who switch to low-yield products are similar to smokers who do not. There is evidence that this may not be true. For example, switchers may smoke their cigarettes differently, they may have started smoking later as teenagers, they may attempt to quit more often. Switchers may have smoked less intensely before they switched, when compared to their high-yield, non-switching counterparts. Switchers may have smoked less at younger ages. When these aspects of smoking behavior are not accounted for, study results may be misleading. In addition, switchers are [a] generally healthier group in terms of diet, exercise, and lifestyle in comparison to smokers who do not switch to a low yield product. The cumulative effect of these group differences is that any reduction in the risks among switchers may be the result of these differences, rather than the fact that they switched to a low yield product. This was also an observation in Monograph 13.

Samet WD, 167:13-168:2.

2110. Recent studies, including the National Cancer Institute's Monograph 13 and the 2004 Surgeon General's Report, have confirmed that low tar and filtered cigarettes are no less harmful than conventional delivery and unfiltered cigarettes. The 2001 NCI Monograph 13, “Risks Associated With Smoking Cigarettes With Low Machine Measured Yields of Tar and

Nicotine" ("Monograph 13") concluded:

> Epidemiological and other scientific evidence, including patterns of mortality from smoking-caused diseases, does not indicate a benefit to the public health from changes in cigarette design and manufacturing over the last fifty years. . . . Widespread adoption of lower yield cigarettes in the United States has not prevented the sustained increase in lung cancer among older smokers. . . . Considering the overall exposure data for individuals selecting their own brands, there is little reason to expect that smokers of low yield cigarettes will have a lower risk of disease than those who smoked higher yield cigarettes.

DXA0310399-0650 at 0422-0423, 0473 (US 58700).

2111. Dr. Samet testified that: "The evidence is clear. We have tracked the risk of lung cancer closely and not seen a fall in relative risks to smokers." Samet WD, 169:14-16.

2112. The 2004 Surgeon General's Report reached the definitive conclusion: "[C]igarettes with lower machine-measured yields of tar and nicotine (i.e., low-tar/nicotine cigarettes) have not produced a lower risk of smoking-related diseases." In addition, the Report concluded that "[s]moking cigarettes with lower machine-measured yields of tar and nicotine provides no clear benefit to health" and that, "[a]lthough characteristics of cigarettes have changed during the last 50 years and yields of tar and nicotine have declined substantially, as assessed by the Federal Trade Commission's test protocol, the risk of lung cancer in smokers has not declined." TLT0930001-0949 at 0042, 0340, 0911 (US 88621). See also VXA100001-0604 (US 77217) (NCI Monograph 8); MTP0032477-2481 (US 76212) (11/7/97 CDC MMWR article); VXA1611681-1689 (US 77222) (1996 Samet et al. article); VXA1601456-1742 (US 64059) (1984 Surgeon General's Report).

2113. Both the 2004 Surgeon General's Report and the NCI's Monograph 13 were based

on evidence "derived from research on human behavior and exposures, cigarette design and yields, smoke chemistry, epidemiological [and other] population-based data on human disease risk." DXA0310399-0650 at 0422-0423 (US 58700).

2114. Extensive research into the relationship between research of biomarkers of nicotine in humans and FTC tar and nicotine yields demonstrates that lower tar cigarettes do not provide a reduction in harm:

> Generally speaking, research using these biomarkers has indicated little, if any, correlation between the FTC-yield of tar or nicotine, and the levels of the biomarkers measured in smokers. . . . These results suggest that there is little difference in the levels of biomarkers comparing smokers of higher yield tar/nicotine cigarettes and lower yield tar/nicotine cigarettes, as measured by the FTC method. This implies that doses of carcinogens or other toxic materials that smokers ingest have little relationship, if any, to the FTC tar yield. This, in turn, suggests that the gradual reduction in tar yield over the past several decades has not resulted in a reduction in smokers' exposure to carcinogens, and that the FTC test method is not informative with respect to lung cancer risk or to the risk of smoking-caused diseases generally. . . . In fact, evidence with respect to smoker compensation and biomarkers shows that those smokers who switch to "Low Tar" cigarettes modify their pattern of smoking to obtain the same or similar amounts of tar and nicotine as from the "High Tar" cigarettes they used to smoke. The bottom line is that a "Low Tar" label-based brand under the FTC protocol does not mean that a smoker is actually ingesting "Lower Tar" than from any other cigarette.

Samet WD, 147:11-148:21; 149:23-150:4.

2115. The conclusions of Monograph 13 and the 2004 Surgeon General's Report -- that lower tar cigarettes do not provide a health benefit -- "represent[] the consensus view of the scientific community on this issue." Burns WD, 1:10-15; 31:6-9; 41:12-18; 58:20-61:13 (discussing Monograph 13 (US 58700); IOM Report (US 20919); WHO Sactob Report (US

86658); and 2004 Surgeon General's Report (US 88621)); Burns TT, 2/15/05, 13311:9-15; 13668:1-8; see also Benowitz WD, 72:21-24 ("Most authorities are now convinced that there is little if any benefit with respect to health risk to smoking low yield versus regular cigarettes"); (no bates) (US 86657) (Canadian Expert Panel, Putting an End to Deception: Proceedings of the International Expert Panel on Cigarette Descriptors. A report to the Canadian Minister of Health from the Ministerial Advisory Council on Tobacco Control 9) (2001) ("There is no convincing evidence of a meaningful health benefit to either individuals nor to the whole population resulting from cigarettes marketed as 'light' or mild'").

2116. In 2001, the Institute of Medicine published "Clearing the Smoke: Assessing the Science Base for Tobacco Harm Reduction," which concluded that "the public health of PREPs [potential reduced-exposure products] is unknown." The IOM report went on:

> The major concern for public health is that tobacco users who might otherwise quit will use PREPs instead, or others may initiate smoking, feeling that PREPs are safe. That will lead to less harm reduction for a population (as well as less risk reduction for that individual) than would occur without the PREP, and possibly to an adverse effect on the population.

(US 20919).

2117. In 2001, the World Health Organization Scientific Advisory Committee on Tobacco Product Regulation issued a report that concluded:

> 1. Tar, nicotine, and CO numerical ratings based upon current FTC methods and presented on cigarette packages and in advertising . . . are misleading and should not be displayed. . . . 4. Banned terms should include light, ultra-light, mild and low-tar, and may be extended to other misleading terms. The ban should include not only misleading terms and claims but also, names, trademarks, imagery and other means of conveying the impression that

the product provides a health benefit.

TLT1010692-0699, 0695 (US 86658).

2118. In 2004, the World Health Organization International Agency for Research on Cancer ("IARC") released its Monograph 83, "Tobacco Smoke and Involuntary Smoking," which concluded that "changes in cigarettes since the 1950s have probably tended to reduce the risk for lung cancer associated with the smoking of particular numbers of cigarettes at particular ages." However, the IARC Monograph attributed any reduced risk largely to the shift from unfiltered to filtered cigarettes which occurred in the 1950s, not the shift from high yield to low yield cigarettes which occurred in the last few decades. Moreover, the IARC's conclusion did not apply to individuals who increased the number of cigarettes they consumed as they shifted to low yield cigarettes. 1000861953-1953 (US 35484) (Wakeham 3/24/61) ("As we know, all too often the smoker who switches to a hi-fi cigarette winds up smoking more units in order to provide himself with the delivery which he had before."). The IARC Monograph went on: "the introduction of cigarettes that can be misperceived as 'safe' may well have adversely affected smoking uptake rates, cessation rates, and consumption per smoker." TLT0970001-1455, 0180 (US 86746)

2119. All the major scientific bodies that have addressed this question in recent years have clearly concluded that lower tar cigarettes provide "no clear benefit" to health:

> I think there's no evidence of clear benefit. . . . I think the state of the evidence has been well summarized in the reports of the Surgeon General, IARC, the Institute of Medicine, each group that's looked at the question of whether today's lower yield cigarettes are likely to produce -- are likely to produce lower risk of lung cancer, has said, you know, no clear benefit.

Samet TT, 11/29/04, 1168:12-16; 1169:2-18.

2120. Echoing the conclusions of Monograph 13 and the 2004 Surgeon General's Report, a January 2004 article in the British Medical Journal reported on a study intended "to assess the risk of lung cancer in smokers of medium tar filter cigarettes compared with smokers of low tar and very low tar cigarettes":

> There was no difference in risk among men who smoked brands rated as very low tar . . . or low tar . . . compared with those who smoked medium tar brands. The same was seen for women. . . . Men and women who smoked very low tar . . . and low tar . . . brands had risks of lung cancer indistinguishable from those who smoked medium tar . . . brands. . . . Our finding that there was no difference in the risk of lung cancer between people who smoked medium tar filter, low tar filter, and very low tar filter cigarettes is consistent with evidence of compensatory smoking.

TLT1020160-0167 at 0160, 0164, 0166 (US 88622).

2121. Two very large American Cancer Society's Cancer Prevention Studies ("CPS"), "conducted approximately 20 years apart," which show that lung cancer death rates have not gone down as a result of the introduction of low-tar cigarettes, provide powerful confirmatory evidence. CPS-I was conducted in the late 1950s and early 1960s, and CPS-II was conducted in the 1980s. Because of this 20 year gap, the smokers in the CPS-I study were smoking mostly high-tar, unfiltered cigarettes, and the "vast majority" of the smokers in the CPS-II study were smoking filtered cigarettes with much lower machine-measured tar and nicotine yields. CPS-I and CPS-II are "the two largest studies of smoking and disease risks;" they included "over a million men and women each," and "followed those individuals for" 12 to 18 years. The results of these studies showed that, "[d]espite the substantive reduction in tar yield of the cigarettes smoked in CPS-II, lung cancer disease risks increased rather than decreased in comparison to

CPS-I." Burns WD, 1:10-15, 12:10-11, 33:18-34:6, 35:14-35:9; Burns TT, 2/15/05, 13311:9-15, 13313:9-13314:6, 13316:19-13317:15, 13322:9-10.

2122. Despite the dramatic shift to filtered and "light" cigarettes in the last 50 years, the effect the public health community was expecting to see from a change in the type of cigarettes smoked in the U.S never materialized. To the contrary, health risks increased significantly. With reference to the CPS-I and CPS-II studies, Dr. Burns explained:

> For males, when you look at the risk of smoking, you see that it just about doubled between CPS-I and CPS-II. . . . For females, it went up almost fourfold. . . . [E]ven after adjustment for differences in number of cigarettes smoked and the duration of smoking, the rates increased for males and increased for females between these two studies that were conducted over a period of time when there was approximately a 50 to 60 percent decline in the tar value of the cigarettes being smoked and a dramatic increase in the number of smokers who were smoking filtered cigarettes. So, instead of seeing a reduction in the risk of smoking with the introduction of these products, we have seen the risk of smoking actually increase over that interval. . . . we had watched and waited for the decline in lung cancer to occur. It did not.

Burns TT, 2/15/05, 13322:22-13323:22, 13325:6-13326:22; (no bates) (U.S. 17802) (depicting the "sales-weighted tar and nicotine values for U.S. cigarettes" over time); (no bates) (U.S. 17803) (depicting data from the CPS-I study); (no bates) U.S. 17804 (comparison of lung cancer risk for nonsmokers and smokers based on CPS-I and CPS-II data); (no bates) (U.S. 17806) (graph showing that risk of lung cancer from smoking has not declined, notwithstanding the drastic shift to filtered cigarettes and those with lower machine-measured tar and nicotine deliveries).

2123. As Dr. Samet explained, "[i]f there were substantial benefits of the change in tar yield over the 20 years between [CPS-I in the 1960s and CPS-II in the 1980s], we would expect

lower relative risks; instead they increased." Dr. Samet also explained that the British Physician's study, which was conducted over two 20-year periods, also "shows that the relative risk values [for lung cancer] have gone up comparing the first 20 years (1951-1971) to the second 20 years (1972-1991)." Samet WD, 154:21-156:4, 156:5-12, 157:20-158:15; VXA1601833-1843 (US 64058) (published article on British Physician's Study, cited in Samet Written Direct).

2124. Even if it were true that lower tar cigarettes result in some minor incremental reduction in tar, they do not provide any meaningful health benefit relative to higher tar cigarettes "from the perspective of human exposure . . . or meaningful exposure." Henningfield TT, 11/3/04, 7295:2-7298:2. As Dr. Henningfield explained:

> It would be a little bit like low fat cheese has 100 grams, lets say, of X, and then there is another type that gave you 98 grams, and you could say, yes, that's lower, and the next lower one is 97 grams, but that's a meaningless difference, even though it's accurate and reliable by a machine test and you can say it does go down, it's a meaningless difference. . . . In this case, what Benowitz['s] study, and then many other studies showed, is that if you looked at actual intake of people, there was virtually no difference at all in intake. And it wasn't just that the ranking was off a little bit, it was that, for example, the Marlboro Light, according to the Massachusetts data can get – give you about three times as much nicotine as it was rated, and more than twice as much as the Marlboro regular, so it's off by several orders of magnitude, but most importantly, it is just -- if [a] consumer says, okay, I want to get lower tar and nicotine and they pick a light versus a regular, they're not getting biologically meaningful lower tar and nicotine. . . . There is no meaningful difference in exposure to people. . . . what U.K. realizes now, what U.S. realizes, the World Health Organization realizes is that it is still a meaningless difference. And that's why . . . the resistance to even using the . . . label "light" cigarettes.

Id.; see also Henningfield TT, 12/1/04, 7535:12-7536:23 (explaining that the "light cigarette debacle" centers around the fact that the historical reduction in machine-measured tar "was

biologically meaningless," citing NCI Monograph 13).

2125. Dr. Samet echoed these conclusions, stating that "while some earlier studies suggested a modest benefit in terms of lung cancer risk, late, more recent evidence suggests otherwise, namely that there is no benefit." He pointed out that, even excluding the more recent evidence and postulating some reduction in risk, the "overall risk [of smoking these cigarettes] is so high that even a small reduction is of no public health or medical significance." Samet WD, 170:11-23.

2126. Notwithstanding the widespread acceptance and independent validation in the scientific community of Monograph 13 and its conclusions, Defendants tried to challenge its conclusions and methodology, including the selection of its contributors. Defendants criticized the authors of Monograph 13 for not acknowledging the few scientists who expressed skepticism about its results. In addition, Defendants challenged NCI's selection of contributors to the Monograph, namely, that the scientists chosen were biased in favor of concluding that low tar cigarettes yield no clear benefit. However, as Dr. Burns noted, many of the contributors to Monograph 13 "represent some of the more distinguished scientists and experts on this issue in the country" and:

> [T]he consensus statement of the organization, that is the NCI. . . . prevents individual opinion from being presented as the consensus of scientific thought. . . . The way that you know that [collective biases are not influencing the final document] is by taking it through a series of reviews by the governmental organization. . . . The organization that then produces the volume and puts its seal of consensus approval on it, that is the National Cancer Institute, that undergoes a series of reviews that it takes to ensure that the data contained in the volume are scientifically accurate and represent the consensus of scientific thought.

Burns TT, 2/15/05, 13383:1-13389:4.

2127. Defendants' scientists were not involved with the production of Monograph 13 because:

> At the time which this was undertaken, the tobacco industry's position was still that . . . there were no disease risks that were causally associated with cigarette smoking. . . . For that reason, the tobacco industry has not been included in the Surgeon General's Report process and various other processes because they weren't part of the consensus of scientific thought at that point in time. They were perceived as adopting positions that had so little scientific credibility that they could not be meaningfully utilized in the formation of a consensus.

Burns TT, 2/15/05, 13389:11-13391:21 (explaining also that Monograph 7, in which RJR scientists participated, "was not a consensus document, it was simply the results of the proceedings of a meeting. Those proceedings come out under the author's name, are understood to be the individual opinions of the authors. That was not what was being requested with Monograph 13").

2128. The Court finds that the testimony of Dr. Burns is totally credible and persuasive on each of the issues which he discussed, including low tar cigarettes and their relative health effects. Dr. Burns, qualified by the Court without objection as an expert in "[t]he science of tobacco and health, including disease causation," is a medical doctor and professor of family and preventive medicine with 30 years' experience studying the health consequences of smoking. Dr. Burns has extensive experience, including as a teacher, in various medical areas, including smoking and health, and has studied epidemiology, addiction, nicotine, cigarette design and ETS in the context of smoking and health. He has over 200 publications, most of which are peer-reviewed, in the area of smoking and health, including chapters in two of the leading medical

textbooks. Furthermore, Dr. Burns has studied and taught extensively in the area of lung diseases, including lung cancer, and has personally participated in the treatment of thousands of patients with lung disease. In addition, he has served as "an author, editor or reviewer for each of the annual Reports of the U.S. Surgeon General on the Health Consequences of Smoking since 1975," and has served as contributing author and Senior Scientific Editor for several of the National Cancer Institute Tobacco Control Monographs. Dr. Burns has also received numerous award and honors for his work in the area of smoking and health, including the Surgeon General's Medallion. Finally, Dr. Burns's demeanor during his testimony, which spanned nearly two full days and consisted mostly of cross-examination, further demonstrated his credibility. He fully answered the questions posed to him by well-prepared counsel, he was totally versed in the complex scientific areas about which he was questioned, he was neither evasive nor combative, and demonstrated an enormous familiarity with the science of smoking and lung cancer, the history of the issue in this country as scientists learned more and more about the subject, and the manner in which preparation of the Surgeon General’s Reports represented the most up-to-date scientific consensus on the topic being studied. Burns WD, 1:3-5; 1:10-15; 12:10-11; (no bates) (US 78526).

2129. For the reasons set forth at length in previous Sections, the Court also finds that the testimony of Drs. Samet, Henningfield, Benowitz, and Farone is also highly credible and persuasive.

2130. To rebut the compelling testimony of Drs. Burns, Samet, Henningfield, Benowitz, and Farone, Defendants called a statistician, William Wecker, who, by his own admission, has "never been qualified by a Court as an expert in the subject of smoking and health." Wecker TT,

3/15/05, 15650:5-7. Because he is a statistician, and neither an epidemiologist nor a medical doctor, Dr. Wecker is "not able to offer opinions as to causation" relating to the relative health effects of low tar cigarettes. Wecker TT, 3/15/05, 15666:6-15667:2, 15670:20-15671:8. Moreover, Dr. Wecker's statistical analyses are unconvincing because they are flawed in several ways.

2131. First, Dr. Wecker's core opinion -- that smokers who switch to lower delivery cigarettes do not increase the number of cigarettes per day that they smoke -- is flatly contradicted by Defendants' voluminous research reports and other documents, spanning decades, which demonstrate that smokers who switch to lower deliveries do smoke more cigarettes per day. 1000861953-1953 (US 35484) (1961 PM); 2022244449-4450 at 4449-4450 (US 36855) (1970 PM); 1000350158-0188 at 0161-0162 (US 20176) (1971 PM); 1003285403-5416 at 5403 (US 20159) (1972 PM); 1003285403-5416 at 5403 (US 20159) (same); 1003293476-3493 at 3480 (US 85073) (1974 PM); 2040066740-6766 at 6750-6751, 6754-6755 (US 20435) (1979 PM); 2071376833-6834 at 6833 (US 27273) (1992 PM); 501525355-5366 at 5360-5361 (US 29531) (1974-1976 RJR); 679009843-9867 at 9843 (US 85055) (1977 B&W); 775036039-6067 at 6050 (US 21053) (same); 536000000-0090 at 0050 (US 22338) (1984 B&W); 760008596-8803 at 8760 (US 54588) (Confidential) (1998 BAT); 00044522-4523 at 4522 (US 22012) (1976 Lorillard).

2132. Second, Dr. Wecker testified that, in forming his opinion on this issue: "I don't reach my opinion by weighing all the evidence, but mainly on my own statistical work replicating and correcting figure 4-5" of NCI Monograph 13. Wecker TT, 3/15/05, 15656:22-15657:14. Figure 4-5 illustrates one of the new statistical analyses of CPS-I data that were performed as part

of the production of NCI Monograph 13 relating to change in number of cigarettes smoked per day by smokers switching down to obtain lower tar yield. However, the Conclusions of Chapter 4 of Monograph 13 did not rely on the new analyses. Burns WD, 30:13-18, 58:4-19; Burns TT, 2/16/05, 13498:1-9; DXA0310399-0650 at 0509-0510 (US 58700).

2133. Dr. Burns explained that the issue of "increases in number of cigarettes per day smoked by those who switch to lower tar brands of cigarettes" is "not the only [reason and], for that matter, it's not the princip[al] one" for Monograph 13's conclusion that lower tar cigarettes provide no reduction in harm relative to higher tar cigarettes.

2134. The first sentence in the Monograph under the heading for these new analyses of CPS-I data clearly states that the new analyses of cigarettes per day were inconclusive and, as such, were not the basis for Monograph 13's conclusions:

> A reexamination of the CPS-I data set was inconclusive as to whether compensatory changes in the number of cigarettes smoked per day when smokers switched to a lower nicotine cigarette introduce a bias sufficient to explain the observed increased lung cancer risk among smokers of high yield cigarettes.

DXA0310399-0650 at 0509 (US 58700); Wecker TT, 3/15/05, 15683:5-15687:14. Consequently, Dr. Wecker’s testimony, which relied on his critique of the new CPS-I analyses, was basically irrelevant since Monograph 13 did not rely on that data in reaching its conclusion.

2135. Third, Dr. Wecker's analysis failed to refute, or even consider, the conclusions reached by several other prominent scientific bodies -- including the 2004 Surgeon General's Report, the 2002 publication of the Scientific Advisory Committee on Tobacco Regulation to the World Health Organization, and the 2001 report to the Canadian Minister of Health from the Ministerial Advisory Counsel on Tobacco Control in Canada -- which all reached the same

conclusion as did the NCI in Monograph 13, namely that lower tar cigarettes provide no significant reduction in lung cancer or other health benefit -- in direct contrast to Dr. Wecker's conclusions. Wecker TT, 3/15/05, 15661:11-15664:23. Since Dr. Wecker was only a statistician and not qualified to address the subject of smoking and health, he could not have addressed the substance of NCI's scientific conclusions in Monograph 13.

2136. Fourth, Dr. Wecker made several changes to the analyses in Monograph 13 that reflected his lack of understanding of the relevant subject matter. For instance, he included women in his analysis of Figure 4-5 and was unaware that the contributors to Monograph 13 excluded women because the later increase in smoking prevalence among women resulted in the lack of a valid baseline dose-response relationship. Wecker TT, 3/15/05, 15691:18-15695:11; Burns TT, 2/15/05, 13323:23-13325:4 (explaining the temporal differences in the rise of prevalence of male and female smoking, which led to exclusion of women in graph); 13342:8-20 (explaining the gender differences in prevalence in the United States and France).

2137. Fifth, Dr. Wecker acknowledged that many of his reanalyses of Figure 4-5 showed no statistically significant difference in risk for smokers at the various tar levels, which is entirely consistent with the conclusion of the authors of Monograph 13, quoted above, that the results on this issue were "inconclusive." Burns TT, 2/16/05, 13526:4-6; Wecker TT, 3/15/05, 15687:15-15691:17.

2138. Sixth, Dr. Burns explained that studies done by Garfinkel et al. reported in the 1980 Banbury Product Liability and Health Risks report, which Dr. Wecker claimed were "consistent with [his] conclusions," were not "consistent with Dr. Wecker's findings . . . because it's a different analysis." Dr. Burns also noted: "We cited both of the [Garfinkel] studies that

examined cigarettes per day in Monograph 13. We looked at them carefully." Burns TT, 2/16/05, 13517:11-13518:23; Wecker WD, 31:10-14.

2139. Dr. Samet explained that comparing Dr. Garfinkel's calculations, published more than 20 years ago, to those performed for Monograph 13, is a case of comparing apples to oranges, as the analyses sought to answer markedly different questions:

> They're very different. . . . Dr. Garfinkel said: If people changed their brand, did they smoke more, the same or less? Just those three bins [categories], if you will. What [the Monograph 13] analysis says is: Let's look at whether there's a relationship between the reported numbers of cigarettes smoked on the first brand and on the second brand and the difference in nicotine yield on the first brand and the second brand. So [the Monograph 13 analysis] is a more quantitative analysis and Dr. Garfinkel's was more sort of: Did people change from smoking more than they used to [or] to less than they used to?

Samet TT, 9/29/04, 1185:11-1186:19; 1191:12-16; 1193:8-1195:11.

2140. Dr. Wecker maintained that examining lower tar and higher tar smokers' lung cancer rates, without controlling for cigarettes per day, provides "other empirical support" for his claim that epidemiological studies of the relative health effects of low tar cigarettes are not biased by controlling for cigarettes per day. Wecker WD, 49:5-11. However, Dr. Burns explained that neglecting to control for cigarettes per day fails to resolve "the core issue" necessary to have a reliable analysis, because it "introduce[s] other biases that are equally important":

> The core issue is having comparable groups, that is, having groups [where] you can adjust for those characteristics other than the type of cigarettes that they smoke. If you include numbers of cigarettes for controlling, you over control. If you don't, then you're left with the two populations likely to have differences in intensity of smoking and no method by which you can control for that

> difference. Then you can't tell whether the difference you're seeing is due to a difference in intensity of smoking, i.e. completely independent of the type of cigarette or is a characteristic of the cigarette that you've chosen to smoke.

Burns TT, 2/16/05, 13661:14-13662:6; see also Burns TT, 2/16/05, 13484:18-13485:10; 13486:8-21 ("If you don't control for cigarettes per day, you have two different groups of individuals who have different intensities of smoking and, therefore, you can't compare their exposures without looking at intensity.").

2141. Finally, Dr. Wecker's analysis of actual versus predicted death rates was not done in the manner utilized in Monograph 13. He admitted on cross-examination that there were several discrepancies between his analysis and that described in Monograph 13. The discrepancies included the fact that Dr. Wecker used mortality data, taken from the National Health Interview Survey, from 1993 to 2000, that was not contained in the calculations in Monograph 13. Again, Dr. Wecker was unaware of a critical fact, namely that the contributors to Monograph 13 specifically excluded data after 1992 because the National Health Interview Survey "changed the definition of smoker in 1992," making the post-1992 data inconsistent with the pre-1992 data. Wecker WD, 51:3-21; Wecker TT, 3/15/05, 15698:14-15701:18.

2142. Dr. Wecker also acknowledged that, while Monograph 13 discussed a chart examining lung cancer death rates at ages under 50, he attempted to create the chart described in the Monograph but only included people aged 40-50, excluding death rates for all ages under 40. Wecker TT, 3/15/05,15702:5-15706:2.

2143. Dr. Burns testified, upon review of a chart based on Dr. Wecker's calculations of actual versus predicted death rates, purportedly based on Monograph 13: "The data presented in

this graph have essentially no meaning whatsoever. This is not the analysis that Sir Richard Doll was suggesting be done and it is not an analysis that has any valid, scientific or technical meaning." Burns TT, 2/16/05, 13666:20-23; see also Burns TT, 2/16/05, 13664:10-24 (testifying that, to his knowledge, the chart has never "appeared in published peer reviewed literature").

2144. In sum, there is an overwhelming consensus in the public health and scientific community, both here and abroad, that low tar cigarettes offer no clear health benefit to smokers, have not reduced the risk of lung cancer and heart disease for smokers using them, and have not produced any decrease in the incidence of lung cancer. Moreover, because of the misleading nature of the advertising for low tar cigarettes, smokers who might have quit have refrained from doing so in the belief that such cigarettes reduced their health risks.

### 2. Based on Their Sophisticated Understanding of Compensation, Defendants Internally Recognized that Low Tar/Light Cigarettes Offer No Clear Health Benefit

#### a. Defendants Internally Recognized that Low Tar Cigarettes Are Not Less Harmful Than Full-Flavor Cigarettes

##### (1) Philip Morris

2145. A March 1, 1977 Philip Morris memorandum by industry-funded scientist Stanley Schachter to Thomas Osdene, Director of Research, concluded that low tar/low nicotine cigarettes are not less harmful:

> [I]t would certainly seem that the campaign for low nicotine cigarettes is misguided and rests on a set of fallacious premises. . . . The question is crucial and particularly so in light of . . . Ross's evidence that carbon monoxide, hydrogen cyanide, and nitrogen oxide delivery is considerably greater in most of the popular brands of low nicotine filter, [sic] cigarettes than in high nicotine, non-filter cigarettes. . . . It is . . . clear . . . that the major body of data that has been used to justify the campaign for low nicotine

> cigarettes does nothing of the sort.

1000046626-6661 at 6655, 6660 (US 20074).

2146. Dr. Farone stated that Philip Morris's Marlboro full-flavor and Marlboro Lights cigarettes are "essentially identical except for dilution" -- i.e., that Marlboro Lights have more dilution, dilution referring to ventilation that dilutes the smoke, particularly when machine-smoked by the FTC method, with ambient air. "[A]s you increase dilution, the toxicity in [the Ames] test increases, which is more likely than not associated with a toxicity increase in smokers." Farone TT, 10/7/04, 1888:2-1889:5; 1891:17-19.

2147. In fact, Dr. Farone explained that the very Ames mutagenicity testing that Philip Morris has conducted for the past 25 years, and that "Philip Morris has concluded . . . predicts carcinogenicity" has indicated that Philip Morris's Marlboro Lights cigarettes are, as designed, more mutagenic than Marlboro full-flavor cigarettes:

> [I]n the case of Marlboro Lights, the Philip Morris test data that I have reviewed on that level of dilution for equivalent blends indicated that the product design for their Light cigarettes was more mutagenic than the full flavor Marlboro, Marlboro Reds, and therefore predictive of more potential cancer risk. These studies were repeated multiple times over the past 20 years and continue to be repeated to this day. The Philip Morris data, as was used by Philip Morris, was a strong warning that their product design change between a Marlboro Red and a Marlboro Light -- increased ventilation -- resulted in a potentially more dangerous product.

Farone WD, 119:7-120:15; Farone TT, 10/7/04, 1866:2-17. Philip Morris has not "changed the design of 'Light' cigarettes in response to its studies and knowledge concerning mutagenicity." Farone WD, 121:3-9.

2148. Philip Morris consultant and former employee Dr. Whidby agreed with Dr.

Farone's basic analysis and acknowledged that "increased filter dilution," one of the techniques Philip Morris uses to lower the FTC tar yield of its cigarettes, "is associated with increased biological activity." Dr. Whidby explained that biological activity in the context of Philip Morris's biochemical testing reports generally refers to biological reactions such as tumor growth, cell mutations, and toxic reactions, and that it was "a bad thing" that should be reduced. Whidby TT, 2/22/05, 13964:18-25; 13967:22-13968:19. Helmut Wakeham, of Philip Morris, acknowledged the same phenomenon as far back as March 1, 1974. 1003293476-3493 at 3492 (US 85073).

2149. A November 1977 Philip Morris memorandum to Dr. Robert Pages from J. Booker and S. Drew about Ames testing stated: "The take home lesson from this experiment is that dilution of a cigarette appears to increase the activity of the WSC [whole smoke condensate] (more dramatically for some cigarettes than for others)." 1002978361-8363 at 8362 (U.S. 35635).

2150. By 1978, Philip Morris had substantial evidence that "filter dilution [which Philip Morris used to reduce FTC tar and nicotine yields] was somehow acting to increase" the "activity" of the whole smoke condensate ("WSC") collected from its cigarettes. Further experiments confirmed that the tar from ventilated low tar reference cigarettes, i.e., cigarettes used for research purposes and not actually sold in stores, measured higher on mutagenicity tests than non-ventilated products. Additional research conducted in 1979 yielded the same result. 2001243600-3673 at 3610-11 (US 20298); accord 2022180219 (US 21479).

2151. A May 11, 1982 Philip Morris document from INBIFO (Philip Morris's overseas research facility in Switzerland) revealed that Philip Morris learned from its testing of low tar

reference laboratory cigarettes in Europe that these cigarettes registered higher in standard biological tests than the full-flavor delivery reference cigarettes -- i.e., were "more active" -- and thus were more likely to cause cancer: "Low tar reference cigarette . . . [m]ay be slightly more active than [the regular delivery reference cigarette] as a complete carcinogen." 1003121638-1643 at 1638 (US 20153).

2152. A January 28, 1994 report from INBIFO to Philip Morris in Richmond, Virginia stated that increased cigarette filtration, porosity, and ventilation (primary methods used by Philip Morris to reduce the FTC Method tar and nicotine yields in its cigarettes) would result in an increase in the degree to which cigarette smoke was toxic to living cells (i.e., cytotoxicity), the irritation it caused to smokers, and the likelihood that the smoke would generate mutations such as tumors and/or cancer (i.e., mutagenicity). The document stated: "Increased filtration will result in a relative enrichment of gas phase constituents, leading to increased cytotoxicity and irritancy. . . . Increased porosity and ventilation will . . . increase the specific mutagenicity." 2024005509-5512 at 5509-5510 (US 20399); Farone WD, 122:1-14 (citing to, and agreeing with, INBIFO conclusions).

2153. In this case, A. Clifton Lilly, Senior Vice President of Technology, confirmed that data from tests run at Philip Morris's INBIFO facility showed that the Ames test for mutagenicity from Marlboro Lights produces significantly higher results than the tar from Marlboro full flavor products. 2001243600-3673 at 3610-11 (US 20298); 2022180219-0219 (US 21479); 1000135419-5439 (US 20078); Lilly PD, United States v. Philip Morris, 5/14/02, 229:17-231:21.

2154. A 2001 document about Ames mutagenicity testing from Philip Morris's INBIFO laboratory in Germany demonstrated that, in every case, the mutagenicity of Marlboro Lights is

higher than the mutagenicity of Marlboro full-flavor. 2505913831-3836 (US 46079).

2155. James Morgan, former President and CEO of Philip Morris, conceded in 2002 that, in his opinion, lower tar cigarettes are not any safer than higher tar cigarettes. Morgan PD, Price v. Philip Morris, Inc., 6/5/02, 75:3-15.

2156. According to Nancy Brennan-Lund, Philip Morris Senior Vice President of Marketing, "what we say on our web site we believe to be true." Philip Morris's position is that low tar cigarettes are no less harmful than full-flavor cigarettes, "based on what the Monograph 13 came out with." Lund later qualified her statement: it has "not been proven" that light cigarettes are less harmful, so one cannot assume they are less harmful. Brennan-Lund PD, Price v. Philip Morris, Inc., 9/20/02, 107:22-108:14; 109:16-110:22; 114:9-114:10.

2157. Ellen Merlo, then Philip Morris USA Senior Vice President of Corporate Affairs, agreed that in 2002 that Philip Morris's policy at the time was that lights or low tar cigarettes are not safe or safer than any other cigarettes. Merlo PD, Price v. Philip Morris, Inc., 10/2/02, 80:3-80:15.

**(2) R.J. Reynolds**

2158. RJR's internal documents show that it, like the other Defendants, has long known that it has evidence that low tar cigarettes are no safer than regular cigarettes.

2159. In May 1980, RJR scientist C.T. Mansfield performed the Ames test for mutagenicity "on the tars from twenty-four domestic brands of cigarettes with various [FTC] 'tar' deliveries," and found "a trend for low 'tar' cigarettes to show higher numbers per mg [of] 'tar,'" indicating that the low 'tar' cigarettes caused more mutations. 514903578-3610 at 3579 (US 20863).

2160. A September 29, 1992 RJR internal presentation reported that lower tar cigarettes were more likely to cause mutations such as tumors and cancer than higher tar cigarettes. The presentation stated: "Higher tar cigarettes tend to have lower Ames activity . . . than lower tar cigarettes." 509643825-3832 at 3825 (US 20830).

2161. In 2003, Arnold Mosberg, an RJR scientist, and other RJR scientists (Doolittle and Morgan) reviewed "data [they] have had for decades" (some for more than two decades) to conduct a comparison of the relative harmfulness of lights and full flavor cigarettes, using various tests, including animal skin painting tumorgenicity, rodent inhalation, and Ames mutagenicity studies. The results of these studies indicated that low tar cigarettes do not reduce risk relative to full-flavor cigarettes. Mosberg PD, Turner v. R.J. Reynolds, 8/19/03, 2:12-16, 6:7-12:4, 14:21-15:19, 15:24-16:1, 16:13-24, 19:3-5, 21:20-22:10, 22:19-26:8, 55:1-11, 57:15-58:16, 97:15-100:12, 103:23-104:1 (discussing in part Deposition Exhibit 2).

**(3) Brown & Williamson**

2162. A February 4, 1976 memorandum from Ernest Pepples, B&W Senior Vice President, titled "Industry Response to Cigarette/Health Controversy," reveals Defendants' knowledge that the low tar and filter cigarettes they were marketing as less harmful were not producing less tar and less nicotine to the smoker and were not likely to actually be less harmful:

> The industry has moved strongly toward filtered cigarettes, which have increased from 0.6% in 1950 to 87% in 1975. . . . This became known as the ‘tar derby' of the late 1950's. It was characterized by sharply intensified advertising competition. . . . The new filter brands vying for a piece of the growing filter market made extraordinary claims. . . . It was important to have the most filter traps. Some claimed to possess the least tars. In most cases, however, the smoker of a filter cigarette was getting as much or more nicotine and tar as he would have gotten from a regular

> cigarette. He had abandoned the regular cigarette, however, on the ground of reduced risk to health. . . . The manufacturers' marketing strategy has been to overcome and even to make marketing use of the smoking/health connection. . . . Thus the ‘tar derby' in the United States resulted from industry efforts to cater to the public's concern and to attract consumers to the new filtered brands. . . . The current duel between True and Vantage and between Carlton and Now are other examples of competitive efforts to capitalize on the smoking/health controversy.

170042567-2574 at 2568, 2574 (US 20292); Smith WD, 79:5-22.

2163. An August 5, 1980 B&W document signed by J. Kendrick Wells III, B&W Assistant General Counsel, acknowledged that "[t]here was question about the degree of support . . . at the present time" for the "scientific opinion that certain low levels of ‘tar' consumption are relatively safe to the smoker," and that "for the longer term the support may be quickly eroding." 680050983-1001 at 0990 (US 20981).

2164. An October 31, 1989 B&W internal memorandum, titled "Objections to Product Innovation Strategy," from Wells to RJ Pritchard, B&W executive and member of the Tobacco Institute's Executive Committee, conceded that "it is not established that the reduction or removal of specific smoke constituents or of smoke constituents across the board, such as in low tar cigarettes, is significant for smoking and health." 680701034-1038 at 1035 (US 21010); Wells WD, 60:3-61:10.

2165. Sharon Blackie Boyse, Director of Scientific Communications and a spokesperson for B&W on scientific issues as late as 1998, acknowledged that, "based on [her] experience as an employee within the cigarette industry, [she has] been aware for some time that some smokers believe that low tar cigarettes are less hazardous to their health [and that] some smokers believe that by switching to low tar cigarettes, they will achieve a health benefit." From at least as early

as 1998, B&W acknowledged that the company "did not know whether low tar cigarettes were, in fact, less hazardous," and "was not confident that the science showed any health benefit from low tar cigarettes." Blackie WD, 184:22-185:5.

2166. As of 2005, B&W's website admits that low tar cigarettes are not safer than regular cigarettes. It states that "despite a dramatic lessening of tar yields, the hoped-for reduction of smoking-related illnesses has not been conclusively demonstrated." Furthermore, the website directs the reader to the National Cancer Institute's Monograph 13, citing its conclusions that "[e]pidemiological and other scientific evidence, including patterns of mortality from smoking-caused diseases, does not indicate a benefit to public health from changes in cigarette design and manufacturing over the last fifty years," and that "[w]idespread adoption of lower-yield cigarettes in the United States has not prevented the sustained increase in lung cancer among older smokers." The website further states: "[W]e continue to believe that smokers should rely on the public health authorities' views on low tar cigarettes and other smoking issues." Ivey WD, 63:9-16; (no bates) (US 86656).

**(4) BATCo**

2167. A 1976 BATCo document from S.J. Green to P.L. Short and P. Sheehy revealed both that BATCo planned to market low tar cigarettes as safer and that BATCo did not have a sufficient basis to believe that low tar cigarettes were safer, stating: "Before we do work aimed to sell low delivery cigarettes, unless we are already satisfied, we should do some work to establish that in fact they are safer." 110076428-6432 at 6430 (US 34957).

2168. A June 9, 1982 BATCo document, "Technical Exchange Meeting," noted that Ames testing revealed that "[t]he specific activity [a measure of mutagenicity] of a plain cigarette

was found to be lower than that of a ventilated filter cigarette." 109883189-3192 at 3191 (US 20265).

2169. A February 18, 1988 BATCo study of cigarette mutagenicity from the B&W Research & Development Library's E.D. Massey found that the "lighter" the purported delivery of the cigarette, the higher the mutagenicity. Using Philip Morris cigarettes as an example, Merit cigarettes had higher mutagenicity than Marlboro Lights, which in turn had more mutagenicity than regular Marlboro cigarettes. 620000021-0032 at 0027, 0030 (US 20944).

**(5) Lorillard**

2170. Asked whether low tar/low nicotine cigarettes are any safer than conventional, full-flavor cigarettes, Christopher Coggins, Senior Vice President of Science and Technology at Lorillard, stated: "[O]ur policy is that cigarettes can cause cancer and that goes for all cigarettes." Coggins PD, United States v. Philip Morris, 8/16/01, 115:22-116:4.

**(6) Liggett**

2171. Comments by Liggett scientists on a "Memorandum of June 13, 1966; C.F. Woodward and C.L. Ogg to P.A. Wells" acknowledged that there was no basis to conclude that reductions in tar and nicotine and/or the use of filters reduced the harmfulness of cigarettes:

> Although the public does have a right to know what it is buying, extreme care must be exercised to avoid leading a non-technically oriented public to erroneous conclusions regarding the relative merits of one brand versus another based on minimal differences in "tar" or nicotine -- to neither of which can be attached any quantitative measure of health hazard. . . . We would question if any differences between any filter brands would show correlation with tumorgenicity. We know of no correlation of tar delivery among filter brands with tumor production in mice -- or for that matter, even among non-filter cigarettes. The level of uncertainty in current biological testing is so great that distinction between

cigarettes is not possible on this basis.

LWDOJ00068944-8949 at 8944-45 (US 21214) (emphasis in original).

**b. Internally, Defendants Had an Extensive and Sophisticated Understanding of Smoker Compensation**

2172. Defendants have known since at least the 1950s that the central component that drives the smoking habit is nicotine, an addictive substance. Accordingly, Defendants also have long been aware that the reason people smoke cigarettes is to obtain a sufficient "dose" of nicotine to sustain their addiction. 1003287880-7890 at 7884 (US 20163); accord 500380562-0564 (US 20630); 100515899-5910 (US 20230); 1003285403-5416 (US 20159); 500917468-7476 at 7474-76 (US 20660); 105553905-3914 (US 34799).

2173. Defendants also have known since the 1960s and 1970s that, because smokers smoke to obtain the desired effects of nicotine, smokers of lower-yield cigarettes tend to adjust their smoking behavior to titrate (i.e., control) their nicotine intake of nicotine to achieve the necessary levels of nicotine. That adjustment or titration of nicotine levels is called compensation. Defendants' internal understanding of compensation was decades ahead of that of employees and scientists of the Government and the scientific community. See Section V(B)(2)(b), supra. According to Dr. William Farone, Philip Morris employee from 1976 to 1984, who served as Director of Applied Research, and was accepted as an expert in "the chemistry and biochemistry of alkaloids and addictive drugs, the chemistry and physics of cigarette smoke, cigarette design and technology, and the chemistry and biochemistry of toxic substances and how they interact with living systems," during his employment at Philip Morris, the company had "a greater understanding of compensation than the outside scientific

community," and, in his expert opinion, "the same is true for the other tobacco company Defendants." In 1966, when the FTC was considering the FTC Method, Defendants knew "that smokers smoked for nicotine" and "that smokers alter their smoking behavior to get nicotine." Farone WD, 2:2-8, 2:15-19, 117:15-118:8; Farone TT, 10/12/04, 2169:18-22, 2170:5-11, 2171:25-2172:8, 2182:11-2190:7; Wigand WD, 8:11-17; 120:5-17.

2174. When Dr. Farone was Director of Applied Research, Philip Morris's own research found that "if we adjusted the design to reduce the nicotine delivery, or if people were given a cigarette of lower nicotine delivery than their usual brand, smokers would 'compensate' -- change how they smoked -- to get the amount of nicotine they need." Farone WD, 102:2-14; see also Farone WD, 104:7-15 (testifying that he knows Philip Morris was aware of compensation for nicotine "[f]rom conversations that I had with many of my colleagues at Philip Morris while I was working there, including people working under Dr. Dunn in his behavioral research group," and that this knowledge "is evident from the company's own documents").

**(1) Philip Morris**

2175. In a March 24, 1961 Philip Morris memorandum from Wakeham to Hugh Cullman, "Trends of Tar and Nicotine Deliveries over the last 5 Years," Wakeham stated: "As we know, all too often the smoker who switches to a hi-fi cigarette winds up smoking more units in order to provide himself with the delivery which he had before." 1000861953-1953 (US 35484); see also Farone WD, 104:16-105:9 ("[T]his research into and understanding of compensation influence[d] how Philip Morris designed cigarettes").

2176. As Philip Morris marketing researcher Myron E. Johnston noted in a June 1966 Philip Morris report titled "Market Potential for a Health Cigarette":

> [A]ny health cigarette must compromise between health implications on the one hand and flavor and nicotine on the other. It seems clear from the performance of existing health cigarette entries that flavor and nicotine are both necessary to sell a cigarette. A cigarette that does not deliver nicotine cannot satisfy the habituated smoker and cannot lead to habituation, and would therefore almost certainly fail.

1001913853-3878 at 3860 (US 20123).

2177. A July 28, 1967 Philip Morris USA memorandum from W.L. Dunn, Jr., then Associate Principal Scientist, to R.B. Seligman, Director of Development, discussed ventilation holes and compensation:

> An earlier study (Memo of June 27, 1967) established that lip contact with the tipping paper extended to 9.96 mm from the outer end of the tipping paper for the average smokers. Since the air dilution holes are located in a band from 8.0 to 9.7 mm from the outer end of the tipping paper, it follows that some of these holes are likely to be occluded under normal smoking conditions, whereas no occlusion is likely to occur when the cigarettes are machine smoked for analysis.

The memorandum also documents that "[s]mokers adjust puff intake in order to maintain TPM [total particulate matter] and/or nicotine constancy." 1003295500-5502 at 5500, 5502 (US 88627).

2178. An August 11, 1967 Philip Morris USA document from Helmut Wakeham, Vice President of Corporate Research and Development, to Paul D. Smith, Vice President and General Counsel, stated that human smokers increased their smoke intake when switching from non-filter to filter cigarettes:

> Two tests conducted at Product Opinion Laboratories demonstrate that in smoking a dilution filter cigaret [sic], the smoker adjusts his puff to receive about the same amount of "undiluted" smoke in each case. . . . In the smoking machine the puff volume is constant

> so that with dilution the quantity of “equivalent undiluted smoke” delivered to the Cambridge filter is reduced. Not so with the human smoker who appears to adjust to the diluted smoke by taking a **larger puff** so that he still gets about the same amount of equivalent undiluted smoke. . . . The smoker is, thus, apparently defeating the purpose of dilution to give him less “smoke” per puff. He is certainly not performing like the standard smoking machine; and to this extent the smoking machine data appear to be erroneous and misleading. It has probably always been so for diluted smoke cigarettes, whether dilution is obtained by porous paper or holes in the filter.

1000322554-2555 (US 35224) (emphasis in original); see also Dr. Jerry Whidby WD, 17:16-19:11 (testifying that "Product Opinion Laboratories was a facility established by Philip Morris to evaluate smokers' reaction to the cigarette brands Philip Morris was selling, as well as to Philip Morris's prototype cigarettes," and that he is not "aware of any instance, at any time between when Dr. Wakeham wrote this document in 1967 and when [Dr. Whidby] left the company in 1998, in which Philip Morris informed the American public directly of Wakeham's conclusions that the FTC tar and nicotine yields are apparently 'erroneous and misleading,'" and "dilution filter cigarettes generated lower FTC yields than non-dilution cigarettes, but delivered about the same amount of smoke to smokers").

2179. Dr. Farone explained the extraordinary significance of Wakeham's statements in this document:

> It shows that Philip Morris understood the puff compensation phenomenon. This document shows that by 1967, Philip Morris recognized that when you have dilution or ventilation, the mechanism for compensation is puff adjustment . . . this document [also] shows that Philip Morris knew in 1967 that human smokers compensated by increasing their smoke intake when switching from non-filter to filter cigarettes, and in doing so, smokers received the same amount of tar and nicotine from their filter cigarettes as from non-filter cigarettes. It also shows Wakeham's

> understanding that the FTC tar and nicotine yields for low tar cigarettes are erroneous and misleading.

Farone WD, 111:5-112:15.

2180. Since roughly the mid-1970s, the "vast majority of the low tar and ultra-low tar cigarettes sold by Philip Morris in the United States . . . are dilution cigarettes." Whidby WD, 19:16-18.

2181. In an August 25, 1967 Report on Project 1600, William Dunn, Senior Scientist, outlined an additional study performed by Philip Morris on puffing, with findings that provided "further support to the postulate that smokers adjust puff intake in order to maintain constant smoke intake." 1003288337-8338 at 8337 (US 85049).

2182. In a Fall 1969 speech, William Dunn reported to the Board of Philip Morris: "It would appear that smokers do modify their smoking habits in order to obtain a preferred [nicotine] intake level." 1003287880-7890 at 7884 (US 20163).

2183. Helmut Wakeham presented a November 26, 1969 internal industry paper, titled "Smoker Psychology Research," to the Philip Morris Board of Directors stating:

> This great variability among smokers results from the fact that a smoker tends to seek his own level of intake. Even while smoking a single cigaret [sic], he adjusts the volume of his puff as he goes down to the rod, compensating for the change in the density of the available smoke. . . . A smoker's intake level is determined by the smoker himself, not by the manufacturers of the cigarettes.

1000273741-3771 at 3748 (US 26080).

2184. A September 2, 1970 Philip Morris memorandum from Ray Fagan to Wakeham confirmed Philip Morris's understanding that smokers compensated for lower deliveries by smoking more cigarettes:

> In the last 15 years particulates in cigarette smoke have declined by 33%; however, the number of cigarettes per smoker has increased. Furthermore, experimental studies have shown that a smoker will increase the number of cigarets he smokes if the cigaret he is offered contains less particulates and less nicotine.

2022244449-4450 at 4449-4450 (US 36855); Farone WD, 110:6-14; 118:9-23.

2185. A November 1971 Philip Morris Special Research Report written by Tom Schori also addressed compensation by increasing the number of cigarettes smoked. The last sentence of the abstract of this report stated: "These findings support the hypothesis that the smoker does have daily intake quotas for tar and/or nicotine and that he titrates his smoke intake to meet these quotas." 1000350158-0188 at 0161-0162 (US 20176).

2186. A January 1972 document from Philip Morris Research Center, written by Tom Schori and William Dunn, reviewed Philip Morris's evidence indicating that smokers compensated when smoking brands supplying less nicotine in order to receive their "daily nicotine intake quota," stating:

> Cigarette consumption rate, i.e., number of cigarettes smoked per day, was found to vary as a function of the nicotine delivery of these cigarettes. Specifically, as nicotine increased, cigarette consumption decreased. These findings support the notion that smokers develop a daily nicotine intake quota and that when smoking cigarettes differing in nicotine delivery from that which they are accustomed they tend to modify their consumption rate in order to maintain their normal quota. No support was found for the analogous notion of a daily tar intake quota, however.

1003285403-5416 at 5403 (US 20159); 2062951266-1279 at 1266 (US 39723); Farone WD, 111:1-4 (referring to US 20159); Henningfield WD, 94:14-21 (referring to US 39723 as "significant in terms of Defendants' knowledge and understanding of the addictiveness of nicotine from the 1970s").

2187. A May 14, 1975 Philip Morris memorandum from William Dunn to Robert Seligman, Vice President for Tobacco Science and Research, stated:

> Underlying all of our work in this area is the conviction what the smoker gets in the way of smoke is independent of smoke concentration levels as delivered within the range of commercially available cigarettes. He has a variety of regulatory maneuvers at his disposal for accommodating supply to a fairly constant need [for nicotine]. To monitor all of these maneuvers simultaneously is a major objective of our behavioral research program.

1000024914-4920 at 4915 (US 26072).

2188. An August 19, 1977 Special Report from the Philip Morris USA Research Center written by Barbara Goodman, a Research Scientist, described Philip Morris's "Human Smoker Simulator," a mechanism the company used to replicate human smoking behavior. The Simulator recorded how smokers smoked particular cigarettes by measuring their puffing behavior, then played back the recording into a smoking machine so the machine could replicate -- and then measure -- the amount of smoke constituents and the chemical composition obtained from a cigarette when smoked the same way the human had smoked it. The document states: "The Smoker Simulator program has the instrumentation to measure those smoker variations that constitute a smoker's puffing profile and a programmable smoking machine to measure the resulting tar, nicotine, and water deliveries." 1003728025-8039 at 8027 (US 20179); Whidby WD, 21:19-28:9; Whidby TT, 2/22/05, 13989:19-13991:6; see also 1003293476-3493 at 3484 (US 85073) ("The cassette tape impulses an electronic smoking machine which duplicates exactly the smoking behavior of a given individual with a given cigarette. Delivery of tar, nicotine, and other smoke components can then be determined at the same conditions.").

2189. A Philip Morris Report dated July 20, 1981, written by Frank Gullotta and J.A.

Jones and sent to William Dunn and 40 others, including Dr. Whidby, described Philip Morris's Human Smoker Simulator program as "a system . . . which permits relatively unobtrusive monitoring of a smoker's inhalation patterns outside the laboratory setting," and indicated that "the system's accuracy was highly satisfactory throughout the experiment" and had "a mean accuracy reading of 96% . . . for 70 experimental sessions." The Report also indicated:

> A major barrier to investigations on smoke-laden inhalation patterns has been the lack of instrumentation which would accurately measure inhalation parameters, and yet be unobtrusive to the smoker. The system we have acquired breaks this barrier by permitting accurate and relatively unobtrusive monitoring of inhalation patterns under natural smoking conditions**.**

2025986350-6401 at 6352-6353, 6382 (US 87080).

2190. The July 20, 1981 Report includes a number of statements reflecting Philip Morris's understanding of smoker compensation:

> That roughly 20% or less of smokers take puffs equal to or smaller to those taken by the FTC Method machine smoking protocol.
>
> "The varying puff sizes in turn also give increased deliveries above those of" the FTC Method.
>
> "Smoker profile characteristics have been found to be affected by the cigarette design parameters to varying degrees."
>
> "A cigarette designed such that it causes the smoker to take larger puffs than the compared model could easily be perceived as having more impact (desirable or undesirable as the case may be)"
>
> Lists low resistance to draw and "high filter dilution" as the top two "physical cigarette designs that have the effect of increasing a smoker's puff volumes."
>
> "In conclusion, when a smoker is presented with a cigarette other than his normal brand, it is possible to estimate the maximum flow rate to a certain degree. The puff duration will increase with

> increasing RTD [resistance to draw] and/or filter dilution. Since the volume is based on both flow and duration, the puff volume will change accordingly."
>
> Test results showing that smokers of full-flavor, light and ultra light cigarettes all took larger puffs than in the FTC Method, and that the smokers' puffs were increasingly large for lower tar cigarettes, so that, for full-flavor smokers, "average tar deliveries were 45% higher than" the FTC yields, low tar smokers' "showed a higher rate of increase, 81%," and, for ultra light cigarettes, "[t]he average tar delivery" was "more than three times that of" the FTC yield**.**

1003728025-8039 at 8027, 8028, 8032, 8034, 8036, 8037 (US 20179); Whidby WD, 22:18-23:9, 23:17-21, 24:6-13, 25:14-18, 26:21-27:5, 27:15-28:9; see also 2025986350-6401 at 6353, 6384 (US 87080); Whidby WD, 53:10-55:21 ("Preliminary results suggest that inhalation patterns are modified in response to changes in the available nicotine in the cigarette smoked. . . . The results from studies which analyze blood plasma and urine nicotine concentrations . . . suggest that nicotine compensation is fairly complete.").

2191. A September 17, 1975 Philip Morris document from Goodman to Leo F. Meyer, Philip Morris Director of Research, reflecting results of Philip Morris's studies with its Human Smoker Simulator, reported that, due to compensation, smokers got as much tar and nicotine from Marlboro Lights as from full-flavor Marlboros:

> Marlboro Lights cigarettes were not smoked like regular Marlboros. There were differences in the size and frequency of the puffs, with larger volumes taken on Marlboro Lights by both regular Marlboro Smokers and Marlboro Lights smokers. . . . The panelists smoked the cigarettes according to physical properties; i.e., the dilution and the lower RTD of Marlboro Lights caused the smokers to take larger puffs on that cigarette than on Marlboro 85's. The larger puffs, in turn, increased the delivery of Marlboro lights proportionally. In effect, the Marlboro 85 smokers in this study did not achieve any reduction in smoke intake by smoking a

cigarette (Marlboro Lights) normally considered lower in delivery.

The report's "Conclusions" section noted that "[t]he smoker data collected in this study are in agreement with results found in other project studies." 2021544486-4496 at 4486-4488 (US 20348); see also Whidby WD, 45:11-12 (noting, in the context of this exhibit, that "Marlboro 85's" refers to Marlboro Reds, a full-flavor cigarette brand).

2192. As Dr. Burns explained, "there are three things that are powerfully significant in this document":

> (1) It "very clearly demonstrates that, in contrast to what we believed six years later when we wrote the 1981 Surgeon General's Report, smokers who smoked brands of cigarettes on the market in 1975 were not getting different yields when they smoked those products. We [in the public health community] believed they were."
>
> (2) "[T]his is dated 1975, six years prior to the time the [1981] Surgeon General's Report reached its conclusion. And we did not have access to this information or comparable information."
>
> (3) "[T]his study was done on a machine that mimicked actual smoking behaviors, that actually matched the behavior of the individual when the machine smoked the cigarette. In 1981, one of the recommendations that we made . . . was that this type of machine should be developed so that we could develop a better understanding of the relationship between delivery of tar and nicotine of these cigarettes when they were actually smoked. So . . . six years prior to the time we were reviewing that evidence for the Surgeon General, this information was available to Philip Morris."

Burns WD, 52:15-53:12.

2193. One other Philip Morris Human Smoker Simulator report compared the deliveries of the full flavor and light versions of brands Philip Morris was selling. That report, dated

September 23, 1976, measured the smoking behavior -- and resulting tar and nicotine deliveries -- of 150 full-flavor cigarette smokers for several years. This Human Smoker study's results revealed that, while Marlboro 100s are both full-flavor cigarettes and longer in length than Marlboro Lights, "the tar and nicotine yields for these two brands are basically identical." Whidby TT, 2/22/05, 14099:12-14106:6, 14106:15-14107:1; 1003727277-7298 at 7280, 7281, 7290 (JD 040539).

2194. Philip Morris stopped all testing with the Human Smoker Simulator in 1981. Whidby TT, 2/22/05,13991:15-13992:13.

2195. A March 1, 1977 Philip Morris memorandum from Stanley Schachter to Thomas Osdene, Director of Research, concluded: "Serious smokers smoke to prevent withdrawal. Smokers regulate nicotine intake . . . . The smoker who fails to regulate suffers withdrawal." 1000046626-6661 at 6654-6655 (US 35105).

2196. An October 16, 1981 memorandum from Jan Jones to William Dunn, titled "Nicotine Retention Research Proposal," stated:

> Research on smoke-laden inhalation patterns, using the ambulatory monitoring instrumentation, has provided preliminary evidence that inhalation behavior is modifiable, and is altered as a function of changes in the nicotine delivery of the cigarette. We are observing changes in inhalation parameters in the direction which would suggest compensation for increases or decreases in nicotine relative to the subject's usual brand.

1000136372-6373 at 6372 (US 35162).

2197. In a November 29, 1982 report, "The Effect of Cigarette Nicotine Content on Smoker Puff Parameters and Deliveries," Philip Morris scientists reported the results of their study of "puff number, puff volumes, puff durations, flow rates and puff intervals," which

showed smokers "generally tended to decrease puff duration, puff number and puff volume and increase puff interval as the nicotine level of the cigarette increased." 1000408760-8809 at 8762, 8764, 8771 (US 35272).

2198. Carolyn Levy, a research scientist for Philip Morris in its Behavioral Research Group from 1975-1980, testified that she "worked on the issue of whether individuals regulated the amount of nicotine they obtained from smoke," and as part of that work she "monitored how smokers inhaled smoke from cigarettes with varying tar and nicotine deliveries." Levy further testified that, as a result of this research, she was able to "gather evidence that some people change their smoking behavior in response to cigarettes with differing tar and nicotine deliveries." When Levy requested publication, she “was told not to publish or was not given approval to publish by the manuscript review board." Levy WD, 10:16-11:15.

2199. A November 1999 presentation, titled "PM USA Discount Brands," given to Geoffrey Bible, Chairman of the Board and CEO of Philip Morris Companies, noted in a Product Comparison chart that Ultra Light products have a higher puff count than Full Flavor products. 2070662118-2389 at 2176 (US 87914*).

**(2) R.J. Reynolds**

2200. In a March 28, 1972 memorandum marked "RJR SECRET" from Claude Teague to E.A. Vassallo and Murray Senkus, titled "A Gap in Present Cigarette Product Lines and an Opportunity to Market a New Type of Product," Teague stated: "I believe that for the typical smoker nicotine satisfaction is the dominant desire, as opposed to flavor and other satisfactions." The document went on to state:

> Given a cigarette that delivers less nicotine than he desires, the

> smoker will subconsciously adjust his puff volume and frequency, and smoking frequency, so as to obtain and maintain his per hour and per day requirement for nicotine (or, more likely, will change to a brand delivering his desired per cigarette level of nicotine).

Teague further stated:

> [R]egardless of which cigarette the smoker chooses, in obtaining his daily nicotine requirement he will receive about the same daily amount of tar. If, as claimed by some anti-tobacco critics, the alleged health hazard of smoking is directly related to the amount of tar to which the smoker is exposed per day, and the smoker bases his consumption on nicotine, then a present “low tar, low nicotine” cigarette offers zero advantage to the smoker over a regular filter cigarette, but simply costs him more money and exposes him to substantially increased amounts of allegedly harmful gas phase components in obtaining his desired daily amount of nicotine.

The document ends with the statement that "[t]he thoughts and philosophies expressed above come from many sources and certainly are not solely those of the writer." 500790776-0784 at 0778, 0782-0784 (US 29473).

2201. A document titled "Smoking Satisfaction" and labeled as a "[t]alk delivered to RJR Tobacco Company management, June 23, 1974 and RJR Tobacco International management, August 4, 1976" by Murray Senkus, Director of Scientific Affairs for RJR until 1979, stated

> [T]he amount of nicotine that one can get in the lungs from low tar cigarettes is much less. So the smoker then resorts to other means to get the nicotine he needs in the blood from low tar cigarettes by longer puffs, by bigger puffs, by more frequent puffs, and also by smoking more cigarettes each day. It has been observed that as one switches from a non-filter to a filter, one smokes more cigarettes per day. But eventually one can change his style of smoking so one can get enough nicotine in the blood during the inhaling step by changing the smoking style; i.e. longer puffs, bigger puffs, and more frequent puffs. Surveys have shown that in switching to

> lower tar cigarettes, smokers have not necessarily increased the number of cigarettes per day.

501525355-5366 at 5360-5361 (US 29531).

2202. Senkus, in a speech he gave at RJR in both late 1976 and early 1977, "Some Effects of Smoking," demonstrated RJR's knowledge that smokers compensate for lower delivery cigarettes to obtain their required nicotine level, and confirmed that the other Defendants also knew this:

> [T]here are ways to increase or decrease the amount of nicotine one can obtain by smoking a single cigarette: One can take a deeper puff or shallower puff. . . . One can puff more frequently or less frequently. . . . One can take a deeper puff and hold the smoke in the lungs longer before exhaling to assure complete transfer of nicotine into the body fluids. Without any question, the desire to smoke is based on the effect of nicotine on the body. . . . [T]he amount of nicotine that one can get in the lungs from low tar cigarettes is much less. So the smoker then resorts to other means to get the nicotine he needs in the blood from low tar cigarettes, by longer puffs, by larger puffs, by more frequent puffs, and also by smoking more cigarettes each day. One can get enough nicotine into the blood during the inhaling step by changing the smoking style; i.e., longer puffs, bigger puffs, and more frequent puffs. . . . It is worth noting that our competitors are aware of the significance of the quality and quantity attributes of nicotine. Moreover, they are fully aware of the advisability of maintaining a low tar value and also maintaining the nicotine as high as possible [referring to Philip Morris's Marlboro and Merit, and Lorillard's True brand].

500251711-1722 at 1714,1718, 1720 (US 48076).

2203. In an April 5, 1982 RJR report from J.H. Robinson and J.H. Reynolds to Dr. D. Werner, the authors admitted that the nicotine delivered under human smoking conditions was "more than 200%" of that advertised, stating that "the smoker can adjust his puffing characteristics to obtain the same level of nicotine from different cigarettes. This represents the

first concrete evidence that smokers compensate to obtain a consistent amount of nicotine. Relevant to this, it should be noted that all cigarettes experienced a marked reduction in nicotine filter efficiency under human smoking conditions compared to the nicotine filter efficiencies obtained under standard FTC conditions." 508028982-8984 at 8983 (US 85053).

2204. John Robinson, RJR's Principal Scientist in psychopharmacology, wrote a July 25, 1983 memorandum to Alan Rodgman, titled "Critique of Smokers of Low-Yield Cigarettes Do Not Consume Less Nicotine," which essentially agreed with the conclusions in an article written by Dr. Neal Benowitz showing that smokers compensate to obtain a stable nicotine dose in their bloodstream. The article stated:

> The paper itself expresses what we, in behavioral, have "felt" for quite some time. That is, smokers smoke differently than the FTC machine and may very well smoke to obtain a certain level of nicotine in their bloodstream. If a given level of nicotine in the blood is the final goal of a smoker, one would predict that he would smoke an FFT [full-flavor tar] and ULT [ultra low tar] cigarette differently. If the smoker could obtain the same nicotine in his bloodstream from an FFT and ULT cigarette by modifying his puffing/inhaling pattern, it would be expected that the blood cotinine level would be the same after smoking either cigarette on a regular basis . . . the data reported in this paper remind us of the HMSM experiment done with the German Camel and Marlboro cigarettes. While there were certain imperfections in this experiment, you may recall that the smokers apparently obtained almost exactly the same amount of nicotine no matter which of the four cigarettes they smoked. This was one of the first indications that smokers may, in fact, smoke to obtain a certain level of nicotine in their bloodstream. Data like these made me feel that the data reported in this current publication are probably correct.

502680871-0871 (US 49198); see also 508978013-8025 at 8014 (US 20819) (acknowledging that smokers who switched to low-tar products typically "compensated," and indicating that a smoker "has his or her own nicotine requirement from each cigarette" and "adjusts [his/her]

smoking maneuver" to obtain the desired level of nicotine").

**(3) Brown & Williamson**

2205. Minutes from a January 12-18, 1974 B&W/BATCo conference stated: "[W]hatever the characteristics of cigarettes as determined by smoking machines, the smoker adjusts his pattern to deliver his own nicotine requirements." 109882674-2679 at 2675 (US 21507).

2206. B&W's scientific research on compensation was confirmed by its consumer research on low tar cigarettes, in which smokers reported compensating for the reduced deliveries. For instance, a February 23, 1977 consumer research report, "Consumer Discussions of Low Delivery Cigarettes," written by R.F. Brotzge and W.H. Deines, demonstrates B&W's awareness that low tar smokers were compensating by smoking more cigarettes, stating:

> Findings, in order of importance, to participants in the five focus groups were: 1. Health -- Participants expressed general fears about cancer, emphysema, other lung diseases, etc. Despite these fears, they stated their determination to continue smoking. . . . 5. Compensation -- Participants noted they smoked more low tar cigarettes and received less satisfaction.

679009843-9867 at 9843 (US 85055).

2207. Similarly, a July 25, 1977 B&W Internal Marketing Study, titled "Low ‘Tar' Satisfaction, Step 1 Identification of Perceived and Underperceived Consumer Needs," analyzed smokers' satisfaction with low tar cigarettes with regard to switching behavior, and stated: "It was noted earlier that new arrivals to the Hi-Fi category realize that they are smoking more cigarettes [quoting a study participant]: ‘You can also go down to the lower tar, but increase your smoking. So you're right back where you were.'" The study further noted that "Cigarette consumption, as

reported in a 1976 Consumption Study, increases as nicotine (satisfaction per cigarette) decreases." 775036039-6067 at 6050 (US 21053).

2208. A report bearing the stamp "Brown & Williamson June 24, 1980 R&D Library" prepared by BATCo on April 23, 1980, titled "Compensation: A Review [of] the Relationship Between Compensation and Changes in Cigarette Design," stated that studies indicated that compensation was a permanent phenomenon: "On the basis of the German studies, compensation would therefore be seen as a long-term tendency to permanently adjust towards some preferred (or minimum) level [of nicotine]." 650032329-2385 at 2356 (US 53429); Ivey WD, 68:1-10.

2209. A July 1983 B&W report by W. Wiethaup and W. Schneider, "Filter effects on smoke and smoke effects," stated:

> One factor, which may be responsible for a relatively intensive "strength" impression within a given tar segment, is the "smoke elasticity." The smoke elasticity describes the potential of a cigarette, to provide the smoker with more smoke, if he draws harder. This becomes relevant at least for the first few puffs of a low tar cigarette, as all recent investigations show.

512107109-7120 at 7110 (US 85056).

2210. A March 26, 1999 e-mail from Hugh Honeycutt to Mike Dixon and numerous other BATCo employees referenced B&W's "Atlanta Study," which was conducted by scientist Kelly St. Charles, to examine smoking behavior and puffing profiles for low tar cigarettes. Honeycutt's email expressed concern that "B&W had just made a big splash in the US touting Carlton as the '1' for you," -- a marketing slogan indicating that Carlton delivered only one milligram of tar -- in light of research finding that "smokers of ultra low tar brands like our Carlton 1 mg appeared to actually get 3 mg." of tar. 321155579-5580 at 5579 (US 46683);

2073168412-8414 (US 22024). As of June, 2004, B&W admits that smoker compensation causes Carlton 1 mg smokers, on average, to inhale 5 to 6 times the amount of tar that B&W has advertised. (no bates) (US 88628) (stating "a Carlton 1 mg. smoker will, on average, get 5 to 6 milligrams of tar").

**(4) BATCo**

2211. A BATCo document from the late 1970s, "Why do People Smoke?," reflects BATCo's understanding of compensation, stating that "[n]icotine sustains smoking behaviour," that "smoking behaviour is highly responsive to cigarette design," and that "[a] key determinant of product preference will be the design 'Effort-Reward Gradient,'" i.e., elasticity of delivery. The document added: "Increase in Cigarette Consumption [is] Related to Change in Nicotine Yields," noting that "[m]ost compensation must occur at the individual cigarette level." 403626692-6802 at 6729, 6731, 6734, 6762, 6768 (US 85018*).

2212. An undated BATCo document by Dr. S.J. Green, a Senior Scientist for BATCo Research and Development, titled "Ranking Cigarette Brands on Smoke Deliveries," discussed compensation to equalize nicotine intake in several contexts, including smokers "increas[ing] puff volume to receive the same nicotine" when smoking a lower tar cigarette and smokers "adjust[ing] their smoking behaviour on the basis of nicotine intake." 110077247-7268, at 7247-7250 (US 88643).

2213. A March 11, 1971 report written by D. Creighton, BATCo R&D Research Scientist, and L.M. McGillivray, titled "The Effect of Changed Deliveries at Constant Pressure Drop on Human Smoking Pattern," stated:

> It was found that there is indeed a degree of compensation for the

> reduced delivery. The panel as a whole took larger puffs from the lower delivery cigarette, inhaled the smoke more deeply and held the smoke in the lungs for a longer time. The six individual panel members compensated for changed delivery in different ways, some by increased volumes, and others by increased number of puffs on the lower delivery cigarette.

The report also stated: "An increase in puff volume, but not puff duration, means that subjects must have drawn harder on the lower delivery cigarettes, and that the flow rate was greater during puffing. This implies that smokers are willing to work harder to achieve an optimum delivery from a lower delivery cigarette." The report further stated:

> The fact that the panel compensated for the lower delivery by increasing the depth of inhalation, the depth of exhalation and the total time for which the smoke was held within the body is of particular interest in the light of the finding that more is retained from a puff of smoke that is inhaled deeper, and held within the lungs longer.

757001173-1185 at 1174, 1180 (US 85058); see also 102793967-3980 at 3969 (US 34698).

2214. A June 17, 1975 BATCo document, "Compensation for Changed Delivery," sent to several BATCo employees, including David Geoff Felton, Senior Scientist for BATCo Ltd.'s Research and Development Department, acknowledged that smokers compensate to achieve a stable dose of nicotine:

> A number of experiments . . . have been interpreted as showing that compensation for changed delivery does occur. . . . Our own results showed that when the [tar] to nicotine ratio was changed more smoke was taken from the lower delivery cigarette. . . . My own view is that compensation for changed delivery of nicotine does occur. . . . The weight of evidence at present available is for nicotine compensation [referring to several studies].

105658168-8179, 8168, 8178 (US 85418).

2215. A June 1, 1976 BATCo report, also titled "Compensation for Changed Delivery,"

written by D. Creighton, R&D Research Scientist, concluded that

> the evidence is strongly in support of the hypothesis that many smokers do change the way they smoke in response to cigarette design changes that affect nicotine delivery. . . . The tendency amongst the majority of established smokers is to attempt to equalise nicotine delivery if the cigarette design allows them to do so.

The study further concluded that "[d]ue to the differences in the delivery of individual cigarettes from the same brand . . . and the differences between subjects and within a subject" "[e]qualisation [of nicotine levels] within the range + 20%" was expected. The report stated that "there are eight suggested methods by which a subject may regulate his nicotine intake; any number of which may be used simultaneously or at different times," namely by varying puff volume, puff number, puff distribution, cigarette butt length, puff interval, puff profile, inhalation pattern, and number of cigarettes smoked. 650008449-8480 at 8470, 8460-8462, 8469, 8464 (US 76192).

2216. A June 27, 1978 BATCo memorandum, also titled "Compensation for Changed Delivery," written by Creighton, confirmed BATCo's knowledge that compensation is not temporary, and occurs as a result of a need for nicotine, and contradicted "the advice of Health Authorities" that smokers who would not or could not quit should switch to a lower delivery cigarette:

> It is difficult to ignore the advice of Health Authorities who advise smokers to give up smoking or change to a lower delivery brand but there is now sufficient evidence to challenge the advice to change to a lower delivery brand, at least in the short-term. Numerous experiments have been carried out in Hamburg, Montreal, and Southampton within the company as well as many other experiments by research workers in independent organizations, that show that generally smokers do change their

> smoking patterns in response to changes in the machine smoked deliveries of cigarettes. . . . Further findings from these results were that the modified smoking patterns used to smoke the changed delivery brands were maintained for the month during which they were smoked. This shows that there was no adaptation during that time. . . . In general, a majority of habitual smokers compensate for changed delivery, if they change to a lower delivery brand than their usual brand. . . . If they choose lower delivery brand which has a higher tar to nicotine ratio than their usual brand (which is often the case with lower delivery products) the smokers will in fact increase the amounts of tar and gas phase that they take in, in order to take the same amount of nicotine.

105553905-3914 at 3905, 3907, 3913 (US 34799); Ivey WD, 69:14-70:1.

2217. A June 29, 1979 study written by Creighton, "A Comparison of Smoking Surveys Separated by Four Years," compared the smoking behavior of a group of smokers in 1974 of a cigarette with 1.7 mg nicotine and 27 mg TPM to their behavior in 1978 when smoking a cigarette with a slight reduction in nicotine (by 17% to 1.4 mg) and virtually identical TPM delivery (26 mg). The study found that the group smoked the reduced nicotine cigarette "more intensely" (i.e., increased their puff volume), which likely "equalised" the nicotine delivery of the two cigarettes. The study concluded that "it is probable that as a result of the changes in smoking behaviour observed in this study, subjects took about the same amount of nicotine from the two different cigarettes but, because of changes in TPM to nicotine ratios, received more TPM from the [reduced nicotine cigarette]." The study further found that

> [t]he fact that smokers have changed their smoking patterns to take more smoke from a cigarette with lower nicotine delivery but similar TPM delivery adds support to the contention that nicotine is a major determinant of smoking behavior, and that TPM, as long as it is delivered in sufficient quantity, plays a lesser role.

650008946-8960 at 8948, 8953-8955 (US 85059).

2218. An April 27, 1981 memorandum by Martin Oldman, an employee in BATCo's Research & Development department, to L.C.F. Blackman, Director of BATCo, stated that "[s]ome people appear to smoke for nicotine, others don't . . . nicotine dependent smokers. . . are more likely to compensate for nicotine than others." 105399692-9693 at 9693 (US 85060).

2219. A July 9, 1984 document by Imperial Tobacco Limited, sister company to B&W, was distributed to various B&W and BATCo employees, including: Blackman; A.M. Heath, BATCo Executive Director of Marketing; Erhard Koehn, BATCo Manager of Product Development; Rainier Wernitz, BATCo Manager, Market Research; Tilford Riehl, B&W Division Head of Product Development; A. Mellman, B&W Director of Marketing Research; T. Wilson; Brennan; C.I. Ayers; and G.O. Brooks, BATCo scientist. It acknowledged that smokers who switch to low tar brands increase the number and intensity of puffs taken and number of cigarettes smoked to achieve a higher dose of nicotine: "BRANDS SWITCHING DOWN DELIVERY: increase in puffing parameters -- increase in numbers of cigs. smoked -- more puffs taken means to achieve a higher dose." 536000000-0090 at 0050 (US 22338).

2220. A January 24, 1985 BATCo letter from Charles H. Keith to Lance Reynolds stated:

> [H]uman smokers, even though they ingest much more Nicotine and Tar than is indicated by the FTC values, get about the same amount of Tar and one and a half times the Nicotine from Barclay, Carlton and Cambridge. . . . [I]t is clearly apparent that the human smokers are ingesting much more nicotine and tar than the nominal values obtained by FTC tests. The human levels are six to eight times higher than the normal values.

621096298-6300 at 6298, 6300 (US 76191).

2221. A BATCo document dated October 12, 1987 sent by M.L. Reynolds to H.F.

Dymond (researcher) and H. Ibig, under the heading "Easily Achieved Tar Deliveries from Low Tar Cigarettes," displays a chart depicting the increased tar deliveries of RJR's Now cigarette, and Philip Morris's Merit and Merit Ultra cigarettes, caused by the compensatory behaviors of vent hole blocking, taking more puffs, and taking bigger puffs. This chart shows that these behaviors in combination caused a thirteen-fold increase of tar inhaled for Now cigarettes, a nearly three-fold increase for Merit, and a four-fold increase for Merit Ultima. 400015695-5696 at 5696 (US 85063).

2222. A December 21, 1987 BATCo document with subject heading "Notes on Meeting With Dr. Eicher" written by "HFD" (H.F. Dymond, researcher) and sent to Nick Cannar and several B&W and BATCo personnel, stated: "BAT acknowledged the discussion on compensation and described how channel ventilation was an alternative form of ventilation, both systems could be manipulated by a consumer. Other companies were also beginning to acknowledge compensation, but they were reluctant to debate the issue in public." 400015634-5635 at 5634 (US 85064).

2223. A May 6, 1992 BATCo report, titled "Topics In Smoking and Health ‘Bible'" stated:

> [T]he expression of product smoke deliveries in the form of a league table, while understandable, can be misleading. There can be no guarantee that a smoker who switches from one product to another delivering a lower “tar” value will thereby reduce his intake of “tar.” He may well alter the way he smokes the second product in some subtle fashion and so adjust his intake of smoke to fit his needs. In this way, he may inadvertently increase his intake of other substances in the smoke. League tables and delivery data on products may, therefore, be misleading to the consumer, who will be unaware of the sub-conscious ways in which he manipulates his own behaviour . . . smokers of higher delivery

> cigarettes may find that they need to smoke more low delivery cigarettes to achieve the same satisfaction. . . . Increasingly smokers will accept the alleged harmfulness of smoking, and while wishing to continue will look for health reassurance brands. . . . Smoking behaviour is also of importance. For example research into the effects of low tar and nicotine cigarettes on ease of quitting smoking will be undertaken.

500887584-7709 at 7606-7607, 7614, 7679, 7704 (US 20656).

**(5) American Tobacco**

2224. A November 11, 1976 report prepared by Fay Ennis Creative Research Services for F. William Free & Company, an advertising agency used by American, demonstrates American's awareness that smokers of low tar cigarettes employed several different methods of smoker compensation. The report summarized focus group sessions relating to low tar cigarettes. When asked about Now and Carlton cigarettes, the panelists "concluded that you would smoke twice as much of this type of cigarette in order to get any satisfaction. One man said that he didn't like the draw on these cigarettes because he had to puff so hard, his throat tickled." When asked to define a low tar cigarette, some panelists stated: "You have to drag on the cigarette ‘real' hard to get any satisfaction out of it." ATC0137310-7324 at 7319-7320 (US 87916).

**(6) Lorillard**

2225. A July 16, 1976 Lorillard memorandum from M.S. Ireland to H.J. Minnemeyer on the subject of "Research Proposal -- Development of Assay for Free Nicotine" revealed Lorillard's awareness of smoker compensation:

> Cigarette sales are made for one reason. The customer is satisfied with the product either from the taste or the physiological satisfaction derived from the smoke. The consensus of opinion derived from a review of the literature on the subject indicates the most probable reason for the addictive properties of the smoke is

> the nicotine. Indications are that the smoker adjusts his smoking habits to satisfy the desire for nicotine either by frequent or large puffs on the cigarette, or smoking a large number of cigarettes.

00044522-4523 at 4522 (US 22012); 94937037-7038 at 7037 (US 56775).

2226. A December 10, 1976 document by H.S. Tong, which included a review of the scientific literature, reached several conclusions confirming Lorillard's understanding that smokers compensate to receive their desired level of nicotine:

> It seems that, within limits, smokers can and do control their nicotine intake from smoke by varying their smoking techniques. . . . Smokers were known to smoke more when offered low nicotine cigarettes. . . . It would seem desirable to have a low tar cigarette with a nicotine content between the threshold and optimum doses level.

00045061-5071 at 5061-5063, 5068 (US 34210).

2227. A July 30, 1980 Lorillard memorandum, "A Review of Behavioral and Psychopharmacological Factors in Smoking," from S.T. Jones (Product Design), included conclusions by Lorillard personnel based on review of scientific articles in the literature, including the following: "The evidence to date clearly indicates that smokers titrate or regulate their intake of nicotine, e.g. smokers of cigarettes which deliver large amounts of nicotine will adjust -- when given low nicotine cigarettes -- their smoking to get a larger nicotine dose than the machine determined values indicate." Lorillard also independently acknowledged that, in the 1980s, it knew that smokers of low tar/low nicotine cigarettes would compensate by altering their smoking habits in order to obtain a higher level of nicotine. 01105000-5021 at 5010 (US 20030); Spears PD, State of Minnesota v. Philip Morris Inc., 9/23/97, 62:29-65:11.

2228. An August 21, 1984 Lorillard memorandum from E-Chung Wu to W.R. Deaton,

reporting on a "puff profile study of 15 brands of cigarettes . . . with 5 smoking panel members" acknowledged smoker compensation: "The general trend shows that puff volume increases with the decrease of both TPM or nicotine. . . . Obviously, the higher dilution of smoke needs larger volume to compensate for the decrease of the flavor or nicotine." 89213491-3501 at 3491 (US 56466).

### 3. Defendants Internally Recognized that Smokers Switch to Low Tar/Light Cigarettes, Rather than Quit Smoking, Because They Believe They Are Less Harmful

2229. The evidence shows that even though low tar smokers may have a greater desire to quit, the misperception of increased safety associated with low tar cigarettes persuades them to avoid quitting. Research shows that most low tar cigarette smokers have made a greater number of quit attempts than smokers of full flavor cigarettes, or were more likely to have considered quitting. (Weinstein WD, 56:21-57:8 (citing Giovino, et al., 1996)).

2230. Many smokers who were concerned about the risks of smoking responded by switching to low tar cigarettes instead of quitting. Burns WD, 46:21-47:9.

2231. “There is profound harm" for people who smoke low tar cigarettes. As Dr. Burns explained:

> The vast majority of people who smoke are addicted. They're interested in quitting but are unable to do so. . . . To provide smokers an alternative that says you don't have to quit, you can use this other type of cigarette, to intercept them on the way to quitting smoking is a profound harm because they continue to smoke longer than they might have otherwise. Some of those people who switched might have . . . been successful in quitting, and when they did that, they would have in actuality reduced their disease risks. And those individuals have been profoundly harmed.

Burns WD, 1:10-15; 12:10-11; 61:14-62:4; Burns TT, 2/15/05, 13311:9-15.

2232. The 2004 Report of the Surgeon General noted that "[r]esearch has demonstrated that with the expectation of reducing risk, many smokers switched to low machine-measured tar/nicotine cigarettes, and may thus have been deterred from quitting". TLT0930001-0949 at 0911 (US 88621). NCI Monograph 13 noted that "substantial numbers of smokers" switched to cigarettes with lower machine-measured tar yields "in an effort to reduce their disease risks," and that "[t]he switch to low machine-measured-yield cigarettes with the illusion of risk reduction was, therefore, substituted for a real risk reduction that would have occurred had the smoker quit smoking altogether." DXA0310399-0650 at 0418 (US 58700).

2233. As demonstrated below, Defendants conducted extensive research on quitting to help them identify and understand potential quitters (i.e., smokers who were "concerned" and "uncomfortable" with the fact that they smoke) and design marketing that would dissuade them from quitting. Defendants' internal documents demonstrate their recognition that smokers interested in quitting smoking were instead switching to low tar cigarettes under the mistaken belief that doing so would either help them quit or be better for their health.

2234. For example, a 1987 National Health Interview Survey showed that 44% of current smokers had, at some point, switched to low tar cigarettes to reduce their health risk. Weinstein WD, 53:19-22 (citing, Giovino, et al., 1996). Correspondingly, another national survey showed that 58% of ultra light smokers and 39% of light smokers chose those cigarettes to reduce their health risks without having to quit. Furthermore, 49% of ultra light smokers and 30% of light smokers did so as a step toward quitting. Weinstein WD, 53:23-54:7 (citing, Kozlowski, Goldberg, et al., 1998). Finally, the 1993 Teenage Attitudes and Practices Survey showed that 21% of light or ultra light cigarette smokers chose those brands because they

perceived them to be healthier. Weinstein WD, 54:13-15 (citing Giovino, et al., 1996).

2235. According to Dr. William Farone, former Director of Applied Research at Philip Morris, one reason that low tar cigarettes "are more dangerous" than full-flavor cigarettes is that "they lead people to believe they are [safer] so that they smoke them in manners that cause them to get just as much toxins." Farone WD, 2:2-8; 2:15-19; Farone TT, 10/7/04, 1878:16-22; Farone TT, 10/12/04, 2171:25-2172:8; 2182:11-2190:7.

2236. Dr. Farone explained that:

> The problem is that when people see that word "light," it is my opinion that they believe it's safer and, in fact, it isn't, so that's what this is all about . . . they are more dangerous because people are smoking them thinking they are doing themselves some good, they think they are safer . . . there is no benefit to a smoker from Marlboro Lights compared to Marlboro. That's the main point. So that makes it more dangerous.

Farone TT, 10/7/04, 1865:9-23.

2237. Smokers of light and ultra light cigarettes are more concerned about the risks of smoking than smokers of full flavor cigarettes. A 1986 CDC control study showed that 85% of those who switched from full flavored cigarettes to light or ultra light cigarettes were concerned about the health risks of smoking, as compared to 70% of full flavor smokers. Weinstein WD, 56:13-20 (citing Giovino, et al., 1996). Ultra light smokers are also more likely to use tar numbers in judging the relative risk of cigarettes. A study showed that 56% of ultra light smokers rely on tar numbers to determine cigarette safety, as compared to 14% of the overall sample. Moreover, 83% of the ultra light smokers believed that switching from a 20 mg to a 5 mg cigarette would significantly reduce health risks, whereas 50% of other smokers shared that same belief. Weinstein WD, 56:3-12 (citing Cohen, J.B., Ch. 9 of Monograph 7,

"Consumer/smoker Perceptions of Federal Trade Commission Tar Ratings").

### a. Defendants Recognized that Smokers Choose Light/Low Tar Cigarettes for a Perceived Health Benefit

2238. Defendants have stated publicly that they produce low tar cigarettes only to accommodate consumer taste preferences for "lighter," "milder" tasting cigarettes, and that they do not intend their use of brand descriptors or their marketing of low tar cigarettes to imply a less harmful product. See Section V(E)(5), infra (discussing Defendants' false statements regarding their low tar cigarette marketing). Contrary to their public statements, however, Defendants' internal marketing documents establish that Defendants have known for decades that even though consumers prefer the taste of regular cigarettes to low tar cigarettes, they are willing to forgo them and smoke low tar cigarettes, which are less enjoyable and have a less appealing taste, because they believe low tar cigarettes are better for their health.

#### (1) Philip Morris

2239. According to Jeanne Bonhomme, Director of Consumer Insights for Philip Morris, in her experience, "there is a general perception among consumers that as you go down in tar, cigarettes have less taste." For this reason, Philip Morris planned to produce a low tar Merit cigarette that tasted like a cigarette with higher tar. A June 30, 1993 document from a Philip Morris USA New Products Meeting, titled "Marlboro New Product Development," stated that the "Project" was to "[b]uild the Merit business by introducing a 3 mg product that tastes like a 5 mg." Philip Morris also planned to "[d]evelop a 6 mg Tar Cigarette with the Sensory Attributes of an 8-9 mg Tar Cigarette." Bonhomme WD, 56:13-57:6; 2041453659-3754 at 3681, 3743 (US 23906); see also 2021323470-3540 at 3478 (US 85034*) (Philip Morris's 1992 R&D Operational

Plans for the Product Development Department issued to Cliff Lilly of Philip Morris USA included the following objectives: "Design and develop an 3 mg [Merit] product with the subjective attributes of a 6 mg cigarette. . . . Design and develop a 6 mg [Merit] product with the subjective attributes of a [sic] 8 mg cigarette. . . . Develop 6 mg [Marlboro Ultra Lights] line extension . . . providing enhanced subjective quality and Marlboro character. . . . LOW TAR HIGH FLAVOR Objective: Develop new technologies which will allow us, within the next two to four years, to produce ‘Ultra Low' tar, 2 to 4 mg, cigarettes with the sensorial experience of ‘Lights' or ‘Full Flavored' cigarettes").

2240. Bonhomme added that "Philip Morris's own marketing research shows that there are consumers who switch to low tar cigarettes even though they do not prefer the taste or flavor, because they believe it is better for them," and that "for those people the reason for switching to a low tar brand is not taste or flavor, but perceived health benefits." Bonhomme admitted that these smokers are willing to sacrifice taste for perceived health benefits. Bonhomme WD, 56:6-12; 60:21-61:1; 63:13-18.

2241. Bonhomme explained that Philip Morris's Merit brand of cigarettes utilized a marketing strategy, titled "Merit Solutions," that was intended to communicate to consumers that "Merit was a solution to the problem of finding a low tar brand with good taste." Bonhomme WD, 59:10-17.

2242. Defendants' own expert, A. Clifton Lilly, Vice President of Technology and Research for Philip Morris, demonstrated that Philip Morris did not intend to market Merit as a "lighter tasting" cigarette, but rather as one that tasted just like a full flavor cigarette, yet with a health benefit. Lilly testified that:

> The Merit brand, as I remember, came out in 1976. . . . R&D did a lot of basic research on taking tobacco and actually getting compounds for a flavor system that were the most flavorful ones in smoke, so that the cigarette would be lower tar but taste like it was more like the popular cigarettes, and they were all at that time full flavor.

Lilly PD, Engle v. R.J. Reynolds Tobacco Co., 5/7/98, 34:3-39:2.

2243. An undated Philip Morris document, titled "Background Information on Philip Morris Brands," included "Benefit Statements" for Philip Morris's various "light" brands that revealed Philip Morris's intent was not to market these cigarettes as "lighter" tasting, but rather as cigarettes that taste like full-flavor cigarettes with the extra purported benefit of low tar and nicotine:

- Marlboro Medium: "gives you a flavorful smoke in a low tar cigarette" and "bridges the flavor gap between low tar and full flavor cigarettes."

- Benson & Hedges 100's Lights: "premium tobacco flavor in a satisfying low tar smoke."

- Benson & Hedges 100's Deluxe Ultralights: "only 5 mg tar, yet is rich enough to be called Deluxe . . . is an ultra low tar cigarette that gives you satisfying taste . . . delivers cool, rich taste with only 5 mg tar."

- Merit: "You'll enjoy low tar and good flavor. . . . At only 7 mg tar, Merit delivers the rich flavor of leading cigarettes with twice the tar . . . get rich menthol flavor at only 8 mg tar."

- Merit 100's: "flavor that makes low tar and good taste a reality for 100's smokers."

- Merit Ultra Lights: "cool, flavorful smoke with only 5mg tar."

- Merit Ultra Lights 100's: "an ultra light with flavor."

- Virginia Slims Ultra Lights: "gives flavor and taste -- and is an ultra low tar smoke."

- Parliament Lights: "enjoyable taste in a low tar cigarette."

2070143183-4433 at 3209, 3211-3212, 3214-3215, 3219, 3222 (US 40253).

2244. A November 15, 1971 document to James Morgan, former CEO of Philip Morris, from the Marketing Research Department, bearing the letterhead "Philip Morris U.S.A. Inter-Office Correspondence," set forth results of a Philip Morris consumer research study on Marlboro Lights. Under the heading "Likes and Dislikes," the report stated: "Complaints continued to center around taste mentions (23%) and too mild (22%)." 1000292744-2762 at 2745 (US 35205).

2245. According to Morgan, Philip Morris did not intend for the name Marlboro Lights to communicate that it had light or lighter taste:

> I have trouble in describing what light taste really means. . . . Light taste, first of all, is not a positive attribute if it does mean anything . . . in my judgment, light taste is really a meaningless and nebulous claim . . . the bigger proposition is the lower tar and nicotine. . . . We are not talking, in my judgment, talking about light . . . as a taste. It's not a term that means anything in terms of taste, and the name Marlboro Lights as I said before, a word which we feel has appeal in a different sense than suggesting what the cigarette even tastes like.

Morgan PD, Philip Morris Inc., 10/15/74, 82:25-83:13; 85:9-15; 85:17-86:4.

2246. Around the time of the launch of Marlboro Lights in 1974, a marketing dilemma existed for Philip Morris: on the one hand, the fact that a cigarette had a "lighter taste" was a negative limitation in the minds of consumers that made the cigarettes more difficult to sell, but, on the other hand, the term "light" also conveyed the beneficial message of low tar. Morgan PD,

Price, 6/5/02, 39:19-25, 40:2-25, 41:2.

2247. Philip Morris's Marketing and Research and Development departments held regularly scheduled meetings where they discussed, among other things, how to increase the market for low tar cigarettes through research and development. Many discussions focused on the poor taste of low tar cigarettes:

> marketing . . . kept saying people don't like the taste of a low tar cigarette. They are finding it unsatisfactory. . . . What can we do to develop a low tar cigarette that really tastes good. That to me looks like the great market opportunity. I remember lots of discussions about that.

Morgan PD, Price, 6/5/02, 95:13-25, 96:2-25, 97:2-25, 98:2-25, 99:2-25.

2248. According to Ellen Merlo, then Senior Vice President of Corporate Affairs at Philip Morris USA, "there was a general perception that low tar cigarettes did not taste as good as full flavor cigarettes." Merlo added that Philip Morris's Merit cigarette "was the first free standing cigarette entry in the light category that was positioned as tasting good." Merlo PD, Price v. Philip Morris, 10/2/02, 152:12-153:10.

2249. An October 1975 Philip Morris USA Special Report distributed widely throughout the Research Center, titled "Low Delivery Cigarettes and Increased Nicotine/Tar Ratios, a Replication," urged development of a "low delivery cigarette that will both look and taste like a regular filter cigarette and thus will appeal to current regular filter smokers." The document further stated:

> If a low delivery cigarette with impact and flavor were developed, it may cause the segment of current regular filter smokers who are concerned about their health but demand a flavorful cigarette to voluntarily switch to the low delivery cigarette. . . . Furthermore, some portion of current low delivery smokers may desire to switch

> to a more flavorful cigarette and others may follow as consumer experience results in changing the image of low delivery cigarettes so that smokers believe a flavorful cigarette can really be 'healthy'.

1003288950-8967 at 8951, 8954, 8952 (US 20166).

2250. Draft remarks of the Philip Morris Merit cigarette team, dated January 7, 1976, acknowledged explicitly that low tar cigarettes appealed to smokers because of their purported reduced harmfulness:

> Undoubtedly because of the health allegations against cigarettes, many smokers have clearly wanted cigarettes that deliver less and less tar. . . . [D]espite the intense promotion efforts and the strong interest among smokers, . . . [t]hey have been tried and rejected by the overwhelming majority of smokers. Obviously, there has been a conflict between the desire for low tar and the desire for the rich, satisfying taste that until now has been associated with higher tar delivery.

PM3000136418-6422 at 6420-6421 (US 61504).

2251. A 1979 Philip Morris Merit advertisement, titled "Merit Taste Eases Low Tar Decision," appeared in national magazines, stating:

> “Enriched Flavor” tobacco proving real alternative to high tar smoking. . . . Confirmed: Majority of high tar smokers rate MERIT taste equal to -- or better than -- leading high tar cigarettes tested! <u>Cigarettes having up to twice the tar</u>. [Merit's] ability to satisfy over long periods of time could be the most important evidence to date that MERIT science has produced what it claims: The first real alternative for high tar smokers.

1002325022-5022 (US 21510) (emphasis in original).

2252. A January 1979 study prepared for Philip Morris by Goldstein/Krall Marketing Resources, Inc., discusses consumers’ perception of light cigarettes: "There appears to be a concept involved that might be called ‘limiting.' They have moved to limit their tar and nicotine

intake. At the same time they have accepted a limit on taste." 2040066740-6766 at 6755 (US 20435).

2253. According to Nancy Lund, Senior Vice President of Marketing for Philip Morris, when light cigarettes were first introduced, their largest drawback was that consumers disliked their taste. In fact, nine out of ten consumers reported dissatisfaction with the taste of light/low tar cigarettes. She acknowledged that smokers were buying them, nonetheless, because they were perceived to be less harmful. An April 20, 1987 memorandum on Leo Burnett letterhead from Elinor Bowen of Leo Burnett and Carolyn Levy of Philip Morris addressed to Nancy Brennan (later Nancy Brennan-Lund) of Philip Morris, among others, commented on light cigarettes generally: "Thus far in the cigarette category, lightness has been associated with low tar or ultra low tar products which represent, for many smokers, an absence of taste and an avoidance of problems associated with smoking." Brennan-Lund PD, Price, 9/20/02, 140:14-144:11, 186:12-189:19; 2040904809-4811 at 4809 (US 85035).

2254. A Philip Morris document circa 1979 prepared by Judy John and Helmut Wakeham, titled "Breakthrough of the High Taste, Low Tar Cigarette: A Case History of Innovation," stated that although consumer demand for low tar cigarettes was spurred by indications that cigarette smoking caused disease in humans, "market research analysis ha[d] shown that nine out of ten smokers had tried low-tar brands, but had failed to accept them as their choice of cigarette." The document also stated: "Apparently not enough smokers could adapt to the diminished ‘flavor' of the highly filtered low-tar cigarettes available at that time." 1000208603-8625 at 8605 (US 85010) (internal citation omitted).

2255. A September 1991 Philip Morris document, titled "Background Information on

PM Brands," stated that, notwithstanding the introduction of Marlboro Lights in 1972 and the introduction of several variations on Marlboro Lights in 1978, 1980 and 1984, when Marlboro Medium was introduced in 1991, "consumers [were] still looking for a satisfying low tar cigarette with flavor." Marlboro Medium apparently "was successful in bridging the flavor gap between full flavor Marlboro and Marlboro Lights." 2070143183-4433 at 3206 (US 40253).

2256. A June 1, 1994 document prepared for Philip Morris by Kane, Bortree & Associates, Inc., in its "Conclusions Product/Positionings" section, reported that Merit's "We Lowered The Tar . . . But Kept The Taste" slogan "generated interest among male Low Tar Seekers because of the fact that they are committed to lowering their tar consumption." The concept of lowering the tar, but keeping the taste, was referred to as a "product improvement." 2045629674-9712 at 9696 (US 88630).

2257. A March 26, 1996 memorandum from Shari Teitelbaum, to Jodi Sansone, then Brand Manager for Merit cigarettes, accompanying a consumer research report commissioned by Philip Morris, explained that once consumers made the decision to switch down to the category of low tar cigarettes based on health concerns, they then select their low tar brand within that category based on taste preference. Under the heading "Reasons for and Perceived Benefits of Smoking Lowest Brands," the document stated: "Although many of these smokers made the decision to go lighter based on perceived health concerns, taste seemed the major reason to choose or stay within a particular brand." 2045628312-8328 at 8312, 8321 (US 22217).

2258. A February 9, 1998 draft research report prepared for Philip Morris by the research firm Kane, Bortree & Associates, titled "Merit Strategic Revitalization Plan, Stage I Learnings," analyzed ways to "build Merit's share of the low tar segment." The report labeled as

“Taste Compromisers” low tar smokers who find the taste of light cigarettes unsatisfying but feel comfortable smoking them because of perceived health benefits. An example of their thought process is the following:

> I feel that I can really taste the difference between cigarettes. I try to smoke the best tasting light since I know that smoking a light is better for me. I feel that smoking a light is a huge tradeoff but I know that it's worth it. I much prefer full flavor taste and do not think it's too strong. I choose my brand on taste. I feel like I am on a permanent “diet” because I smoke a light.

The report listed Winston Lights, Marlboro Lights, and Camel Lights as brands for taste compromisers. 2063687348-7527 at 7362, 7357 (US 39820*); Bonhomme WD, 45:1-22; see also, 2063686921-6942 at 6924 (US 88629) (indicating that a goal of Kane Bortree was to "[i]dentify marketable positioning opportunity(ies) for revitalizing Merit via low tar technology (3 mg tar cigarette that smokes like a 5 mg tar or possibly higher levels)").

2259. Under the heading "Consumer Learnings," the February 1998 draft report noted that "Merit can secondarily target Taste Compromisers by promoting taste," and under the heading "Preliminary Recommendations," the report recommended that Merit "[p]romote the benefits of light flavor rather than ‘apologizing' for the fact that it is less than full flavor." Under the heading "Positioning Learnings" and the subheading "Exploratory Positionings," the report stated: "'Low tar' should not be highlighted, but may be needed as reassurance to more health conscious smokers." 2063687348-7527 at 7352, 7354, 7376 (US 39820*).

2260. An October 5, 1998 internal Philip Morris presentation regarding Philip Morris's premium cigarette brands discussed the Merit brand's positioning. Under the heading "Merit -- Brand Essence," the document stated that "[s]ince the brand's introduction twenty-two years ago,

the core Merit proposition has been low tar with satisfying good taste. Merit is the brand that understands the desire to seek a lower tar alternative." Under the heading "Merit -- Brand Strategy," the document said that Merit's strategy was to "Convince: Smokers who want to switch to a low tar alternative, but won't sacrifice taste completely, That: With Merit, you can switch down to lower tar and still enjoy smoking Because: Merit delivers satisfying taste at every level of low tar." 2063690668-0687 at 0675-76 (US 39825).

**(2) R.J. Reynolds**

2261. An April 1974 Qualitative Consumer Evaluation for four Winston Lights Positionings noted that those who liked Winston Lights believed that a low tar cigarette was a "'safe' cigarette." Consumers were excited by the possibility of having full flavor and low tar simultaneously because it offered "a 'safe' cigarette with a taste if not exactly the same at least similar to their current brand." The report stated that "[t]hey were generally skeptical that a less harmful cigarette could give them what they want in a cigarette -- taste -- or would the taste be sacrificed in some way." Communications with smokers indicated that the target audience was "concerned about the harmful effects of smoking and would be glad to switch to a brand which could deliver good taste with low tar and nicotine." 502041366-1415 at 1373, 1383, 1385-1386 (US 22147).

2262. A 1975 report, titled "An Evaluation of the 120MM Market and Its Potential for RJR," recognized that "smokers of High Filtration brands . . . feel the low tar and nicotine brands are much safer and much less of a health hazard. They are readily willing to sacrifice taste for a 'longer life.'" 500671364-1454 at 1436-1437 (US 22158).

2263. A circa 1976 Doral Brand Performance report noted, in a section titled "Other

Brand Measurements Psychographics," that with respect to lifestyle, Doral smokers (relative to smokers overall) were "more conscious and anxious about health" and, with respect to attitudes and needs, would "sacrifice taste to get lowest 'tar' and nicotine." 501229581-9590 at 9589 (US 22118).

2264. A 1979 study related to Camel Lights indicates that the marketing campaign stressed that Camel Lights provided a product to individuals who wanted to smoke a low tar cigarette, but did not want to compromise on "rich taste and smoking satisfaction." The message itself was "a specific low tar message." 500731672-1707 (US 22168).

2265. A June 21, 1982 Product Research Report on Non-Menthol Ultra Low Tar Consumer Probes, published by the RJR Marketing Development Department, classified ultra low tar non-menthol smokers into two groups: (1) smokers who are extremely concerned about tar levels and (2) smokers who are moderately concerned about tar levels. The report went on to explain that "extremely concerned" smokers "primarily seek products that are lowest in tar. These smokers are willing to trade-off such smoking benefits as strength, taste/flavor and ease of draw for brands which may not deliver these benefits but which are lowest in tar." The report also explained that as compared to smokers of higher tar brands, "respondents generally characterized ULT cigarettes as having a harder draw, reduced smoke density -- which they expressed as 'smoking air,' less taste/strength/flavor, and less smoking sensation." 503394459-4485 at 4460-4461, 4463, 4467 (US 85036); Schindler WD, 75:14-76:16.

2266. A 1984 Vantage Family "Moderation" Situation Analysis explained that "relative to other segments, 'Moderator' smokers realize there are both positive and negative aspects of smoking, resulting in a desire to resolve the conflict by compromising/moderating on their brand

choice." This process was depicted as adding the positives of smoking (personal ritual, anxiety reduction, social confidence) to the negatives of smoking (alleged health hazards and smoker image), compromising on the idea of taste and satisfaction with low tar products, and the image that they are "doing something positive." 502118237-8267 at 8241 (US 22119).

2267. A December 16, 1988 RJR marketing presentation stated that: "For a successful product the perceived health benefit must balance any sacrifice that must be made in terms of taste, satisfaction and traditional smoking pleasures." 650900829-0849 at 0831 (US 20951).

2268. In 1990, RJR undertook a marketing campaign promoting the fact that Now cigarettes had the lowest tar and nicotine levels of any product in the industry. The campaign focused solely on the fact of Now's "lowest" tar and nicotine levels not on taste. Some of the advertisements implicitly admitted that good "flavor" or "taste" was intuitively less likely in a low tar cigarette. For example, one advertisement asked, "Merit Ultra Lights Smokers: Is there a way to get 60% less tar and nicotine and still get flavor in a cigarette? NOW is the way." Similarly, another advertisement asked, "Benson & Hedges Deluxe Ultra Lights Smokers: Can you get 50% less tar and nicotine and still get taste in a cigarette? NOW you can." Still another advertisement asked, "True Smokers: How can you get 67% less tar and nicotine and still get real cigarette taste? NOW is how." Finally, an advertisement in this campaign asked, "Carlton Smokers: Can a cigarette have just 2 mgs. of tar and still be satisfying to smoke? NOW can." Along those same lines, one of the advertisements indicated, "THE LOWEST IN TAR & NICOTINE. Try Now. Surprisingly good taste." 2070717114-7436 at 7334, 7336, 7408, 7410, 7432 (US 22172*).

2269. A May 1991 consumer research report prepared for RJR, titled "R.J. Reynolds

Project XB," stated: "Most respondents are interested in a new cigarette that could deliver the great taste and easy draw of current brands, with low tar equivalent to Carlton or NOW. They recognize Carlton and NOW are very low tar, but they perceive the taste and draw to be disappointing." The document further stated that "[r]espondents suspect there is a correlation between reducing the amount of tar and weakening the taste." As a "positive" of a proposed marketing concept, the document stated: "There is interest in an extra low tar cigarette that tastes great and has an easy draw. There is a consensus a lower tar product would be better for them." As a "positive" of a different proposed marketing concept, the document stated: "Respondents, especially women, feel this cigarette could alleviate their concerns about tar levels. They expect the cigarette to be better for them." 514343517-3566 at 3559 (US 51848).

**(3) Brown & Williamson**

2270. According to Sharon Smith, former B&W Director of Marketing Services and Operations, internal B&W research documents "indicate that some smokers are willing to smoke low tar cigarettes, even though these smokers feel they don't taste as good." Smith WD, 52:7-16, 55:16-22.

2271. A January 1977 report prepared for B&W by Post Keyes Gardner, Inc., stated that "health" was the most important driver of consumer trends, compared to mildness, which would not, of itself, cause smokers to switch brands:

> "Health": In our opinion, this is by far the most important factor and trend in the market. All major shifts in smoking habits seem to be a function of “health” concerns, as they pose a deep psychological question that every smoker must somehow answer. The manifestation of “health” concerns can be seen in the filter revolution of the 1950's, the emergence of menthol, as well as new hifi's in the 1960's and today. . . . Mildness: This is more or less a

> taste experience. It is best characterized by the acceptance of filter cigarettes -- not the reason for them. In our view, mildness is not a dominant trend, and thus does not cause major shifts in smoking habits. . . . It, therefore, is unlikely that smokers would switch to milder cigarettes primarily because they are milder. We suspect that the deeper concern of "health" is the dominant motivator to mildness. . . . Some smokers will seek justification (rationalization) for staying with a full taste brand, others will move on to the continuing compromise of less satisfaction while continuing to smoke [by switching to low tar cigarettes] . . . the latest compromise between taste and tar.

Sharon Smith admitted that this document shows that some smokers "were choosing their cigarette not due to a preference for a "milder" tasting cigarette, but out of health concerns." 776158413-8426 at 8418, 8419, 8425 (US 22339); Smith WD, 54:21-56:15.

2272. A July 25, 1977 B&W internal marketing study stated: "It must be assumed that Full Taste smokers come down to 'low tar' expecting less taste . . . [t]hey are willing to compromise taste expectations for health reassurance." 775036039-6067 at 6052 (US 21053); Ivey WD, 57:11-58:11.

2273. An October 1979 B&W "History and Key Trends in the U.S. Cigarette Market" compiled by E.T. Parrack, Vice President of Brand Management, stated that some of the then "new products" such as Merit and Real "seem to be capable of attracting some smokers from the Full Taste segment, thus drastically changing the terms of the basic tradeoff between taste and low tar in effect for 25 years." The paper added:

> Viceroy [is] perceived as smooth and perhaps mellow, but it is not significantly weak, mild, bland or light as are the Hi-Fi brands. . . . STRATEGIC ALTERNATIVE Increase Viceroy share of market by positioning Viceroy between full-filter flavor and Hi-Fi as the ideal compromise between the need for full taste and the need for low tar.

The document added that some smokers "have struck a compromise between taste/satisfaction and personal concerns. They smoke low ‘tar' line extensions hoping for the full taste of high ‘tar' brands and the relative benefits of lower ‘tar.'" 670624932-5364 at 4942, 5102, 5157, 5240 (US 53869). Again, Sharon Smith admitted that "this document indicates that Brown & Williamson was aware that some smokers smoke lower tar cigarettes even though they prefer the taste of higher tar cigarettes because they wish to lower their tar intake." Smith WD, 52:17-53:21.

2274. A March 12, 1981 B&W memorandum from Sue Finley to B.L. McCafferty, titled "Apollo Strategy Recommendation," revealed that consumers were smoking ultra low tar cigarettes because they wanted to lower their tar intake, despite the fact that they disliked the taste:

> In 1980 the number of ultra low “tar” (1-6 mg ‘tar') cigarette brand styles on the market went from 24 to 38 and the segment's share grew from 6.28% in 1979 to 8.73% in the 4th Quarter of 1980. . . . The segment's growth has been generated primarily by smokers' “tar” concerns, as most of the ULT products have no other perceivable consumer benefits. The products are considered extremely hard to draw and weak tasting. In qualitative research, smokers have said that drawing on ultra low products could “cause hernias” and that they taste like “sucking straws” and “there's nothing to them. . . .” While cigarette marketing has historically been image oriented, initial ultra low “tar” cigarette advertising was very clinical. All ULT brands advertised extremely low “tar” with little, if any, taste support or smoker imagery.

Discussing the marketing for the proposed new ultra low tar cigarette, APOLLO, the Memorandum stated:

> Smokers are subjected to relentless pressures to quit smoking or reduce “tar.” They continue to smoke because they derive pleasure from the experience and, while they may trade down in “tar,” they view “tar” reductions as pleasure reductions. To make the switch to low “tar” a more satisfying experience, APOLLO should be

presented in a positive, warm and enjoyable manner.

Sharon Smith explained that "this document states that people were smoking ultra lights because they wanted to lower their tar intake, despite the fact that they viewed it as a pleasure reduction." 670635571-5593 at 5571, 5576 (US 85037).

2275. An April 1985 consumer research report prepared for B&W by ADI Research, Inc., titled "Brown & Williamson Tobacco Corporation Light and Ultra Light Smokers Concept Reaction Study" stated: "The light and ultra light categories are problematic to consumers because of problems with taste and inhaling and drawing. There is overwhelming agreement by all groups." The report discussed how Barclay's position was succeeding at getting consumers to believe that Barclay provided a solution to taste and draw problems. The report also noted, however, that "[t]hose in the minority that did not perceive a solution thought there would be drawbacks. If Barclay is better tasting and drawing, then it would have to be higher in tar and nicotine, hence, less safe and more harmful." 465626645-6722 at 6647, 6656-6657 (US 87911).

2276. A B&W document circa 1996-1997, titled "Carlton Creative Plans," stated that "CARLTON is the trademark of choice for smokers who have made an intellectual decision to seek the 'lowest' in tar and nicotine without unduly compromising taste." Carlton's "TARGET AUDIENCE" was described as: "Smokers who want to cut down in tar and nicotine as much as possible and are willing to sacrifice some product performance." The first "Primary" trait of the target audience was "Health conscious." The then-current brand positioning of Carlton as "The Lowest" was said to "satisf[y] the brand positioning." 176020783-0800 at 0783-0786 (US 23351).

2277. A B&W document, titled "B&W 1997-1999 Plan," indicated that consumers

"switch down" in tar primarily for health reasons, and that this switch down in tar represents a sacrifice in terms of cigarette taste. "Carlton Target Markets" were identified as

> Smokers Who Want To Cut Down In Tar And Nicotine As Much As Possible And Are Willing To Sacrifice Some Product Performance -- Primary -- health conscious. . . . CARLTON Is The Trademark Of Choice For Smokers Who Have Made An Intellectual Decision To Seek The 'Lowest' In Tar And Nicotine Without Unduly Compromising Taste.

The document even discussed plans to reduce the emphasis on taste indicated by Carlton packaging to ensure that the message that Carlton had lowest tar and nicotine was conveyed: "CARLTON's Packaging May Contribute To The Low Awareness Of The 'Lowest' Tar Positioning By Communicating A Higher Level Of Tar And Taste Than The Product Actually Delivers." 462224560-4766 at 4706, 4709-4711 (US 22085) (emphasis in original).

2278. A B&W document faxed from "Marketing Operations" on January 20, 1999, titled "Current Trends in Lights and Ultra Lights," stated under the heading "Learnings": "Consumers were ready for low tar before Marlboro Lights. Health concerns. . . . First low tar cigarettes failed due to: Lack of flavor and smoking satisfaction. . . . Smokability is critical for success." 430403186-3194 at 3193-3194 (US 22084); Ivey WD, 58:11-22.

**(4) BATCo**

2279. A September 1992 BATCo Business Review prepared by Norma Simamane, BATCo Lights Project Manager, stated, regarding low tar cigarettes, that consumers felt that "'[t]he lower the [tar and nicotine] numbers, the higher the sacrifice on smoking pleasure.'" Lights represented "a total compromise," and negative aspects included: "'It's like smoking hot air'" and "'Deprive you of a true smoking experience.'" Lights were perceived as "for people who

. . . want to quit but can not." The aspects of the "Inadequate product performance" of low tar cigarettes were: "lack of satisfaction/not satisfying"; "lack of smoking quality"; "poor quality of flavor"; "not strong enough"; and "need to smoke more." 321683062-3099 at 3087, 3090 (US 28586).

2280. A BATCo document circa 1996 titled "Lights Segment Project Consumer Insight Into Smoking Lights" stated, under the heading "Benefits of Smoking," that "[l]ight smokers criticized Ultra's as bad tasting . . . but accept this lost taste characteristic." The document further stated "light cigarettes (especially ultra) = pleasure sacrifice." The document further stated that "Ultra smokers find it necessary to explain to others and themselves why they consume a product that provides hardly any pleasure (taste)" which led to the "negative cliche" of a ‘weak willed addict.'" The document stated that to counter this, "we need to reassure light/ultra smokers that it is okay to smoke lights through communication." 321546706-6724 at 6707, 6708, 6709 (US 22052).

2281. A BATCo document, titled "Barclay Business Review 1996," discussed low tar smoker motivation:

> The results of the 1MG smokers motivations study in Belgium show that the key drivers to the [ultra light] segment are health concern and peer/family pressure. Consumers expect a reduction of negative aspects. . . . As amount of taste is the main consumer indicator for strength, 1mg. products are expected to have the least taste among all cigarettes.

700767443-7457 at 7448 (US 22123).

2282. A BATCo document, titled "Firefish Kent in Dublin Qualitative Research Debrief July 2000," concluded that, with respect to Kent's charcoal filter, consumers found

communications providing health reassurance "more appealing" than communications about taste: "'Kent Taste System' The Charcoal Filter communication was appreciated. . . . However, they felt the emphasis should be on Filter -- rather than taste -- help filtering out the 'crap' was more appealing than advantages in taste." 321626872-6906 at 6901 (US 22059).

2283. In a document, titled "What is a Light Cigarette," dated September 29, 1998, BATCo scientist David Creighton described two "main types of Lights smokers[:] Those who start smoking Lights . . . and those who have been smoking a full flavour product and wish to switch down to a Lights." Creighton explicitly acknowledged that Lights smokers who "switch down" do so because they believe it is a "conscious . . . exchange" of taste for "the reassurance of the lower tar delivery":

> [T]he down switcher, who has been used to a higher taste level[,] would prefer to maintain as much taste as possible with the reassurance of the lower tar delivery of a Lights. . . . The down switcher makes a conscious decision to give up some taste satisfaction in exchange for the lower delivery potential.

770009958-9964 at 9962 (US 78253).

2284. A January 15, 2001 BATCo document written by Steven Coburn, titled "Project Balcony," which referenced Santa Monica, California marketing studies related to proposed campaigns, reported that smokers prefer the taste of higher tar cigarettes, but smoke lower tar cigarettes because they believe lower tar cigarettes are less harmful: "[L]ights don't satisfy as much as a heavier cig when trading down . . . less tar less nic -- less harmful." 325239017-9018 at 9017 (US 22082). A January 17, 2001 document with the same author and title that also referenced Santa Monica smokers, stated under the heading "Benefit": "Has carcinogens of a lights but taste of full flavor[.] May be not as harmful -- which is why some people smoke

lights." 325239023-9024 at 9023 (US 22082). An additional document with the same date, title, and author, referencing Santa Monica smokers stated: "Benefit . . . Lights that smoke like a full flavor -- not sacrificing anything[.] Lights with a full flavour -- important -- lights better for you but still taste like a cig." 325239025-9026 at 9026 (US 22082).

**(5) American Tobacco**

2285. A 1967 Annual Report prepared by American, describing American's Carlton cigarettes, defined a "light cigarette" as "one that is low in 'tar' and nicotine yield," and made no mention of any particular taste characteristics. MNAT00029170-9201 at 9176 (US 21222).

2286. A March 2, 1976 American document, titled "Background and Product Positioning Recommendation Project LOTC," predicted that:

> [T]he most significant growth will take place in the "middle ground" where taste claims prevail, yet where the perception of a "health benefit" is still strong. In other words a compromise between low-tar and taste (which is unmistakable to consumers) may not represent as traumatic a change for full flavor smokers as a change to "super" low tar.

ATC0494235-4235 (US 87912).

2287. A January 1984 document from American Tobacco's files prepared by Andrew Thurm Associates titled "'NO ADDITIVES' CONCEPT TEST" concludes that low tar cigarettes are associated with weak taste and that Carlton cigarettes have a weak, negative taste perception with consumers:

> "Carlton . . . shows traces of an additional impediment -- weak taste perceptions. . . . Carlton's weak taste image acts as a secondary impediment. . . . In a certain sense, being low in tar peripherally suggests a flavor identity because of its connotations to mildness at the expense of taste strength.

970384072-4111 at 4076-4078 (US 85121).

2288. A February 29, 1988 American Tobacco memorandum from Richard E. Smith, Director of Brand Management, to K.P. Noone, Product Manager, stated:

> If the switching motivation is better taste, [smokers] . . . will certainly not switch to Carlton, a brand which their experience has often taught them is lower taste. . . . [M]ost smokers will continue to seek lower tar. . . . They have demonstrated a disciplined willingness to sacrifice taste. . . . Carlton brings less than nothing to the better/stronger tasting party.

991216857-6858 (US 85115).

2289. A February 29, 1988 American Tobacco memorandum from J.M. Murray, Assistant Product Manager, to T.M. Keane, Senior Product Manager, stated:

> The Carlton and Now Groups almost unanimously cited "Lowest in Tar" as the single most important motivating factor in brand selection. . . . Importantly, the 0-3 mg. groups identify "Lowest" as the driving force -- they seem to have been prepared to make a taste compromise. There is nothing to indicate that [ultra light smokers] won't become available to Carlton. At present, they aren't ready to make a taste compromise. . . . As these people become prepared to step down, they will be ready to give up some level of taste and seek the "Lowest in Tar" (e.g. Carlton or Now) . . . present Carlton smokers . . . have already made the taste compromise and focus primarily on "Lowest. . . .” In conclusion, I believe we should focus our efforts on developing suitable advertisements which single mindedly communicate our "Lowest" positioning.

980355176-5177 (US 85122).

**(6) Lorillard**

2290. A December 1976 report prepared for Lorillard by the Nowland Organization, Inc., stated: "Those who do not now smoke SHF [super-high filtration] cigarettes perceive low tar and nicotine cigarettes in very much the same way as do current smokers -- i.e., as ‘better for

you' but not as enjoyable." 84053616-3706 at 3638 (US 55997).

2291. A June 1978 Report prepared for Lorillard by Foote, Cone & Belding Advertising, Inc., "to assist Lorillard in understanding the . . . attitudes of reduced-tar smokers and their motivations in selecting brands" relayed smokers' beliefs that lower tar cigarettes had an unsatisfying lack of taste, and indicated that a low tar cigarette "with good taste" had not yet been developed, stating:

> The major problem with [ultra low tar] brands was decided lack of taste/smoking impact. "Sucking on a straw in an empty glass -- nothing" was a typical reference to such brands. In point of fact, this was probably very close to the truth. . . . There is every reason to believe that ultimate technological breakthroughs will yield a tobacco product that is low in tar, with good taste. In that event, ultra low-tar products will serve as a viable net for all smokers who desire reduced tar plus the satisfaction of good taste.

03297227-7249 at 7229, 7233, 7246 (US 88631).

2292. This document, discussing one of Lorillard's competitors' brands, added:

> Carlton's success was all the more surprising in light of the fact that it was totally unable to offer any taste benefits to the consumers. Apparently, there existed a strong need among a sub-section of reduced-tar smokers for a cigarette that was 'as low as you can go' in its tar and nicotine levels.

03297227-7249 at 7240 (US 88631).

**b. Defendants Internally Recognized that Smokers Rely on the Claims Made for Low Tar/Light Cigarettes as an Excuse/ Rationale for Not Quitting Smoking**

**(1) Tobacco Institute**

2293. A May 1978 Tobacco Institute document, titled "A Study of Public Attitudes Toward Cigarette Smoking and the Tobacco Industry in 1978 Volume I," prepared for the

Tobacco Institute by the Roper Organization stated that

> low tar cigarette smokers . . . are potential cigarette quitters. . . . And more of them than the average have tried to quit smoking. Since low tar smokers are an expanding share of the market, their greater desire to quit smoking poses a special problem for the cigarette industry.

501565967-6019 at 6008 (US 21866).

**(2) Philip Morris**

2294. Philip Morris conducted research on former smokers to assist it in marketing purportedly less harmful cigarettes to draw them back into the market and to dissuade potential quitters from actually quitting. According to Carolyn Levy, who worked as a research scientist for Philip Morris in its Behavioral Research Group from 1975-1980 and as the Assistant Director and later Director of Consumer Research from 1986-1991, when she was in the Consumer Research Department, she "performed research on quitting on behalf of Philip Morris," and when she was in the Behavioral Research Department in the late 1970s, "[q]uitting was also a subject of interest and research to Philip Morris."

2295. A report titled "Exit-Brand Cigarettes: A Study of Ex-Smokers," written by F.J. Ryan and approved by Dr. William Dunn, dated March 1978 and distributed to certain Philip Morris employees, including Levy, stated: "If the industry's introduction of acceptable low-nicotine products <u>does</u> make it easier for dedicated smokers to quit, then the wisdom of the introduction is open to debate." The report further stated that "experience in dealing with 'quitters' suggests that most people who quit smoking will resume after a while. Hunt and Matarazzo show data suggesting that 50% of quitters resume smoking within 3 months and 70% resume within a year." Levy said that she was "aware when [she was] studying quitters that most

quitters resume smoking." Levy WD, 26:1-5, 26:20-28:10; 1000368057-8081 at 8060, 8066 (US 20098*) (emphasis in original).

2296. Levy stated that Philip Morris was "studying the factors that influence quitting," including whether "people quit because of health concerns," so that Philip Morris could "design products or line extensions of existing brands that addressed those factors." Levy testified that "[t]o the extent we determined that people quit because of health concerns, that would be very important in reaffirming Philip Morris' commitment to develop cigarettes with lower harm or risk." Asked if the purpose was "[s]o that people would keep smoking Philip Morris cigarettes rather than quitting," Levy answered: "Yes, if Philip Morris could design new products to address those concerns." Levy WD, 31:9-22.

2297. An August 14, 1978 consumer research report prepared for Philip Morris by Wells, Rich, Greene, Inc. regarding Benson & Hedges stated:

> Those who are currently smoking "Lights" do so because ". . . they are better for you. . ." than full flavor cigarettes. Although some experience that they actually smoke more Lights, they perceive that they are cutting down and it is an alternative to quitting -- which most cannot accomplish.

1004888470-8484 at 8480 (US 85009).

2298. A January 1979 study prepared for Philip Morris stated:

> [W]ith respect to ultra low tar brands there appear to be particular additional motivations for smoking this type of cigarette . . . [h]ealth problem forcing a change to a safer cigarette (as an alternative to not being able to quit) . . . [p]eer and family pressure to smoke a safer cigarette (as an alternative to not being able to stop smoking). . . . Characteristics of ultra low tar smokers were: people who want to quit. . . . In point of fact, smoking an ultra low tar cigarette seems to relieve some of the guilt of smoking and provide an excuse not to quit. All of these smokers expressed an

> awareness of a health hazard from smoking, but felt that they had alleviated some of this hazard by smoking an ultra low tar brand. They described these cigarettes as ‘safer'. . . . With these justifications, there may be less of a compulsion to quit smoking . . . .

2040066740-6766 at 6747, 6751-52, 6754, 6755 (US 20435).

2299. A March 1979 report prepared for Philip Morris, titled "A Study of Smokers' Habits and Attitudes With Special Emphasis on Low Tar and Menthol Cigarettes," stated:

> The percentage of adults who smoke has stabilized for the first time since 1965 -- at 34%. This could well be due to the greater perceived safety of low tar cigarettes and their resultant neutralization of the health threat. . . . The number of cigarettes smoked per day per smoker continues to climb, in part at least because low tar cigarettes seem to cause people to increase the number of cigarettes they smoke.

2049455309-5318 at 5313 (US 22218); Bonhomme WD, 25:15-26:1, 46:19-47:7.

2300. In a September 28, 1987 inter-office memorandum written by Levy and sent to David Dangoor, Executive Vice President at Philip Morris, titled "Critical Consumer Research Issues," Levy outlined what she called "the most important consumer-related questions which should be addressed in 1988." This document contained "information about some of the types of research that Philip Morris planned to conduct in the upcoming year." Among the questions Levy posed in the memorandum were: "Can we determine the relative importance of various factors which influence <u>quitting</u>?"; "What are the factors which influence brand choice of smokers reentering the market? Can we capitalize on these?"; and "Which new product options will . . . appeal to former smokers?" 2080009516-9522 at 9517, 9520 (US 88155) (emphasis in original); Levy WD, 28:20-30:8, 31:5-22.

2301. Philip Morris conducted a “major study” on quitting in 1988, titled “Critical

Issues -- 1988 Progress Report," which Levy described in a September 26, 1988 memorandum she sent to John Zoler, then Director of Market Research. Under the heading "Smoker Dynamics," Levy wrote: "Conducted a major study on quitting showing: demographics of quitters, quitting by brand, reasons for quitting, methods used to quit, substitutes used for cigarettes." There were 506 people surveyed in the Philip Morris study, and "[t]he research results indicated that the number one reason for people quitting smoking was health concerns." Levy WD, 32:2-33:8; 2080009523-9529 at 9524 (US 88156).

2302. A June 20, 1988 memorandum on Philip Morris USA letterhead from consumer researcher Jan Jones to Dr. Ed Gee, titled "Statement of Position on the Social Pressures Construct," discussed Philip Morris's goal of introducing a "socially acceptable cigarette" that "could capture the trend-setters who might find such a product preferred over current cigarettes, be a welcomed alternative to quitting, and might attract new smokers who would not otherwise choose to become product users." The memorandum further stated:

> With the recent attrition rate of smokers, attaining "new" smokers is no longer synonymous with capturing young smokers. We already have Marlboro as the brand of choice for young smokers entering the market. We do not have a product that meets the needs [sic] of the growing population of ex-smokers. Many of these ex-smokers will resume smoking, and the product that they choose could cause a swing in market share. These quitters (and those who are soon to become quitters) are dissatisfied with certain aspects of a product that previously met their needs. . . . These consumers have not yet as a group found a satisfactory replacement for their previous product – a textbook example of a market opportunity.

2050801835-1853 at 1845 (US 38763); Bonhomme TT, 2/10/05, 12936:6-12939:7.

2303. A March 1993 Philip Morris document, titled "Quitting Dynamics," showed

statistics from "Smoker Tracking" that indicated that more Low Tar smokers did not try to quit (53.5%) compared to Full Flavor smokers (43.2%). 2062362453-2474 at 2473 (US 39555).

2304. In a July 1993 Philip Morris presentation, titled "Merit Franchise," prepared by Norma Suter Drew, Brand Manager and Marketing Director for Merit cigarettes from 1992-1994, she reported that the "Intended Audience" of Merit advertising was "self-conscious low tar smokers who want to cut down on tar and nicotine but who won't sacrifice taste completely." 2070661683-1727 at 1714 (US 40337); accord 2041453659-3754 at 3678 (US 23906) ("Merit's consumers are self-described 'Uncomfortable Smokers' who tell us they are self-conscious about the fact that they smoke"); 2063690017-0018 (US 85002); LeVan PD, United States v. Philip Morris, 6/25/02, 178:13-181:2.

2305. In November 1994, Philip Morris commissioned a study from the research firm Guiles & Associates, titled "B & H Qualitative Research Exploring Out-Switching," to "understand more about how Benson & Hedges smokers exit the franchise." One of the conclusions reported in the study was:

> For many smokers, the ultimate ramification of all the anti-smoking rhetoric has been their heightened commitment to quit (or at least reduce) their smoking. For these, the greatest evidence of this commitment has been in shifting tar levels (even to different brands, as necessary). . . . For many, lowering tar levels is the next best thing to quitting.

2072622442-2451 at 2444, 2445, 2449 (US 41562); see also 2063688212-8284 at 8226 (US 39823) (Jan. 18, 1994 document prepared for Philip Morris USA indicating that Merit is perceived as a "quitters brand"); Bonhomme WD, 41:4-44:5.

2306. Philip Morris's 1994-1998 Plan Overview stated:

> If ultra low tar segment growth accelerates, we will launch Marlboro Ultra Lights to prevent Marlboro from losing smokers. Marlboro Ultra Lights will reinforce Marlboro's appeal among tar ‘conscious' Lights smokers and improve Marlboro's ability to retain smokers as they age.

2071032180-2206 at 2188 (US 21964); Bible PD, United States v. Philip Morris, 8/22/02, 163:8-165:2.

2307. An internal July 1995 draft presentation, titled "Marlboro Women," bearing the handwritten notation "Approved as Revised, VMM [Virginia Murphy, a Philip Morris attorney] 8/9/95," includes a section titled "The Marlboro Lights Female." The presentation stated that "[p]opularity and low tar are why they initially smoke the brand." The presentation further noted that for female Marlboro Lights smokers, 27% of 18-24 year olds, 29% of 25-29 year olds, and 34% of 30-39 year olds were "Under Pressure To Not Smoke," and that 21%, 16%, and 30% of each age group, respectively, "Intends to Quit." 2071373667-3751 at 3709, 3750 (US 27272).

2308. In a March 26, 1996 cover memorandum, Shari Teitelbaum delivered to Jodi Sansone, then Brand Manager for Merit cigarettes, a consumer research report commissioned by Philip Morris to "gain an understanding of consumers perceptions of the lowest category, as well as the motivations and wants of smokers of Carlton, Now, and Merit Ultima, and potential down-switchers to this category." Under the heading "The Decision to Enter the Lowest Category," the attached consumer research report found:

> At some point in their smoking histories, these smokers decided or became more receptive to the idea of a lighter or lower brand than the one they were currently smoking. Some cited perceived health concerns. Others had been “bugged” by family members at home to cut down, or stop smoking.

2045628312-8328 at 8320, 8326 (US 22217).

2309. In August 1996, Natalie Ellis, Senior Manager at Philip Morris, and Urvashi Kohli distributed a June 1996 consumer research study, titled "Marlboro Ultra Lights: A History," to a long list of Philip Morris employees, including Norma Suter Drew, then Director of New Products for Marlboro, gauging consumer reactions to the contemplated launch of Marlboro Ultra Lights. The study found that Marlboro Red smokers see Marlboro Ultra Lights as "a brand for quitters and people who are trying to cut down." 2071535027-5090 at 5090 (US 22020).

2310. In an October 4, 1999 letter, titled "Schedule for Merit Competitive Lights and Ultra Lights Study," Beth Hooper of Leo Burnett discussed an upcoming Philip Morris study being conducted to "[e]xplore adult smoker attitudes toward the Lights/Ultra Lights category" and to "[b]etter understand the impact of Marlboro Ultra Lights on the category overall." Under the heading "Background," Hooper noted:

> The dynamics of the Lights/Ultra Lights category have changed significantly over the past several years, particularly with the entry of Marlboro Ultra Lights. In the past, Lights and Ultra Lights were stops on the way to leaving the tobacco category. However, today, we are seeing that both segments are the destination of choice for many adult smokers.

2080929561-9562 at 9561 (US 27786).

2311. According to Jeanne Bonhomme, Director of Consumer Insights for Philip Morris, the company was aware that some "consumers who wanted to quit were switching to several of its light cigarette brands instead of quitting." Bonhomme WD, 45:17-19.

**(3) R.J. Reynolds**

2312. A 1969 RJR Survey of Cigarette Smoking Behavior and Attitudes recognized that

"[a]s a group filter cigarette smokers were more conscious of a possible relationship between smoking and health," and recognized the "willingness of an increasing number of smokers to compromise -- to smoke what they considered to be a less harmful cigarette rather than give up smoking entirely." 650340129-0193 at 0180, 0183 (US 20948).

2313. RJR's advertisements for Vantage cigarettes employed signed testimonials by smokers who claimed to have considered the risks of smoking and decided not to quit smoking, but rather to switch to Vantage. The Vantage advertisements included the following:

> 1971: "You don't cop out. Why should your cigarette? Vantage doesn't cop out. It's the only full-flavor cigarette with low ‘tar' and nicotine." (no bates) (US 3545).
>
> 1974: "Instead of telling us not to smoke, maybe they should tell us what to smoke. For years, a lot of people have been telling the smoking public not to smoke cigarettes, especially cigarettes with high ‘tar' and nicotine. But the simple fact is that now more Americans are smoking than ever before. Evidently many people like to smoke and will keep on . . . no matter what anyone says or how many times they say it. Since the cigarette critics are concerned about high ‘tar' and nicotine, we would like to offer a constructive proposal. Perhaps instead of telling us not to smoke cigarettes, they can tell us what to smoke. For instance, perhaps they ought to recommend that the American public smoke Vantage cigarettes." (no bates) (US 4403); Schindler WD, 79:9-23.
>
> 1976: "To smoke or not to smoke. That is the question. With all the slings and arrows that have been aimed at smoking, you may well be wondering why you smoke at all." (no bates) (US 5198); Schindler WD, 78:18-79:8.
>
> 1975: "Out of the last 6 years of smoking, I've only enjoyed the last 5 months. I started to pay attention to all the fuss about smoking about 6 years ago. That's when the uproar about ‘tar' and nicotine started to get in the way of my pleasure. For me, it made the real difference between just liking

> smoking and really enjoying it. I thought of quitting, but I really didn't want to. So I decided to switch to a low ‘tar' and nicotine cigarette." (no bates) (US 4954); Schindler WD, 79:24-80:9.

> 1976: "How many times have you decided to give up smoking? If you're like a lot of smokers these days, it probably isn't smoking that you want to give up. It's some of that ‘tar' and nicotine that you've been hearing about." (no bates) (US 4998); Biglan WD, 377:12-379:22.

2314. A June 1975 RJR marketing plan stated that the introduction of a Salem high filtration line extension was, in part, to "[p]rotect the current Salem franchise from quitting and switching losses." The introduction was to "[t]erminate the trend toward reduced consumption currently in evidence among the Salem Brand franchise." RJR recognized that Salem King smokers were reducing their daily cigarette consumption "at least partly due to concerns about the alleged health hazards of smoking." 502313230-3308 at 3235, 3240 (US 22151).

2315. In discussing RJR's Limit, a new low tar cigarette, a 1976 memorandum noted that "LIMIT will satisfy the needs of smokers who wish for the ultimate in low ‘tar' assurance -- providing the strongest health reassurances available in cigarettes today." Under the heading "Target Audience," the memorandum stated:

> The extreme worriers. That large group of smokers on the fringe of quitting who are on the verge of that final step: quitting smoking all together. This enormous group of smokers of various ages who have unsuccessfully tried to quit. Our target group will also include smokers whose concern with the health implications of smoking surpass their needs for full flavor in a cigarette.

502784092-4100 at 4097 (US 22153); Schindler WD, 77:11-78:11.

2316. An August 19, 1976 RJR document, titled "New Product/Merchandising Directions," stated that the

> "worrier" segment of the market (17% of smokers are so classified) . . . seek products with tangible/visible features to assuage their "concern" about smoking. "Numbers" products have a growing appeal to these smokers. Products in the 1-6 mg. "tar" range will continue to build successful long-term franchises (e.g., Carlton's growth rate, NOW's immediate acceptance).

500672011-2172 at 2069 (US 20645).

2317. An August 5, 1980 RJR memorandum marked "RJR SECRET" from M. D. Shannon to Dr. W. M. Henly and Dr. R. A. Lloyd (all three were RJR researchers), titled "Project HR," stated:

> ULT ["Ultra Low Tar"] smokers. . . . Very health conscious -- These smokers are well aware of the smoking and health controversy and have switched to ULT products in an effort to decrease "tar" intake. Many of these smokers are victims of pressure from peers and loved ones to quit or reduce smoking. Therefore, they smoke ULT brands to "get people off their backs. . . ." Feelings of guilt about smoking are very strong . . . . Many would like to quit smoking but cannot. This tends to fuel their low self-esteem. . . . These smokers do not feel good about themselves. [S]everal concepts were developed to appeal to these smokers: 1. To convince the HR target that the new brand represents a payoff or reward for his forced decision to sacrifice by going down in "tar" level. . . . 2. To convince the HR target that the new brand is a reflection of his rational, sensible decision to switch to a low "tar. . . ." Again an attempt is made to make him feel better about smoking . . . . Advertisements were developed . . . to address these concepts and present them in a manner that would be positively received by the target audience.

500251567-1570 at 1567-1569 (US 21563).

2318. An August 1981 report prepared for RJR by the Beaumont Organization advised that ultra low tar brands, such as Now, Carlton, Cambridge and Barclay, can cause smokers who

seek to eliminate the "danger" of smoking to keep smoking, because these smokers believe the ultra low tar brands "reduce the alleged health risks" of smoking "to an acceptable -- minimal -- level":

> Some smokers have been strongly alarmed by the extensive publicity concerning alleged health hazards of smoking, to the extent that they seek not merely to moderate their smoking but to eliminate entirely the “danger” that it may present. Such a smoker has two options. Firstly, he may simply cease smoking altogether. However, in some cases, the smoker does not wish totally to elimate [sic] the benefits of smoking. His second option is to seek a cigarette which he perceives to reduce the alleged health risks to an acceptable -- minimal -- level. Within this second option, the smoker essentially seeks a brand that will protect him from the dangers that are alleged to attend smoking. He is often prepared to sacrifice most of the benefits he previously derived from smoking to achieve this. Such a brand provides the consoling sense that the smoker has eliminated the risks of smoking by “quitting,” while continuing to engage in ritualized behaviors associated with cigarettes. An increasing number of brands addressed this benefit, including Now, Carlton, Cambridge and, perhaps, Barclay.

503972013-2063 at 2038 (US 66448); Orlowsky WD, 86:4-7.

2319. A 1983 NOW Brand Image report prepared for RJR recognized that

> [a] major motivation in brand switching has been concern over health. . . . Most people chastise themselves for continuing with what they refer to as a “bad habit.” They are aware of mounting pressures and criticism from non-smoking groups. They speculate about planning to quit, but they are not sure if they will be able to do so. . . . The typical solution to this dilemma is the two pronged approach of trying to cut down and/or moving to a lower tar brand.

The report further stated:

> Respondents were asked what the words “low” and “lowest” in the ads meant to them. At the literal level they say this means that the two brands are very low or lowest in the amount of tar and nicotine they contain. They interpret this to mean that the two brands are “safer” and pose less of a health hazard. Consequently, they

> reason, this would make the brands more appealing to younger people who are very health conscious or to older, long-time smokers who are concerned about the long-range effects of tobacco.

506671319-1418 at 1326, 1379 (US 22160); Orlowsky WD, 85:8-19.

2320. A November 3, 1998 e-mail from Mario Possamai to Randy Tompson, then Director of Issues and Information Management for RJR, discussed the results of an October 20, 1998 Gallup Survey regarding quitting behaviors and motivations. The survey found that "the number of smokers who are very interested in quitting has increased dramatically in the last five years," specifically noting that 36% of all current smokers are "very interested" in quitting. Health concerns were cited as the primary reason smokers want to quit, with 43% of smokers reporting that they were more concerned about health than they were five years earlier. Although 77% of smokers had tried to quit an average number of seven times each, more than half (54%) of smokers reported resuming smoking within one month. Over half of all smokers (53%) smoked light, low-tar or ultra-light cigarettes. According to the survey, "many of these smokers believe that they will get some health benefit from smoking non-regular cigarettes, including: ‘to be healthier/improve health' (11 percent), ‘reduce exposure to toxins/tar' (10 percent), and ‘reduce exposure to nicotine' (9 percent)." 700173214-3217 at 3214-3217 (US 22121).

**(4) Brown & Williamson**

2321. A January 19, 1978 memorandum from Dr. E.F. Litzinger to E.T. Parrack, with copies to Dr. R.A. Sanford and M.L. Reynolds, titled "Social Smoking Studies," stated:

> We search for answers to the questions “Why do people smoke?” and “Why do people stop smoking?” to provide us with direction in developing new products. Perhaps answers to another question “How do people stop smoking?” could lend insight into the

> creation of new products. Having answers to this latter question we might then design products to “intercept” people who are trying to give up smoking.

650510607-0607 (US 87138); Smith WD, 63:10-64:7.

2322. A February 7, 1979 letter from Stephen D. Schwartz of Grey Advertising Inc., stated that ultra low tar smokers of brands like B&W's Carlton and RJR's Now, have "consciously decided to sacrifice taste for low tar," and that these smokers "want a way to quit smoking." 774138538-8545 at 8539 (US 54613).

2323. A "confidential" March 5, 1980 report prepared for B&W by Hawkins, McCain & Blumenthal discussed marketing strategies for a proposed new B&W brand pursuant to its "Project Omega." The report stated: "The objective of all advertising and promotion will be to convince low ‘tar' smokers that this new brand is the only one that combines the two most important qualities a contemporary cigarette should have -- a satisfying taste and the lowest ‘tar.'" The report further stated, under the heading "Conclusions":

> 2) Low tar and ultra low tar smokers share personal “concern.” The difference between them lies in the depth of the concern. . . . 3) Most of these smokers would quit if they could. The pressure to quit is omnipresent from all sources. . . . 5) To reach these smokers we must acknowledge their concerns. 6) This acknowledgment must make them more comfortable (at ease) about smoking the Omega cigarette.

The report further stated: "These executions are built on an expanded strategy which includes an understanding of the target audience and the need to create a maximum ease or comfort level that addresses the concept of ‘cognitive dissonance.'" 660026713-6718 at 6714, 6717-6718 (US 85030); Smith WD, 64:19-65:14.

2324. A May 7, 1982 report prepared by a consultant for Imperial Tobacco Ltd. (the

Canadian sister company of B&W) stated that youth believed the "truly light brands" were

> false safety brands for the older worried smoker who cannot quit. . . . Of course, they knew this because some . . . had tried to go very low for exactly the same reasons as smokers two or three times their age do so. All they found was increased consumption and frustration.

Statements from young smokers included: "I think all the stuff coming out the past couple of years about how bad smoking is for you made a lot of people go down to a light cigarette to sort of ease their own conscience." 566627751-7824 at 7817-7818 (US 20938).

2325. A 1984 B&W internal marketing research document, titled "Why People Smoke, Brand Imagery and New Product Opportunities," stated that both smokers of B&W's Barclay cigarettes and smokers of other brands "perceive BARCLAY to be for one who wishes not to smoke." 670132512-2597 at 2566 (US 20964).

2326. A 1986 B&W document stated: "Quitters may be discouraged from quitting, or at least kept in the market longer. . . . A less irritating cigarette is one route. . . . (Indeed, the practice of switching to lower tar cigarettes and sometimes menthol in the quitting process tacitly recognize this). The safe cigarette would have wide appeal." 566628004-8083 at 8015 (US 20940).

2327. A December 16, 1999 "Presentation of Findings" for "STAR Tobacco Focus Groups" prepared for B&W by "Rabid Research" identified "4 segments of light/ultra smokers (segmented based on motivation for smoking light/ultra variant)." One of the four segments was identified as "those who switched to lights/ultras because they were attempting to quit." It also noted that some consumers "started smoking lights after making an attempt to quit." The document also shows that Defendants intended that their claims of reduced harm regarding low

tar cigarettes lessen the social pressure on smokers to quit:

> The benefits of switching to this new cigarette are not just health related[.] Would reduce the pressure on them from friends and family members to quit[.] Would allow them to feel better about themselves[.] At least I'm smoking a cigarette that isn't as bad for me[.] Maybe people wouldn't be as worried about me smoking around them cause it's a better cigarette.

190200047-0116 at 0061, 0071, 0106 (US 22162); Ivey WD, 59:1-10.

2328. A July 27, 2000 document prepared for B&W by Kay Harwood Marketing Analysts, Inc., titled "Topline Report of Findings for Carlton Advertising Research," reported that smokers view Carlton cigarettes as a less harmful alternative to quitting smoking:

> As participants described their transition from heavier to lighter (i.e., higher tar to lower tar) cigarettes, they frequently used phrases like “working my way down” and being “that much closer to quitting.” Ultra light cigarettes were frequently associated with trying to quit smoking. . . . [M]any participants intimated that ultra lights already represent a sacrifice (i.e., less taste for a cigarette lower in tar and nicotine).

A "summary of the most common perceptions/images associated with" Carlton and Merit Ultra Light included descriptions of Carlton as for "[s]omeone trying to quit/cut back/smoke lighter" and descriptions of Merit Ultra Light as a "[c]igarette used to quit smoking/almost ready to quit/cutting back." Among the Report's "Key Findings" were the statements from the focus groups describing their perceptions of several Carlton campaigns. The statements included:

> Trying to quit/cut down . . . to change/cut down. . . . If you can't stop smoking, smoke Carlton -- it's better for you if you can't quit. . . . Cut down on smoking -- better for you. . . . Diet restrictions/ quitting/cutting back. . . . The least you could do . . . if you have to smoke. . . smoke the less harmful cigarette. . . . If you've got to smoke, smoke this one. . . . Cut down on your smoking. . . . Directed to someone who wants to cut down is better for you if you cannot quit. -- Quit smoking, or smoke less nicotine cigarettes. . . .

> Don't feel bad if you can't stop smoking; if you smoke Carltons, you have accomplished something. . . . Use these in case of emergency nicotine fit while quitting. . . . Smoke when trying to quit – emergency cigarette. -- Switch to Carlton when quitting.

250255336-5347 at 5339, 5343-47 (US 22031). These statements were repeated in an August 8, 2000 document prepared for B&W by Kay Harwood, Marketing Analysts, Inc., titled "Carlton Advertising Research: Report of Key Findings." 250255060-5075 (US 22170); Ivey WD, 60:13-62:22; Smith WD, 62:9-63:6.

**(5) BATCo**

2329. A March 22, 1979 internal BATCo document written by Terry Hanby, who researched "Smoking & Health reassurance" for BATCo, concluded that the sale of low tar cigarettes as "health reassurance" products would stem the decline in cigarette sales:

> It is quite clear that the emergence of Hi-Fi products has been welcomed by much of the smoking community and their use is emerging as an important health reassurance mechanism for many smokers. . . . [T]he growth of Hi-Fi brands will increasingly ensure that up-market smokers will turn to them as a health reassurance mechanism. . . . [W]e feel that in the markets of ‘developed nations' the incidence of smoking may continue to decline but that the various reassurance mechanisms listed above will ensure that this decline will eventually plateau at a level not too far removed from current incidence levels.

109883112-3117 at 3115, 3117 (US 20264); 105657908-7909 (US 20248).

2330. A BATCo memorandum dated April 4, 1979, titled "Year 2000," contained predictions for the future of the tobacco industry:

> Low tar products will eventually and substantially define the tobacco business. This will serve as an important mechanism for reassuring smokers. . . . Quitting rates will also not increase as existing smokers become increasingly reassured by the growth of Low Tar brands. . . . the ready availability of Low Tar brands will

> supply high reassurance.

109883101-3103 at 3101, 3102 (US 21518).

2331. An April 23, 1979 BATCo Research Report concluded that "most smokers wish to quit smoking." 105562110-2189 at 2114 (US 21516).

2332. An April 28, 1981 memorandum by Dr. Martin Oldman, titled "Low Delivery Cigarettes and Quitting" and delivered to Dr. L.C.F. Blackman, Director of Millbank, stated:

> The role of low delivery cigarettes in a health-conscious market, and for the health concerned individual, can probably be best explained in terms of a simple balance model. This would suggest that the individual smoker seeks to reduce the tension arising from the perceived incompatibility between his health concern and continuing to smoke by making various psychological and behavioural adjustments. For some the tension will only be sufficiently reduced by quitting. For others, an adequate discharge will be achieved by reducing the number of cigarettes smoked and, for yet others, a switch to lower delivery cigarettes is the appropriate modification. In all cases, the model would suggest, the individual makes only that change in his smoking behaviour which is sufficient to offset to a tolerable level the tension arising from the perceived conflict between smoking and his health concern.

105399687-9689 at 9688-9689 (US 85032).

2333. Notes of a July 12, 1983 meeting of BATCo's newly established "Sidestream Working Party" stated: "Smokers who are concerned about the smoking and health aspect but who have not given up, have done all they can (by moving to lower tar brands) to avoid the pressure to quit." The notes continue, recognizing that

> [m]arket research undertaken in the US and the UK indicates that smokers would welcome a reduction in the visible smoke they are creating as it would ease the social pressures being increasingly placed upon them and provide a degree of solace, in that they themselves can do no more -- short of quitting -- having already

moved down the tar scale.

109881462-1467 at 1462-1463 (US 26230).

2334. A circa 1984 BATCo "R&D/Marketing Conference" report stated: "It is useful to consider lights more as a third alternative to quitting and cutting down -- a branded hybrid of smokers' unsuccessful attempts to modify their habit on their own." This document also stated that lights "offered one solution to the smokers dilemma" regarding the adverse health effects of smoking. 100501581-1657 at 1593 (US 20187) (emphasis in original).

2335. An internal document from Imperial Tobacco Ltd., the Canadian sister company of B&W, and a subsidiary of BATCo, stated that the company viewed the promotion of light cigarettes as the "ability to reassure smokers, to keep them in the franchise for as long as possible." 689466032-6789 at 6351 (US 31053).

2336. A BATCo document bearing the heading "Barclay Business Review 1996" reported that ultra light cigarettes are particularly attractive to people who may start smoking again after quitting. The document stated that, due to its packaging, the Barclay cigarette (in the Netherlands) was "not clearly perceived as an ultra light and consequently lost attractiveness particularly amongst re-starters who look for an ultra light offer." This appeared under the heading "The core positioning of the brand needs to be clarified in the minds of the consumer." 700767443-7457 at 7446 (US 22123) (emphasis in original); Ivey WD, 79:5-22.

2337. A January 2001 BATCo file, titled "Consumer Concept Trial Notes Jan 2001 Project Baltec II," contained a section dated January 10-12, 2001, titled "Philadelphia -- General Impressions and Summary," that detailed the results of consumer research on low tar cigarette smokers, stating: "General feeling that lights are healthier. . . . Who the consumers of the

product might be -- . . . Smokers who don't want to quit but are concerned about their health[;] Step toward quitting[;] Trading down to lights." 325238922-8994 at 8992-8993 (US 22079) (Confidential).

2338. A January 15, 2001 BATCo document written by Steven Coburn, titled "Project Balcony," that referenced California marketing studies related to proposed advertising campaigns, acknowledged that low tar cigarettes are smoked by people who want to quit: "3rd board highlights low nic/tar aspect -- quitters cig." 325239014-9022 at 9015 (US 22082). A document with the same author, title and date that also referenced California smokers stated "less tar less nic -- less harmful. . . . 2nd board implies a cigarette to be used as a substitute for quitting." 325239014-9027 at 9017 (US 22082).

**(6) American Tobacco**

2339. A November 11, 1976 report prepared by Fay Ennis Creative Research Services for F. William Free & Company, an advertising agency used by American Tobacco, summarized focus group sessions relating to low tar cigarettes. The report stated: "By changing to a lower tar cigarette, [the panelists] felt less guilty about continuing to smoke and eventually hoped to stop smoking completely." The report stated that "[s]ome of the panelists actually tried smoking brands of low tar in a downward progression of milligrams in order to quit smoking entirely." ATC037310-7324 at 7318, 7320 (US 87890).

2340. A May 25, 1977 report, titled "Tareyton Lights Field Trip Report," prepared for American by SSC&B Advertising, reported results of focus group research conducted on Tareyton Lights, stating:

> In general, most people who smoke would like to quit. Primary

> reasons for smoking low tars are: It is a means of cutting down on the amount of tar ingested. It is a first step in quitting; people step down in stages to a lower tar cigarette until finally they are smoking the lowest tar. Even among those who enjoy smoking low tars help alleviate their concern.

ATC0136995-7017 at 7005, 7006 (US 87906).

**(7) Lorillard**

2341. Lorillard's internal marketing documents demonstrate that Lorillard commissioned extensive consumer research on its cigarettes. For instance, an August 4, 1975 presentation given to Lorillard by a marketing research consultant, titled "Cigarette Advertising 1974-1975," showed that several of the respondents concluded that Lorillard's "Quit or smoke True" advertisements communicated that True cigarettes are "LESS HARMFUL/BETTER FOR YOU." 03496228-6630 at 6277, 6280 (US 20057).

2342. A December 1976 report prepared for Lorillard by the Nowland Organization, Inc. "to develop market information useful to Lorillard in strengthening its position in the SHF [super high filtration]/low T&N [tar & nicotine] cigarette market," titled "SHF Cigarette Marketplace Opportunities Search and Situation Analysis Volume I," stated: "As would be expected, the advantages of low tar and nicotine cigarettes are seen as health related." The document further stated:

> On the more positive side, many SHF [super-high filtration] smokers note that the existence of low tar and nicotine cigarettes, and their switch to such cigarettes, has alleviated some of their health concerns. . . . A number of SHF smokers note that they turned to this “compromise” smoke because, while they felt they should quit smoking (a few on doctors' advice), they were unwilling or unable to do so . . . yet. They see smoking low tar and nicotine cigarettes both as a way to cut back on the intake of harmful substances without cutting back on the number of

> cigarettes habitually smoked; and (in some cases) . . . so that they will be able to quit more easily at some future time. The fact that many SHF smokers (women especially) now find themselves smoking more than when they smoked regular cigarettes works to defeat their purpose in switching, and is a source of considerable annoyance to them.

Under the heading "Reasons for Prior Brand Switching The Switch to SHF," the document stated:

> As discussed, most SHF smokers deliberately chose to switch to low tar and nicotine cigarettes because of health concerns -- to get less tar and nicotine, for a milder/gentler smoke, and/or to relieve specific smoking-related symptoms. Often, the actual switch was precipitated by. . . .
>
> - experiencing or becoming more aware of, or more concerned about personal ill-effects from smoking (e.g., cough, throat irritation, difficulty breathing)
>
> * * *
>
> - a failed attempt to quit, or a (perceived) inability to quit, coupled with the heightened perception that one ‘should' quit
>
> The main advantages which they feel they experienced in this switch are . . . they have less (or no) smoking irritation . . . they like knowing they are getting less tar and nicotine.

84053616-3706 at 3618, 3628, 3632, 3637, 3678-3679 (US 55997).

2343. Volume II of this Report contained the following "Key Highlights":

> Health concerns are the usual reason for switching to a low T&N brand. Such cigarettes are “better for you” -- milder and less irritating (now) as well as less likely to cause serious problems (later). . . . To many SHF smokers, a low T&N cigarette represents a compromise smoke between a more satisfying smoke and not smoking at all.

The report also stated: "Those who smoke low tar and nicotine cigarettes generally do so because

they believe such cigarettes are ‘better for you' . . . there is less tar and nicotine to do long-term damage . . . reduces smoking anxiety, guilt."  84053709-3744 at 3712-3713, 3716-3719 (US 21073).

**(8) Liggett**

2344. In a December 2, 1968 letter from Max Samfield, Senior Assistant Director of the Liggett Research Department, to Copeland Robinson, New Products Manager at Liggett, Samfield discussed the importance of releasing Dorset brand cigarettes, citing: "The obvious void in the 4-6 mgm range for a low tar cigarette with acceptable taste.  I firmly believe that those who switch to Marvels, Carltons, or Life cigarettes are in the last stages of quitting smoking.  The Dorset, however, is a low tar cigarette one can ‘live' with."  LWDOJ8006760-6760 (US 87909).

### 4. Despite Their Internal Knowledge, Defendants Publicly Denied that Compensation Is Nearly Complete and that the FTC Method is Flawed

2345. Despite evidence spanning multiple decades showing Defendants' extensive knowledge of compensation, Defendants concealed that knowledge and  disseminated false and misleading statements to downplay its existence and prevalence.  As part of their attempt to portray low tar cigarettes as less harmful, Defendants publicly endorsed retaining the FTC Method well into the 1990s because of its usefulness to consumers.  Henningfield WD, 48:14-49:7; 54:7-15; 55:6-12; 2041186475-6517 at 6475, 6486-95, 6498-04 (US 22181*)  (1994 -- B&W, American Tobacco, Lorillard and Liggett defending the validity and usefulness of the FTC Method to consumers); 2048381972-2310 at 1975 (US 22190); 521321297-1301 at 1297 (US 22137); 520011445-1480 at 1445, 1457-58 (US 22101) (1994 -- various public statements

by RJR employees defending the validity of the FTC Method); 2505597781-7998B at 7968-87 (US 23028*) (1996 -- Defendants' statements defending the utility to consumers of the FTC Method).

2346. As Defendants knew, the smoking regimen used in the FTC Method was designed to approximate smoking behavior in the 1930s, when cigarettes were relatively simple devices: few had filters, and perforated filter ventilation cigarettes were not in production. Henningfield WD, 47:11-21.

2347. When the FTC Method was adopted, it was understood that, while it was intended to provide a useful measure of the amount of tar and nicotine that particular brands generate when smoked in a uniform fashion, so that smokers could compare brands, the standardized FTC Method -- or any standardized testing procedure for that matter -- would not totally accurately represent the amount of tar and nicotine that any particular smoker would ingest. 03531981-1986 (US 22243); (no bates) (JD 040254); (no bates) (JD 048746).

2348. As noted in Section V(E)(1)(c), supra, while the FTC contemplated at the time it adopted its Method that numerous potential variations among individuals in everyday smoking behavior could have some effect on tar and nicotine yields, it did not have a full understanding of smoker compensation -- that smokers' addiction to nicotine would cause them to smoke low tar cigarettes more intensely to satisfy their nicotine addiction, and thereby inhale amounts of tar and nicotine comparable to those inhaled by smokers of full flavor cigarettes. Defendants withheld their long-held knowledge that the primary reason the FTC Method could yield misleading data was that nicotine addiction would drive smokers to obtain relatively stable nicotine intakes through smoker compensation. Henningfield WD, 48:3-49:7.

2349. When the FTC Method was adopted, the Tobacco Institute offered several criticisms in an August 1, 1967 press release, but none of those criticisms related to smoker compensation. Instead, the Tobacco Institute criticized the number of cigarettes tested, the length of the cigarette smoked, and the lack of dissemination of tar yields per cigarette puff. The Tobacco Institute stated that "there is no valid scientific evidence to show that . . . ‘tar' and nicotine [] are responsible for any human illness" and then proposed several changes to the FTC Method, most of which were based on claims that FTC tar and nicotine yields were inaccurately high. The Tobacco Institute argued that twice as many sample cigarettes should be tested to arrive at FTC yields, that the FTC Method should use a longer butt-length (which would have lowered FTC tar and nicotine yields by smoking less of the cigarette), and that tar and nicotine yields should be disclosed on a per-puff, as well as a per-cigarette, basis. For these reasons, the Tobacco Institute claimed that the FTC Method "may be deceptive because a smoker may assume his cigarette is delivering the amount of ‘tar' and nicotine reported by the FTC when in fact it will be delivering much less, the way he smokes." TIMN0120846-0849 at 0847-0848 (US 87967).

2350. Even at the time it was developed, scientists understood that the FTC method, like any standardized method, would provide an imperfect measure of the exact amount of tar and nicotine that a particular smoker would ingest from a particular cigarette. Instead, the method was intended to give representative approximations of the amounts of tar and nicotine generated by different brand cigarettes when smoked under identical conditions. Those approximations could then provide a useful comparison of the tar and nicotine a human smoker would receive from smoking different brands. For example, the FTC stated in 1983: "If consumers avoid

blocking ventilation holes, cigarettes smoked in the same fashion will yield ‘tar', nicotine, and carbon monoxide in general accordance with their relative FTC rankings." 03573029-3030 at 3029 (US 22244); 48 Fed. Reg. 15,953 at 15,954 (Commission Determination Re Barclay Cigarettes; Amendment of Report of "Tar," Nicotine, and Carbon Monoxide Content of 208 Varieties of Cigarettes; Request for Comment on Possible Testing Modifications). While the FTC Method does provide a means by which to compare brands, the comparison does not meaningfully relate to the reality of smoking.

2351. In a November 29, 1994 written statement submitted for the December 5-6, 1994 NCI Conference on the FTC Cigarette Test Method, B&W, American Tobacco, Lorillard, and Liggett defended the FTC Method, stating that “The FTC’s Test Method Provides Useful and Reliable Information About the Relative ‘Tar' and Nicotine Yields of Cigarettes," and contending that FTC yields are a "useful predictor" of the amount of tar and nicotine smokers will inhale. 2041186475-6517 at 6475, 6486-95, 6498-6504 (US 22181*).

2352. RJR employees, David Townsend and Donald de Bethizy, maintained at the same Conference, in both their written and oral statements, that the FTC Method was a valid and accurate test method that approximates human smoking. 2048381972-2310 at 1975 (US 22190).

2353. In his written statement, Townsend asserted that the FTC Method "provides accurate and reliable information" that "is a key factor for consumers to make objective choices in the marketplace" and stated that "implementation of the FTC testing for ‘tar' and nicotine . . . was an important step in providing data for the consumer to use to make an informed decision in the marketplace." 521321297-1301 at 1297 (US 22137). Townsend further stated that

> it is clear from the information, I believe, that the FTC test method

> does provide accurate and reliable information for the consumer to use in the marketplace; that is, to compare yields of various brands and make objective choices. The consumer makes choices based on the FTC information, or the rankings derived from that information. . . . The FTC method was established to provide accurate and reliable comparative smoke yield information, and has been very successful in doing that.

2048381972-2310 at 2252, 2256 (US 22190).

2354. De Bethizy stated: "The FTC method provides an accurate and meaningful ranking of cigarettes. . . . On average, smokers absorb approximately the yield of nicotine predicted by the FTC method, and smokers of lower yielding products absorb less nicotine . . . ." 520011445-1480 at 1445, 1457-58 (US 22101). He also stated: "The FTC method provides an accurate and meaningful ranking of cigarettes. . . . [T]he compensation phenomenon does not undermine the FTC method." 2048381972-2310 at 2264, 2267 (US 22190).

2355. In their 1996 comments on the FDA's proposed tobacco Rule, Defendants continued to maintain that there is a meaningful relationship between the FTC ratings and smoker tar and nicotine exposure. 2505597781-7998B at 7968-87 (US 23028*).

2356. While defending the FTC Method and resisting proposed changes to it, Defendants have made repeated public assertions that they have substantially reduced the tar and nicotine deliveries of cigarettes, citing the FTC ratings as their primary support for this assertion. 2505597781-7998B at 7987-88 (US 23028*) (1996 Comments of B&W, Liggett, Lorillard, Philip Morris, Inc., RJR & Tobacco Institute before the U.S. FDA, Vol. III) (claiming that "over the years, the average yield of cigarettes generally has declined markedly. . . . The fact is that from 1950 to the present, U.S. cigarette manufacturers have reduced ‘tar' and nicotine yields by more than 60 percent"); 2046932308-2363 at 2314-2315 (US 85067) (Philip Morris 1994

submission to NCI regarding the FTC Method, asserting "an overall decrease in the ‘tar' and nicotine intake of smokers" as a result of reduced FTC yields); 521321297-1301 at 1299 (US 22137) (1994 RJR employee's statement that "all cigarettes are substantially lower in 'tar' yields than they were in past years" and his claim that "[c]igarette design changes have resulted in an overall major reduction in smoke yields.").

2357. A February 7, 1996 Covington & Burling memorandum, from Tobacco Institute attorney David H. Remes to attorneys and senior employees from Philip Morris and B&W and attorneys from the law firms of Arnold & Porter and Collier Shannon, summarized a meeting held earlier that day between Remes and C. Lee Peeler, Director of Advertising Practices in the Bureau of Consumer Protection at the FTC. At this meeting, Remes relayed to Peeler the industry's claim that low tar cigarettes actually do deliver less tar and nicotine to smokers, and that consumers need not be informed about changes in smoking behavior related to smoker compensation. Remes communicated his "observation that in many cases low-yield brands contain so much less tobacco than higher-yield brands that any compensation could not begin to erase the difference." Remes also said that he had made a "suggestion that smokers do not need to have it explained to them that smoking a lot of low-yield cigarettes will result in greater T&N deliveries, just as people do not need to be told that eating a lot of low-fat cookies can make them fat." Remes noted that Mr. Peeler "responded that the analogy does not hold because we know how much fat is ‘delivered' in each cookie but not how much T&N is delivered by each cigarette." 92613896-3899 (US 87919); Wells WD, 63:1-64:16.

2358. Over the years, there has been discussion in the scientific community about revising the FTC Method to make it a more accurate measure of the tar and nicotine that human

smokers actually ingest. Defendants have opposed changing the FTC Method, arguing that it provides a way for consumers to choose cigarettes and meaningfully compare them in terms of the tar and nicotine exposure from smoking. Henningfield WD, 55:6-12.

2359. For instance, in September 1997, the FTC solicited public comment on a proposal to replace the existing FTC test method with a methodology that would "provide information on the tar, nicotine, and carbon monoxide yields obtained under two different smoking conditions" to provide "a range of yields for individual cigarettes smoked under less intensive and more intensive smoking conditions," and to convey to smokers that "a cigarette's yield depends on how it is smoked." FTC Cigarette Testing; Request for Public Comment, 62 Fed. Reg. 48,158, 48,159 (Sept. 12, 1997) (US 88618). In response, Philip Morris, RJR, B&W, and Lorillard submitted joint comments to the agency defending the current FTC Method and opposing the proposed change, stating: "The manufacturers believe that the current test method should continue to be used. They are not convinced that it should be supplemented with a second test method." Comments of Philip Morris Inc., R.J. Reynolds Tobacco Co., Brown & Williamson Tobacco Corp., and Lorillard Tobacco Co. on the Proposal Titled FTC Cigarette Testing Methodology Request for Public Comment (62 Fed. Reg. 48,158) at 2-3, (no bates) (US 88618) ("Joint Comments") .

2360. The comments further stated that: "Smokers are familiar with the ratings produced by the current test method, and continued use of the current test method assures historical continuity of the data. For these reasons, testing under the current FTC test method should continue." Id. at 4. The comments referred to compensation as a "hypothesized" and "weakly documented phenomenon" and stated: "The testing protocol should not be modified to reflect

‘compensatory' smoking, in part because "current knowledge about these behaviors is too sparse to be usable for modeling purposes." Id. at 43.

2361. Defendants' comments urged that "[t]he protocol should not be modified to incorporate a vent-blocking condition." In response to the FTC's question: "What kinds of consumer education messages should be created to inform smokers of the presence of filter vents and the importance of not blocking them with their fingers or lips?" Defendants' 1998 comments stated: "The manufacturers are not convinced that vent-blocking is a sufficiently common or documented phenomenon that smokers should be alerted to the presence of filter vents and instructed not to block the vents." Id. at 60, 82.

2362. In response to the FTC's question: "If the effect of compensatory smoking behavior is not incorporated in the tar and nicotine ratings, should a disclosure warning smokers about compensatory smoking behavior be required in all advertisements?" Defendants' 1998 comments stated: "The manufacturers are not convinced that compensatory smoking behavior is a sufficiently common or documented phenomenon that consumers should be alerted to its existence. . . ." Id. at 89.

**a. Tobacco Institute**

2363. In anticipation of the 1981 Surgeon General's Report, the Scientific Affairs Division of the Tobacco Institute drafted a December 15, 1980 memorandum to Horace Kornegay, President of the Tobacco Institute, warning that, among other issues, the Report was expected to include a discussion of smoker compensation. Rather than recommending disclosure of full and complete information on the subject to the public, the "Response" section of the memorandum stated:

> [I]t is suggested that the TI take the following position on the report and that on receipt of any queries from the press, staff be instructed to respond as follows: "The results of research in the past are so mixed that it is impossible to reach and support a firm conclusion at the present time. All one has to do is be aware of and appreciate the call for more research to realize that the Surgeon General's Office cannot objectively have a strong position supported by research. The office is looking for more money in order to support the current campaign against the tobacco industry."

TIMN0073798-3799 at 3799 (US 85127).

**b. Philip Morris**

2364. In a June 29, 1988 "Statement of Philip Morris, U.S.A." to Congress, Philip Morris made statements equating machine measured tar and nicotine deliveries with actual smoker intake:

> From the 1940s to today, Philip Morris has similarly spent millions on its own research program to modify its cigarettes. As a result, the “tar” and nicotine yields of today's cigarettes -- the principal concern of the scientists who believe cigarettes pose health risks -- have been reduced as much as 95% from the 1957 averages. . . . [I]t was Philip Morris scientists who perfected the instrument that was used for many years by the Federal Trade Commission and other groups around the world for the measurement of “tar” and nicotine yielded by cigarettes . . . [filter] ventilation techniques also contributed to an overall reduction in ‘tar' and nicotine levels. . . . As a result of these advances in filtration and ventilation, Philip Morris and the other cigarette companies were able to reduce “tar” and nicotine levels substantially in the late 1950s. . . . As a result of these dramatic reductions in the “tar” and nicotine levels of the leading brands, as well as the introduction of entirely new low-delivery cigarettes, the overall intake of “tar” and nicotine by American smokers decreased dramatically even before the Surgeon General's Report against smoking in 1964. . . . As a result of all this research, Philip Morris succeeded in reducing “tar” and nicotine levels even more in the years following the 1964 Surgeon General's Report.

TI01770431-0458 at 0433, 0439, 0441-0443, 0451 (US 85065).

2365. In his April 14, 1994 written Statement before the House of Representatives Subcommittee on Health and the Environment of the House of Representatives Energy and Commerce Committee, William Campbell, President and CEO of Philip Morris USA, stated, contrary to extensive information developed by and known to Philip Morris USA, that "consumers are not misled by the published nicotine deliveries as measured by the FTC method." Campbell also claimed that "tar and nicotine levels have decreased dramatically over the past 40 years. Today, the market is populated with a number of 'ultra low' brands which deliver less than 5% of the tar and nicotine of popular brands 20 years ago." In a statement carefully worded to refer only to the number of cigarettes smoked, ignoring all other methods of smoker compensation, Campbell both misrepresented the evidence about whether downswitchers smoke more cigarettes per day and denied that smoker compensation rendered the FTC tar and nicotine yields misleading:

> Commissioner [David] Kessler suggested that the FTC figures were misleading because smokers might "compensate" for lower tar and lower nicotine brands by smoking those cigarettes differently. In fact, the data indicates that, despite the dramatic reductions in tar and nicotine levels over the past decades, the number of cigarettes smoked by an individual has remained constant, and even declined slightly. More importantly, the data shows no difference in the number of cigarettes smoked by those who favor higher and lower yield brands.

ATC2746877-6887 at 6877, 6878, 6887 (US 59009); compare with 1000861953-1953 (US 35484) (Wakeham 3/24/61) ("As we know, all too often the smoker who switches to a hi-fi cigarette winds up smoking more units in order to provide himself with the delivery which he had before.").

2366. An October 1994 document that Philip Morris submitted to the United States National Cancer Institute, titled "Submission of Philip Morris Incorporated to the National Cancer Institute Consensus Conference on the FTC Cigarette Testing Methodology and Rating System," stated:

> A number of the FTC's questions . . . relate to “compensation,” a term used to suggest that some smokers of lower yield cigarettes may sometimes alter their smoking behavior in ways that may tend to reduce the differences in yields among brands and styles implied by their relative FTC method ratings. While there is a fair amount of recent literature on compensation, few studies have been performed that provide reliable data to establish the occurrence of this suggested phenomenon. We appreciate the interest people have in possible compensation. But there can be no real dispute that, to date, the scientific literature on compensation is limited and inconclusive. . . . [W]hatever conclusions may be reached about compensation, the FTC method remains an appropriate standard for measuring cigarette properties. The reporting of FTC method yields . . . remains a useful source of information to consumers choosing among cigarette brands and styles.

2046932308-2363 at 2312, 2362-2363 (US 85067).

2367. A document, titled "Philip Morris Management Corp., Worldwide Regulatory Affairs Department, 1996 Core Issues Plan," discussed under the topic of "Core Issue #2 Federal Trade Commission," Philip Morris's response to an NCI Conference recommendation to change the FTC Method and to provide more information to consumers: "Preserv[ing] our ability to . . . advertise low tar/light and ultra low tar/ultra light cigarettes as such; avoid changes in the FTC method for as long as possible; [and] minimize changes in the FTC method to the extent possible. . . ." 2046266224-6268 at 6234 (US 23936).

**c. R.J. Reynolds**

2368. In a July 2, 1984 letter to the FTC from Samuel B. Witt III, RJR Vice President,

General Counsel, and Secretary, Witt stated:

> [T]he Commission has also asked for comment on broad questions concerning "smoker compensation. . . ." In their submissions [in response,] health organizations take the position (which is not correct) that the average smoker will get the same amount of "tar" and nicotine from higher and lower "tar" cigarettes, therefore making the Commission's numbers irrelevant to the consumer. RJRT, on the other hand, maintains that the average smoker will get less "tar" from smoking a low "tar" cigarette than he or she will receive from smoking a higher "tar" product, and that the average smoker of low "tar" cigarettes does not smoke more cigarettes than the average smoker of higher "tar" cigarettes.

2025045756-5761 at 5760 (US 22247).

2369. In an April 14, 1994 statement to the House of Representatives Subcommittee on Health and the Environment of the House Energy and Commerce Committee regarding the potential regulation of cigarettes by the FDA, RJR stated:

> Since the 1950s, Reynolds tobacco has pursued . . . development of new technologies to reduce yields of "tar" and nicotine generally . . . [this] line of research has been remarkably successful. . . . The important point is that in spite of broad variations in how individual smokers may smoke any given cigarette, the fact remains that the lower the yield by FTC numbers, the lower the yield will be to any given smoker. The yield for any given smoker will probably be different from the FTC yield; for some smokers it will be higher, for some it will be lower, but overall, the FTC yields are generally predictive of the yield to smokers as a group. The statement, however, that "in reality" low yield cigarettes do not yield low "tar" and nicotine, is not true.

516962199-2227 at 2203-2204 (US 85128).

**d. Brown & Williamson**

2370. In the mid-1990s, Tommy Sandefur, B&W CEO, submitted a written statement to Congress defending the FTC Method: "We also vigorously dispute the suggestion of [David]

Kessler and [John] Slade that the ‘tar' and nicotine ratings produced using the FTC test method are meaningless or misleading." More than ten years earlier, on March 19, 1984, Ernest Pepples, B&W Senior Vice President and General Counsel, wrote a letter to Howard Liebengood of the Tobacco Institute acknowledging that FTC tar and nicotine ratings "may be misleading to consumers" and bear no relation to actual consumer intake. Compare 682637627-7629 at 7629 (US 22946) with 521060910-0912 (US 20892).

2371. Susan Ivey, President and CEO of B&W, admitted at trial that B&W "has been aware for many years" that some smokers compensate when smoking low tar cigarettes. B&W takes a different position on its website, which states that "[t]he question of why compensation occurs is still the subject of scientific research, and the relative importance of tar versus nicotine in determining compensation is unclear." The website also states that "how much smokers alter their behavior when they switch to lower tar products, and for how long, is still unclear." The website also states that "our studies show that, as actually smoked by consumers, lower tar cigarettes will generally deliver less tar and nicotine than higher tar cigarettes, and cigarette deliveries generally align with the ranges associated with the descriptors: ultra lights, lights, and full flavor." Ivey WD, 67:19-21; TLT1040050-0055 at 0052-0054 (US 88620); Ivey WD, 64:1-67:11.

**e. BATCo**

2372. In an October 1999 Memorandum by British American Tobacco to the U.K. House of Commons Health Committee, titled "The Tobacco Industry and the Health Risks of Smoking," BATCo discussed compensation:

> It is clear that compensation does occur, but that . . . despite

> compensation, smokers receive less tar on average when switching to a lower tar cigarette. . . . The evidence suggests that increasing the number of cigarettes consumed, blocking of ventilation holes and increasing inhalation depth, are not common compensation mechanisms. . . . The limited evidence of which we are aware, suggests that switched smokers either revert gradually to their former, non-compensatory behaviour (which results in lower overall intake of smoke), or change again to a brand which they prefer and which does not require the extra "effort" of taking larger puffs (which may or may not result in lower intake).

322017057-7142 at 7108-09 (US 22068); Ivey WD, 69:4-13.

**f. American Tobacco**

2373. Eric Gesell stated, on behalf of American Tobacco, that the company did not believe that smokers smoke for a certain level of nicotine and adjust their level of smoking when switching between different types of cigarettes to ensure that they get the same amount of nicotine. Gesell PD, Minnesota, 9/18/97, 5:8-25; 6:10-17; 98:21-100:6.

2374. Gesell also said on behalf of American that the FTC Method tar and nicotine yield data "is meaningful, and it was meaningful, and probably still is today." Gesell PD, Minnesota, 9/18/97, 5:8-25; 6:10-17; 107:7-108:6.

**g. Lorillard**

2375. In 1999, Alexander Spears, CEO of Lorillard, stated publicly that the FTC tar and nicotine numbers did not need to be explained to smokers because it was "very obvious" that they were meaningless due to smoker compensation. Spears PD, Minnesota, 9/23/97, 70:2-72:2.

**5. Despite Their Internal Knowledge, Defendants' Marketing and Public Statements About Low Tar Cigarettes Continue to Suggest that They Are Less Harmful than Full-Flavor Cigarettes**

2376. As detailed below, Defendants made, and continue to make, false and misleading

statements regarding low tar cigarettes in order to reassure smokers and dissuade them from quitting. These actions include: assertions that low tar cigarettes deliver "low," "lower," or "less" tar and nicotine than full-flavor cigarettes; claims that low tar cigarettes are "mild" or deliver "clean" taste; and use of brand names with descriptors such as "light" and "ultra light," with full knowledge that consumers interpret these claims and descriptors to convey reduced risk of harm.

2377. Low tar cigarettes have captured an enormous share of the total cigarette market. The percentage of low tar cigarettes (i.e., cigarettes with an FTC-reported tar yield of 15 mg. or less) has increased from 2% in 1967 to 81.9% of total cigarette sales in 1998. (no bates) (US 86655) (FTC, 1994 Report at Table 6A, Table 7); 92382035-2095 at 2057 (US 57179); (no bates) (US 87925 at 8) (FTC, 1979 Report); (no bates) (US 60434 at 22-26) (FTC, 1998 Report).

2378. From the 1960s to the present, Defendants' marketing of their health reassurance brands has featured claims of lowered tar and nicotine accompanied by written statements that implied a health benefit as a result of the lowered tar levels. Defendants have also used marketing imagery, such as lighter color cigarette packaging and white tipping paper, to communicate to smokers that Defendants' health reassurance brands were "lighter" and lower in tar.

2379. Over the last five decades, Defendants have not only introduced numerous stand-alone cigarette brands that purport to be low in tar (e.g., Merit, Vantage, and Carlton), but have also introduced low tar "brand extensions" of existing full flavor cigarette brands (e.g., Marlboro Lights and Ultra Lights as extensions of the full flavor Marlboro brand). Defendants have used so-called brand descriptors such as "light," "medium," "mild," and "ultra light" to market both their new brands, as well as their brand extensions as low in tar. Virtually every major brand

undertook line extensions and by 1980 over 50% of cigarettes sold were “low tar” (with an FTC Method tar yield of 15 mg or less). Dolan WD, 123:21-124:7. Defendants acknowledge that, today, every major manufacturer continues to manufacture and sell low tar brands and brand extensions in both the 'light' and ‘ultra light' categories. Ivey WD, 54:6-17; Bonhomme WD, 8:13-9:18.

2380. Although the FTC does not formally classify cigarettes according to tar or nicotine yield, industry practice, according to Denise Keane, Philip Morris General Counsel, has long been to apply the ‘light' descriptor to cigarettes with 7 to 14 milligrams of tar, and the ‘ultra light' descriptor to cigarettes with fewer than 7 milligrams of tar." These brand descriptors "have been developed by cigarette manufacturers through their advertising." Keane WD, 56:14-23; Mulholland WD, 26:4-27:9; accord Henningfield WD, 56:8-11 (testifying that the FTC has no "control over which cigarettes Defendants advertise as 'light' or 'ultra light'").

2381. The terms "Light" and "Low Tar," as they are used by Defendants, are essentially "meaningless" and "arbitrary.” As Dr. Farone explained:

> [T]here are lights of certain brands with higher tar levels than regulars of other brands from the same company, and there are also lights and regulars of the same brand that have the same FTC tar rating. So therefore the term “light” is not related to tar or taste. For example, according to the most recent FTC report of tar and nicotine yields, Philip Morris sells versions of Virginia Slims and Virginia Slims Lights that both deliver 15 mg of tar by the FTC method.

Farone WD, 116:3-14; 525311179-1223 at 1185, 1207-1208, 1222 (US 52977).

2382. The FTC's 1967 report to Congress concluded that Defendants were using the word "mild" in advertising “as a euphemism for cloaking the dangers of increased cigarette

smoking." The Report noted, in particular, the following ads:

> Carlton filters have "Good mild taste . . . created for those who are interested in the amount of tar and nicotine in the smoke of their cigarette. . . ." "Montclair (menthol filter) cigarettes are made especially for smokers who seek exceptional mildness. . . ." "You get Pall Mall's famous extra length of fine tobaccos . . . and a filter tip. Result? A new longer length, a full 100 millimeters long and a new milder taste . . ." and "(Chesterfield kings) made to taste even milder through longer length."

92382035-2095 at 2058-2059 (US 57179).

2383. In its 1968 report, the FTC concluded that Defendants' use of the phrase "mild taste" in advertising is just another way to communicate the term "less harmful" to smokers:

> Advertising in 1966 featured the phrase "mild taste" to describe the satisfactions obtained from smoking and also as a euphemism to cloak the dangers of cigarette smoking. The euphemistic effect derives from the possibility that the public assumes "mild" tasting cigarettes to be less strong, i.e. lower in tar and nicotine than many cigarettes, and hence less hazardous.

TIMN288040-8122 at 8055-8056 (JD 043418).

2384. The 1971 FTC report noted that "[r]elieving anxieties about the risks to health posed by cigarette smoking" was among Defendants' three main advertising themes and that "[c]laims of low tar and nicotine content present yet another appeal to relieve concern about the dangers to health associated with cigarette smoking." In 1975 and 1976 reports, the FTC reported that this theme, used separately or with themes regarding taste or desirable personality characteristics, "continued to predominate in 1975," and "continued to dominate in 1976, with little variation in format and copy except in the greatly increased promotional emphasis given to the lower and lowered 'tar' varieties." 680043553-3595 at 3564, 3567 (US 87922);1005121108-1119 at 1114 (US 87921); (no bates) (JD 003563 at 4-5) (FTC, 1976 Report).

2385. The 1981 FTC report on cigarette advertising noted, many of Defendants' advertising campaigns had, over the course of the preceding four decades, "impl[ied] that smoking a particular brand solves the health problem or at least minimizes the risk." The report noted that Philip Morris's Parliament and American Tobacco's (subsequently B&W's) Tareyton cigarettes "imply that their special filters minimize the risks of smoking." The report also cited the advertisements for RJR's Vantage, B&W's Viceroy, and Lorillard's True cigarettes as examples of advertising campaigns implying that the brands marketed are either not harmful or less harmful. (no bates) (JD 004744 at 2-12) (FTC, 1981 Report).

2386. Similarly, the 2001 Institute of Medicine report cited the advertisements of Defendants Philip Morris, RJR, B&W, American Tobacco, Lorillard, and Liggett as examples of advertisements that relate health benefits to particular low tar cigarette brands. (no bates) (US 20919) (Institute of Medicine, Clearing the Smoke: Assessing the Science Base for Tobacco Harm Reduction) (K. Stratton, et al., eds., National Academy Press 2001); 99053048-3558 at 3124-27 (US 57494).

2387. The FTC noted in a 1976 report that "[t]he lower and lowered ‘tar' and nicotine cigarettes have in the last year been the subject of an intensive promotional effort by cigarette manufacturers." Defendants' spending on the advertising and marketing of low tar cigarettes (i.e., cigarettes yielding 15 mg. or less tar per the FTC Method) has been disproportionately high compared to their domestic market share. The FTC's report for 1997 revealed that for every single year from 1967 to 1992. Defendants' advertising and promotional spending for low tar cigarettes exceeded their domestic market share. According to one marketing expert, low tar cigarettes came to "substantially reshape and define the cigarette market," explaining that:

> [T]he real “boom: time for these cigarettes is the late 1970s. In 1974, manufacturers devoted about 15% of their advertising and promotion dollars to these products. By 1979, this spending grew to 67%. At the time, the percent of sales represented by low tar was only 30%, so spending was disproportionately high on these “health reassurance” brands. These products, which accounted for less than 15% of cigarette sales in 1975 came to hold the majority of the market by 1981.

It was not until the mid-1990s that the percentage of sales made by low tar brands finally equaled the amount that Defendants were spending to promote them, which was about 70% of the industry total. HHS1311770-1805 at 1799 (US 76080); Dolan WD, 125:6-126:7.

2388. According to Dr. Henningfield, who among his many other credentials headed the National Institute of Drug Abuse from 1994 to 1996, smokers are not always familiar with the FTC rating of their cigarette, but are aware of whether their cigarettes are "light" cigarettes or "regular." There is little, if any, dispute that consumers believe that "light" cigarettes deliver less tar and nicotine than regular cigarettes, and that consumers believe that regular cigarettes are more hazardous than "light" cigarettes. Henningfield WD, 56:12-57:10.

2389. Relatively few people understand that smoking low tar or light cigarettes can be -- and often is -- just as dangerous as smoking full flavor cigarettes. Weinstein WD, 54:21-55:20. A peer-reviewed, published study showed that 70% of low tar cigarette smokers believe that such cigarettes decrease one's daily intake of tar. Weinstein WD, 55:5-8 (citing Kozlowski et al., Smoker reactions to a "radio message" that Light cigarettes are as dangerous as regular cigarettes. Nicotine & Tobacco Research, 1(1);67-76(1999)). Similarly, another study showed that approximately half of all respondents did not know how many light cigarettes would have to be smoked to get the same level of tar intake as from one full flavor cigarette. Fewer than 10%

believed that it would be one light cigarette. Weinstein WD, 55:12-15 (citing Kozlowski, L.T., Goldberg, M.E., Yost, B.A., White, E.L., Sweeney, C.T., Pillitteri, J.L. Smokers' misperceptions of light and ultra-light cigarettes may keep them smoking. American Journal of Preventive Medicine, 15, 9-16 (1998) ("Kozlowski, Goldberg, et al., 1998")).

2390. Defendants have used this misperception to their advantage. A 1996 article in the American Journal of Public Health cited a 1993 Gallup survey in which 56% of smokers believed use of the term "low tar" conveyed relative safety compared to full-flavor cigarettes. The American Journal of Public Health article also cited a 1987 National Health Interview Survey finding that 46% of smokers of cigarettes with tar yields of 6 mg. or lower (per the FTC Method) believed they had reduced cancer risk compared with smokers of cigarettes with higher FTC tar yields. 2074759740-9746 at 9741 (US 43526); accord 99053048-3558 at 3112 (US 57494) (2001 Institute of Medicine study stating "When filtered and low-yield cigarettes were introduced into U.S. markets, they were heavily promoted and marketed with both explicit and implicit claims of reducing the risk of smoking. Even as data accumulated, albeit slowly, that these products did not result in much -- if any -- decrease in risk, consumers have continued to believe otherwise. . . . Consumer misunderstanding is explained in part by the ways in which these products are marketed. . . . [T]he tobacco companies have appealed to health concerns of smokers at least since 1927. Claims about tar and nicotine levels appeared as early as 1942").

2391. Defendants continue to disseminate false and misleading public statements regarding their true intent in marketing low tar cigarettes. For example, Defendants Philip Morris, RJR, B&W, and Lorillard jointly stated to the FTC in February 1998: "The manufacturers do not claim that lower-yield cigarettes are ‘safe' or are ‘safer' than higher yield

cigarettes." Comments of Philip Morris Inc., RJR Tobacco Co., Brown & Williamson Tobacco Corp., and Lorillard Tobacco Co. on the Proposal Titled FTC Cigarette Testing Methodology Request for Public Comment (62 Fed. Reg. 48,158) at 3, 94 ("Joint Comments") (US 88618).

2392. Defendants have publicly committed to refrain from marketing with implied health claims. In April 1964, the Cigarette Company Defendants adopted the Cigarette Advertising and Promotion Code ("Code"), which includes provisions prohibiting "advertising which makes a representation with respect to health." The Cigarette Company Defendants have claimed publicly that they have obeyed and continue to obey the 1964 Code, last revised in December 1990. Krugman WD, 164:6-21. Each cigarette company Defendant continues to state on its website and in other public statements that it has adopted the Code and that it follows the Code in planning and executing its cigarette marketing. 2070557699-7702 (US 20519). 2025345360-5362 (US 20414); MNAT00608606-8614 (US 78779); TIMN0102493-2494 (US 21271); TIMN0015615-5617 (US 21265); 2022976326-6335 (US 20370); ATX040294056-4056 (US 58599). See Section V(F)(7)(a)((1)) regarding the total lack of enforcement of the Code. More recently, Defendants agreed in the 1998 Master Settlement Agreement not to make "any material misrepresentation of fact regarding the health consequences of using any tobacco product." Section III(r) of the Agreement states:

> Prohibition on Material Misrepresentations. No Participating Manufacturer may make any material misrepresentation of fact regarding the health consequences of using any Tobacco Product, including any tobacco additives, filters, paper or other ingredients.

(no bates) (JD-045158) (Master Settlement Agreement, § III(r)).

2393. Defendants also told the FTC in their 1998 testimony: "Smokers are familiar with

the ratings produced by the current test method, and continued use of the current test method assures historical continuity of the data. For these reasons, testing under the current FTC test method should continue." Joint Comments at 4.

2394. In response to the FTC's question regarding the need for official guidance on brand descriptors, Defendants stated: "The manufacturers are not convinced that there is a need for official guidance with respect to the terms used in marketing lower rated cigarettes." As to terms, such as "light" and "ultra light," "[t]he manufacturers believe smokers understand that these descriptors are terms of comparison rather than signifiers of absolute value." Joint Comments at 94.

2395. In response to the following FTC query:

> What data, evidence, or other relevant information on consumer interpretation and understanding of terms such as “ultra low tar,” “ultra light,” “low tar,” “light,” “medium,” “extra light,” and “ultima,” as used in the context of cigarettes exists? Do consumers believe they will get significantly less tar from cigarettes described as “light” or “low tar” than from regular full flavor cigarettes, and do they believe they will get significantly less tar from cigarettes described as “ultra low tar” or “ultra light” than from “light” or “low tar” cigarettes? Do the brand descriptors convey implied health claims?

Defendants Philip Morris, RJR, B&W, and Lorillard jointly stated in their joint comments to the FTC:

> The manufacturers believe that consumers choose “light” or “ultra” products for a variety of reasons, including lighter flavor, lighter taste, less menthol (or other flavor) taste, and smoother smoking characteristics. Some consumers may choose such products for other reasons. The manufacturers do not intend the descriptors to convey any level of ‘safety’ with regard to their products.

Defendants' joint comments further stated: "The manufacturers are not aware of evidence that

consumers use descriptors in lieu of the FTC numbers as their primary source of information about the ‘tar' and nicotine yields of different brand styles."  Joint Comments at 95.

2396. In response to the FTC's question:

> What available evidence exists concerning how consumers view cigarettes with relatively low tar and nicotine ratings and their perception of the relative risks of smoking such cigarettes rather than full flavor cigarettes?

Defendants Philip Morris, RJR, B&W, and Lorillard jointly stated:

> The manufacturers are unaware of evidence concerning such consumer views and perceptions except to the extent that such evidence is presented in [the National Cancer Institute's Smoking and Tobacco Control Monograph No. 7].

Joint Comments at 89.

2397. Defendants' testimony to the FTC fails to make any reference to the vast amounts of consumer research Defendants conducted, and had conducted for them by their numerous advertising and marketing consultants, that expressly found that many consumers strongly disliked the taste of low tar cigarettes, but were smoking them because they believed they were healthier for them. Accord 2041186475-6517 at 6478, 6504 (US 22181*) (November 29, 1994 submission to the National Cancer Institute on behalf of B&W, American Tobacco, Lorillard, and Liggett contending that smokers use FTC tar and nicotine ratings primarily for information relating to taste considerations, referring to what Defendants called "the well-established significance of the FTC's machine-determined yields for comparing the flavor, richness and satisfaction of different brands of cigarettes," and predicting that if modifications to the FTC Method occurred, "[c]onsumers . . . would be deprived of important information about the flavor, taste and feel of cigarettes -- information consumers consider to be highly relevant in

distinguishing among" brands).

2398. As detailed below, Defendants' public statements about low tar cigarettes on their websites, the statements of their executives, and their internal documents are false and misleading.

**a. Philip Morris**

**(1) Philip Morris's Low Tar Cigarette Marketing Techniques**

2399. Over the last 50 years Philip Morris has used a variety of marketing techniques to reassure smokers that certain brands and types of cigarettes would reduce their health risk from smoking by reducing their exposure to tar. Philip Morris advertisements in the early 1950s made explicit claims of reduced harm, such as the following:

> 1952: "If, like millions today, you are turning to filter cigarettes for pleasure plus protection . . . it's important that you know the Parliament Story." 696000888-0916 at 0894, 0905, 0908 (US 21387); Harris WD, 70:3-6.
>
> 1952: "Parliament's exclusive Filter Mouthpiece gives you the important extra protection of the Parliament 'Safety-Zone' Construction. . . . As the irritants, brown tars and colorless nicotine are trapped, they remain where they belong–in the recessed filter, completely out of contact with your lips." 696000888-0916 at 0894, 0905, 0908 (US 21387)
>
> 1954: "You're <u>So Smart</u> to Smoke Parliaments." (US 2731) (emphasis in original); <u>see also</u> (US 2756) (1956 Parliament advertisement in Sports Illustrated magazine noting same).
>
> 1954: "The cigarette that takes the FEAR out of smoking!" 696000888-0916 at 0908 (US 21387).

2400. In addition to making explicit health claims, since the 1970s Philip Morris has

used brand descriptors such as "light" and "ultra light" to communicate that certain brands of cigarettes are low in tar and nicotine. James Morgan, who was Brand Manager of Marlboro from 1969 to 1972, during the time when Philip Morris introduced Marlboro Lights, its first "light" cigarette, explained the intended meaning of the "lights" descriptor. Morgan stated that, from the very beginning, the "lights" descriptor was intended to communicate that the brand was low in tar -- as opposed to a brand that was lighter in taste:

> From the very beginning the phrase, “Lowered tar and nicotine” was going to be on the package [of Marlboro Lights]. That was the phrase that described to the consumer what the product was in our judgment. . . . We felt the brand name, Marlboro Lights, was a real help in terms of the description of the product being low in tar and nicotine which appeared on the pack from the inception of the project. . . . We are not talking, in my judgment, talking about light . . . as a taste. It's not a term that means anything in terms of taste, and the name Marlboro Lights as I said before, a word which we feel has appeal in a different sense than suggesting what the cigarette even tastes like. . . . It was our desire in this entire Marlboro Lights brand project to constantly position Marlboro Lights as being -- as having lower tar and nicotine from Marlboro [Reds].

Morgan PD, Philip Morris Inc. v. R.J. Reynolds Industries, Inc., 10/15/74, 4:9-10; 10:15-11:4; 78:20-79:14; 79:25-80:5; 81:8-12; 85:23-86:4; Morgan PD, Philip Morris Inc., 11/25/74, 247:11-14.

2401. According to Morgan, Philip Morris made a calculated decision to use the phrase “lower tar and nicotine” even though its own marketing research indicated that consumers interpreted that phrase as meaning that the cigarettes not only contained comparatively less tar and nicotine, but also that they were a healthier option. Morgan PD, Price v. Philip Morris, Inc., 6/15/02, 45:2-45:25, 45:2-46:25, 47:2-47:25, 48:2-48:25, 49:2-49:25, 50:2-50:25, 51:2-51:5,

52:15-52:20.

2402. Morgan, who later became CEO of Philip Morris, further explained in 2002 that rather than relying on the tar and nicotine numbers from the FTC Method, "the major influence in people's perceptions in the tar of a cigarette would have come from the marketing positioning of a brand as opposed to people literally reading the FTC [tar and nicotine figures]." Morgan also stated that,

> if you took the advertising, the point of sale, whatever may have been said on the racks or the cartons, the whole panoply of what the consumer saw about a cigarette brand would be more influential in that consumer's perception of the tar of that brand . . . than the fact that they may or may not have sat down and looked at a newspaper that had the latest Federal Trade Commission report.

Part of the image that Philip Morris was marketing was the concept of lowered tar and nicotine. Morgan PD, Philip Morris Inc., 11/25/74, 174:10-175:4; 175:16-175:25.

2403. Jeanne Bonhomme, Director of Consumer Insights for Philip Morris, echoed these views:

> Philip Morris aims its low tar cigarette marketing at least in part at smokers of regular cigarettes who are concerned about the amount of tar they are inhaling and want to reduce it. . . . Philip Morris was aware that consumers understood the “lights” brand descriptor from its advertising and marketing pieces to be equated with low tar.

Bonhomme WD, 12:6-11; 13:17-19; 15:1-4; 16:1-7; 43:11-14.

2404. In or around 1995, Philip Morris considered changing the name of Merit to Merit Lights, because "Philip Morris was concerned that consumer research showed that Merit marketing no longer effectively conveyed to consumers that Merit was low in tar." Bonhomme WD, 13:1-22.

2405. This contemplated name change is documented in a June 23, 1995 internal Philip Morris memorandum, titled "Merit ‘Filter' vs. ‘Lights' Test -- Research Proposal," from Lauren Schwed, Philip Morris Analyst, to Jodi Sansone, then Brand Manager for Merit at Philip Morris USA, and Rebecca Gordon, a Philip Morris USA Assistant Brand Manager under Sansone. The memorandum described the motivation behind an attached consumer research study as follows:

> Merit is considering changing the name on the Parent pack from “Filter” to “Lights” in order to clarify the tar level of the cigarette. There is a thought that changing the wording on the pack to replace the word “Filter” with the word “Lights” would help clarify what the true tar level is for Merit Parent. However, there is some concern that changing the name to “Lights” could possibly detract from the brand's flavor heritage.

2045628330-8330 (US 26955).

2406. In a memorandum dated November 27, 1995, Shari Teitelbaum, a consumer researcher for Philip Morris, summarized the results of the "Merit ‘Filter' vs ‘Lights' -- Final Report" for Sansone. Teitelbaum noted that the name change affected Merit smokers' perceptions: "Before tasting the cigarette, Merit smokers seemed to think that Merit Lights was lower in tar than Merit Filter." Teitelbaum noted that changing the name to Merit Lights caused one third of current Merit smokers to "alter their perception of Merit in terms of taste and tar level." The study also confirmed Philip Morris's fear that changing the name to Merit Lights would imply a poor-tasting cigarette: for current Merit smokers, "[t]he name change did seem to have a significantly adverse impact on perceptions of the brand's taste." 2045596010-6012 at 6011 (US 26952); 2045596013-6040 at 6032 (US 26953); Bonhomme WD, 14:1-15:4.

2407. Philip Morris did finally change the name of Merit Filters to Merit Lights, even though there was no difference in the cigarette. Brennan-Lund PD, Price v. Philip Morris, Inc.,

9/20/02, 157:15-22.

2408. Similarly, Philip Morris marketed a 15 mg. cigarette as both Virginia Slims and Virginia Slims Lights. 525311179-1223 at 1222 (US 52977).

2409. Jeanne Bonhomme verified that Philip Morris has known for years from its consumer research that some smokers "interpret brand descriptors as communicating a less hazardous cigarette than full-flavor brands." Bonhomme WD, 20:3-6.

2410. In an October 21, 1994 memorandum, titled "Marlboro Medium Smoker Image Study," Marian Halpern, an employee in the Philip Morris consumer marketing research department, reported to Tom Keim, a Philip Morris brand manager, that the "Reasons for Smoking Medium" were as follows:

> Most smokers said they chose Medium because of its perceived health benefit. Over half of the Medium smokers said they started smoking Medium because they wanted a cigarette with lower tar and nicotine (56%). For many respondents, the name “Medium” communicated information on this product feature, with almost one quarter (24%) of these smokers saying that ‘Medium' refers to the cigarette's lower tar and nicotine.

2063731671-1688 at 1672 (US 22222); Bonhomme WD, 18:1-19:5.

2411. Philip Morris tries to create marketing pieces that communicate certain brands are low in tar, not just with words like the "lights" brand descriptors, but also with the imagery they present to consumers, such as the color it selects for the cigarette pack and tipping paper. When packaging decisions are made at Philip Morris, it is recognized that the color influences peoples' perception of the strength and tar level of the product. Bonhomme WD, 20:10-17; 22:1-4.

2412. For example, Philip Morris knows that consumers perceive a blue cigarette pack and white tipping paper as an indication that a cigarette is low in tar, and that generally speaking,

the lighter the cigarette package color, the lower its tar content is perceived to be by consumers. Philip Morris continues to this day to market and sell Marlboro Lights and Marlboro Ultra Lights with lighter color packaging and tipping paper. Bonhomme WD, 21:13-18; 23:20-22.

2413. Nancy Brennan-Lund, Philip Morris Senior VP of Marketing, confirmed that, in order to communicate low tar in cigarettes, Philip Morris USA has used a "lighter, more white background" and a "white filter as opposed to a cork colored filter." Susan Norris, Marlboro Brand Manager from 1995-1999, also noted that, in her experience, colors such as silver and light blue communicate to consumers that a cigarette is an ultra light brand. Brennan-Lund PD, Price, 9/20/02, 179:6-17; Norris PD, United States v. Philip Morris, 7/31/03, 162:6-165:8, 179:17-184:19.

2414. Over the last five decades, Philip Morris has conducted extensive consumer research to perfect the delivery of its "light" and low tar cigarette brand marketing message to ensure it provided smokers with health reassurance and offered an alternative to quitting.

2415. Marlboro Lights. With respect to Marlboro Lights, Philip Morris designs the packaging to distinguish it from Marlboro Red and communicate to consumers that it provides "the best of both worlds," -- low tar and good taste. Bonhomme WD, 22:5-18.

2416. A November 15, 1971 "Philip Morris U.S.A. Inter-Office Correspondence" to James Morgan from the Philip Morris USA Marketing Research Department set forth results of a Philip Morris consumer study on Marlboro Lights. Under the heading "Advertising Awareness," the report stated that "[l]ow tar and nicotine remained the most frequently mentioned comment." 1000292744-2762, 2745 (US 35205).

2417. A December 1971 Marlboro Lights "Product Promotion Plan" distributed to the

Philip Morris sales force discussed the introduction of Marlboro Lights and ways to market and maximize sales of the brand. It stated:

> The introduction of Marlboro Lights is a very timely move on the part of your company. The consumer is becoming increasingly aware of tar and nicotine contents in cigarettes and many are searching for one with low tar and nicotine content and full flavor. Marlboro Lights fill this need.

2045404133-4163 at 4141 (US 85000).

2418. A retrospective Philip Morris document dated September 1991, titled "Background Information on PM Brands," stated:

> To capitalize on the booming low tar market, Marlboro Lights was introduced in 1972. It became the first successful low tar line extension in the industry . . . Marlboro further broadened its appeal to low tar smokers with the addition of Marlboro Lights 100's in 1978, Marlboro Lights King Size Flip-Top Box in 1980 and Marlboro Lights 100's Flip-Top Box in 1984.

2070143190-4433 at 3206 (US 27257).

2419. James Morgan, former President and CEO of Philip Morris USA, confirmed that Marlboro Lights were positioned as "lower in tar and lighter in taste than Marlboro Red" and were marketed to people seeking a low tar and nicotine cigarette, including smokers of both high and low tar cigarettes. A 1974-1975 Philip Morris magazine advertisement for Marlboro Lights stated: "Marlboro Lights. The spirit of a Marlboro in a low tar cigarette." Philip Morris has used the phrases "lowered tar and nicotine" and "Lights" in association with Marlboro Lights for over 30 years. Morgan PD, Price, 6/5/02, 20:13-25, 21:2-6, 32:22-25, 33:2-25, 34:2-11; 2045404133-4163 (US 85000); 03496228-6630 at 6323 (US 20057); Morgan TT, Price v. Philip Morris, Inc., 2/18/03, 64:4-7.

2420. A May 31, 1988 Philip Morris USA Marketing Research Department report from Philip Morris's primary advertising agency, Leo Burnett, and Philip Morris consumer researchers Karen Eisen and Jeanne Bonhomme, recited focus group results and stating that "many felt that Marlboro Lights was gaining in favor because of health concerns." 2044743883-3891 at 3885 (US 85001); Brennan-Lund PD, Price, 9/20/02, 190:1-192:11; Bonhomme WD, 23:5-19.

2421. Benson & Hedges. A 1974-1975 advertisement for Philip Morris's Benson & Hedges Multifilter brand stated: "Today people not only want a great tasting cigarette, but one that's low in 'tar' and nicotine. Nothing's simple anymore . . . [w]e've managed to lower the 'tar' and nicotine and still give you a cigarette with full rich flavor for you to enjoy." (US 87184); see also 03496228-6630 at 6326 (US 20057).

2422. A September 1991 Philip Morris document, titled "Background Information on PM Brands," stated:

> Benson & Hedges 100's Lights and Lights Menthol were introduced in 1977 in response to consumer preference for a milder, lower tar cigarette . . . today Benson & Hedges is among the leading low tar cigarettes. In mid-1982, Benson & Hedges Deluxe Ultra Lights was launched to take advantage of dynamic growth in both the 100mm and ultra low tar markets. The regular and menthol packings, both at 5mg tar, were instant successes. Fueled by distinctive packaging and taste richer than that of other ultra low (hence the ad slogan "rich enough to be called deluxe"), Deluxe Ultra Lights is a major contributor to the image and sales strength of Benson & Hedges.

2070143190-4433, 3211-3214 (US 27257); see also ADV004 1118-1120 (US 745) (1982 advertisement).

2423. Cambridge. Tom Goodale's handwritten notes from an October 15, 1979 meeting, the regular "new products" meeting of Philip Morris scientists, reflect Philip Morris's plan to

create an impression in consumers' minds of Cambridge as being extremely low in tar. The plan was to introduce Cambridge with a tar level below the then-lowest FTC tar brand sold -- Carlton -- and then to raise the tar level over time. The notes reveal, under the heading Project Trinity (Cambridge's project name prior to commercial introduction), "Hit mkt [market] below Carlton tar - afterwards can drift higher." 1001507595-7596 at 7595 (US 85102).

2424. According to Dr. Farone, former Director of Applied Research at Philip Morris USA, based on his participation in numerous monthly meetings in 1979 relating to Cambridge:

> The long-range plan [for marketing Cambridge] was to introduce the product as a low tar product and then eventually to increase the tar of the product. . . . [I]t was anticipated that the product would not sell very well at that low tar and eventually they would increase the tar, and having sold it as a low tar product people still would think of it as a low tar product. In my view, and from my experience, the lowest yielding version of many brands, including the original Cambridge, but also B&W's Carlton, RJR's NOW, etc., were created to give the brands a lowest tar image, while the sales are in the higher tar and nicotine versions of those brands. Those lowest yield versions of the brand are very hard to find in stores.

Farone WD, 2:2-8; 2:15-19; 128:4-128:22.

2425. In 1979, Philip Morris promoted Cambridge as a low tar brand yielding 0.0 mg tar (less than 0.1 mg tar) on the FTC test. The 0.0 mg tar Cambridge cigarette was removed from the market and replaced by Cambridge light and ultra light brands, all of which had considerably more tar than the original Cambridge cigarette. Dr. Farone made it clear that:

> The plan all along was to deceive the public into thinking that the Cambridge Light cigarette was a low tar cigarette, when in fact it was not . . . the trend to increasing tar deliveries in the product is very clear and there is no advertising that says that such increases are being made.

Farone WD, 129:18-132:17; 2024983860-3862 at 3860 (US 20015).

2426. Dr. Farone explained that "Philip Morris never even bothered to consumer test the 0.0 mg [Cambridge] version against the similar variant of Carlton and this is a major piece of evidence that they had no plans to keep it on the market." A September 20, 1979 Philip Morris memorandum, titled "Project Trinity," states that with respect to the 0.0 mg tar version of Cambridge: "Consumer testing is not required for this model." Farone WD, 128:23-129:17; 1000774422-4422 (US 35306).

2427. Nancy Brennan-Lund, Senior Vice President of Marketing at Philip Morris, admitted that Cambridge Lights had more tar and nicotine than the original Cambridge. She further admitted that, as the tar and nicotine numbers were not identified on the packs of Cambridge Lights cigarettes, the only way consumers could possibly know that Cambridge Lights had more tar than Cambridge regular was by a perceived taste difference. Brennan-Lund PD, Price, 9/20/02, 145:5-154:16.

2428. Merit. In 1976, Philip Morris introduced a new brand, Merit, at 9 milligrams tar with “enriched flavor.” Merit formed the basis for line extensions to Merit Ultra at 4 milligrams and later Merit Ultima at 1 milligram. The three were jointly advertised in a "low, lower, lowest" presentation of the product line. Dolan WD, 124:1-4; 1002325022-5022 (US 21510).

2429. Philip Morris's marketing for some of its low tar cigarette brands, including Merit, "encouraged consumers [whom Philip Morris referred to as potential "down-switchers"] to switch from regular cigarettes to low tar cigarettes." Historically, "Philip Morris targeted potential down-switchers with its marketing for Merit," and "Merit [consumer] research is used to target potential down-switchers." Bonhomme WD, 13:4-5; 27:16-21; 29:3-30:5.

2430. Philip Morris’s marketing for Merit cigarettes targeted “self-conscious” and

"uncomfortable" smokers. A Philip Morris memorandum, titled "The Uncomfortable Merit Smoker," dated January 6, 1993, stated: "'Self-conscious' smokers are defined as people who are uneasy with their status as smokers. They see smoking as a sign of personal weakness and are starting to feel ashamed that they smoke." 2044905001-5007 at 5001 (US 20454); Bonhomme WD, 49:1-3:47:8-11; see also, Teitelbaum PD, United States v. Philip Morris, 4/16/02, 132:21-137:21.

2431. According to Suzanne LeVan, Philip Morris Vice-President of Premium Brands from 1991-2001 with responsibility for Merit, "the Merit strategy is to convince smokers who are switching down [in tar levels] and who are looking for a good tasting cigarette that Merit is a brand that they should try." LeVan PD, United States v. Philip Morris, 6/25/02, 178:13-181:2; accord 2063690017-0018 (US 85002).

2432. According to a retrospective Philip Morris document dated September 1991 and titled "Background Information on PM Brands," the "Benefits Statement" of Merit was: "You'll enjoy low tar and good flavor with Merit." "At only 7 mg. of tar, Merit delivers the rich flavor of leading cigarettes with twice the tar." "With Merit Menthol you get rich menthol flavor at only 8 mg tar." The document indicated that Merit Ultra Lights and Merit Ultra Lights 100's were introduced in 1981. 2070143190-4433 at 3211:3214 (US 27257); accord 2063724711-4714 (US 39838) (Confidential).

2433. Philip Morris's targeting strategy was recorded in a retrospective June 13, 1995 document from Leo Burnett -- Philip Morris USA's long-time marketing agency -- titled "Merit Advertising Overview Historical and Current for Jodi Sansone." Under the heading "Merit -- Current 'You've Got Merit' Campaign," the document stated: "Strategy: Convince

Self-conscious and uncomfortable smokers who want to switch to a low tar alternative but won't sacrifice taste completely," "With Merit, you can switch down to lower tar and still enjoy smoking," "Because: Merit delivers satisfying taste at every level of low tar." The document described the "Merit Brand Essence" as follows: "Since the brand's introduction twenty years ago, the core Merit proposition has been low tar with good taste. Once a smoker has made the decision to switch to a lower tar product, they are faced with the challenge of finding one that delivers on taste. Merit offers a positive solution–they can switch down to lower tar and still get satisfying taste." 2048200699-0727 at 0708 (US 38648) (emphasis in original); Bonhomme WD, 48:12-49:3.

2434. Philip Morris's strategy for Merit was successful. Norma Suter Drew, Philip Morris Vice President for Portfolio Brands and former Brand Manager and Marketing Director for Merit cigarettes from 1992-1994, delivered a July 1993 presentation, titled "Merit Franchise," in which she reported that "Merit is a brand smokers switch to in order to reduce tar/nicotine." Elsewhere in the presentation, Drew wrote that one of the top two "Goals" for Merit advertising was to achieve a "[s]ignificant increase in Merit's highest brand image statement, 'Are among the lowest in tar/nicotine', versus Carlton and Now." The presentation also noted that "70% of industry switching is between tar levels." Under the heading "Merit Advertising," the presentation noted that "Merit smokers tell us that they come to the franchise because they desire a lower tar cigarette that still tastes good – switching down makes them feel better about the fact that they smoke." Bonhomme WD, 49:4-14; 2070661683-1727 at 1685, 1687, 1713, 1716 (US 40337) (emphasis added).

2435. The following Merit advertisements, in conformity with the internal marketing

documents detailed above, communicated to consumers that, with Merit, they could reduce their tar intake and thus reduce their health risk, without sacrificing taste:

1976: "New Low Tar Entry Packs Taste of Cigarettes Having 60% More Tar." (no bates) (US 5087).

1976: "The greatest challenge to cigarette-makers in the last two decades has been how to make a low tar cigarette that wasn't ‘low'; in taste. It seemed impossible. *Until now*. After twelve long, hard, often frustrating years, Philip Morris has developed the way to do it. The cigarette is called MERIT. It delivers only 9 mg. tar. One of the lowest tar levels in smoking today." (no bates) (US 4981); Biglan WD, 203:17-207:3.

1977: "New MERIT 100's. Only 12 mg. of tar. Yet packed with extra flavor. The kind of flavor that makes ‘low tar, good taste' a reality for 100's smokers." (no bates) (US 5342); Biglan WD, 203:17-207:3.

1978: "Merit Solving Smoker Dilemma." (US 5704); Biglan WD, 203:17-207:3; (no bates) (US 5483).

1978: "’Best Move Yet.’ MERIT[‘s] . . . . ability to satisfy over long periods of time could be the most important evidence to date that MERIT is what it claims to be: The first real alternative for high tar smokers." (no bates) (US 5951); see also (no bates) (US 6112); (no bates) (US 6131); Biglan WD, 203:17-207:3.

1978: "Research concludes MERIT taste makes move from high tar to low tar smoking unexpectedly easy.” (no bates) (US 5803); Biglan WD, 203:17-207:3.

1988: "You Won't Miss What You'll Miss." (no bates) (US 8505).

1988: "Our Less Is Your Gain." (no bates) (US 8556).

1989: "Smoke This Page. If That Reminds You of Your Ultra Lights, Read This Ad." (no bates) (US 8711).

1994: "You can do it! You really can switch down to lower tar and enjoy satisfying taste." (no bates) (US 12892); Biglan WD, 203:17-207:3; 970469347-9474 at 9421; (no bates) (US 85104).

1994: "Yes you can! You can switch down to lower tar and still get satisfying taste. You've got MERIT." (no bates) (US 9241) (emphasis in original); Bonhomme WD, 30:6-18.

2436. A September 16, 1987 Leo Burnett U.S.A. research report for Philip Morris, titled "Merit Brand Image Study," noted in the section "Attitudes Toward Smoking" that "[w]hile health concerns are motivating factor, taste/enjoyment are still key." A summary at the end of the report stated: "Merit smokers we sampled are committed smokers . . . However, they have mixed feelings about smoking -- health concerns/loss of control . . ." and their switching to Merit "provides health reassurance." 2072735414-5500 at 5431, 5492 (US 41598); Bonhomme WD, 27:22-28:17.

2437. A January 1991 document, titled "Merit Positioning Study," assessed "perceptions of Merit's positioning within the low tar category." Under the heading "What Down Switchers want in a cigarette," the document noted that approximately half of downswitchers found "very low tar" (50%) and "very low nicotine" (48%) to be "absolutely essential." 2048976844-6906 at 6850, 6890, 6892 (US 85004).

2438. Consumer feedback confirmed the successful delivery of Philip Morris's intended message. An August 1991 report prepared for Philip Morris, titled "Merit Positioning Strategy Development," observed that, "[i]n addition to advantages associated with lesser tar and nicotine delivery, low tar users note that such brands allow higher volume, deeper inhalation smoking with few tradeoffs." The report also commented that Ultra Light users "note their further

downswitching to ultralights from lights for health benefits primarily." The report noted that Merit users "like perceiving [Merit cigarettes] as rather safe, sensible, middle-of-the-road, non-threatening, and generating the feeling that they aren't doing anything wrong." 2072735123-5247 at 5131, 5132 (US 41596).

2439. An internal Philip Morris memorandum dated May 16, 1995 from Lauren Herman, an employee in the market information and planning group, to Norma Suter Drew, then acting Brand Manager for Merit cigarettes, titled "Merit Alternative Campaign Qualitative Exploratory -- Final Report," discussed the results of research conducted to gauge consumer interest and appeal of Merit marketing campaigns. Under the heading "Key Findings," Herman reported that "Competitive smokers appear to be most likely to respond to the concepts that offer the clearest product cues. These smokers require the most rational reason why they should smoke Merit, (e.g. lower tar)." Under the heading "Implications," Herman recommended that "[s]ince low tar is essentially the core of these alternative concepts, the low tar message should be more pronounced." 2063724960-4962 at 4960, 4962 (US 39842).

2440. A September 4, 1996 Leo Burnett document reported on an August 27, 1996 meeting held in New York between Leo Burnett and Philip Morris (Jose de Castro, Suzanne LeVan, and Jodi Sansone) to discuss Merit marketing for 1997. The document acknowledged that past Merit marketing focused more heavily on communicating that it is low in tar, and less on sending a message about the brand's taste. Under the heading "Discussion/Agreements Reached," the document stated: "Client/agency agreed that we need to move the bar forward in terms of taste communication, as currently it is not as recognizable/prominent as low tar in Merit awareness ratings, yet it is a key driver of consumer choice/purchase." 2071522201-2203 at

2201 (US 27299).

2441. A February 9, 1998 draft research report prepared for Philip Morris by the research firm Kane, Bortree & Associates, titled "Merit Strategic Revitalization Plan, Stage I Learnings," analyzed ways to "build Merit's share of the low tar segment." 2063687348-7527 at 7350, 7353-7356 (US 39820*); see also 2063686921-6942 at 6934 (US 88629) ("Kane Bortree makes use of a variety of innovative, psychologically derived techniques. These techniques allow us to get inside the consumers' heads"). The 1998 report discussed two types of low tar smokers who find the taste of light cigarettes unsatisfying and do not feel comfortable smoking: "Quitters" and "Validation Seekers." The report cited Merit Ultima, Merit Ultra Lights, Camel Lights, and Marlboro Ultra Lights as brands for those who do not feel comfortable smoking. 2063687348-7527 at 7356, 7357, 7359 (US 39820*).

2442. The February 1998 draft research report was followed by a March 31, 1998 draft report by Kane, Bortree & Associates, titled "Merit Strategic Revitalization Plan, Stage II Learnings/Stage III Recommendations." Under the heading "Positioning Learnings to Date," the March report noted that "'Light' is a bigger promise than low-tar with opportunity for broad appeal" because it conveys "Tastes light," "Feels light," "Low tar," and "Better for you." The report recommended that Merit's "positioning should convey acceptability of smoking." The report further discussed a contemplated "Additive Free" Merit line extension, and noted that: "Additive-free is an excellent fit with ‘light'" because it "[r]einforces ‘better for you.'" 2080486996-7108 at 7010-12 (US 45330); Bonhomme WD, 17:2-16.

2443. A May 14, 1998 internal Philip Morris document, titled "Merit Brand Initiatives," incorporated the findings of the March 31, 1998 Kane, Bortree & Associates study, recreating

that study's representation of the four segments of the lights market and stated, under the heading "Merit Strategic Positioning Copy Strategy": "What we would like smokers to believe -- Merit offers a viable alternative to Light brands with full flavor heritage." 2070657640-7650 at 7644, 7646 (US 22015).

2444. Marlboro Ultra Lights. A June 1979 draft report prepared for Philip Morris by Goldstein/Krall Marketing Resources, Inc., titled "Smokers' Reactions to an Ultra Light Brand Extension for Marlboro," discloses that Philip Morris began conducting consumer marketing research on a new cigarette line extension of the Marlboro brand, Marlboro Ultra Lights, as early as 1979. Discussing the reactions of Marlboro Red smokers to the concept of Marlboro Ultra Lights, the report stated:

> The introduction of a Marlboro Ultra Light brand appeared to be viewed in the following manner: . . . An attempt to produce a safer cigarette for those interested in cutting down their smoking and in a lighter cigarette. . . . A “smart” way to prevent the loss of or switching of Marlboro smokers to other brands if they are currently unsatisfied in their quest for a lighter/safer cigarette.

2041097977-7999 at 7984 (US 85006); Bonhomme WD, 31:10-34:17.

2445. Under the heading "How Marlboro Ultra Lights Were Positioned," the report stated:

The following is a description of a brand image developed from the discussions [with consumers] in all three groups: . . . Safer cigarette -- less tar and nicotine. . . . Probably a better/innovative filter." The report further stated: "With regard to smoker image, respondents suggested: . . . People cutting down for health reasons/people trying to quit. More concerned people (about health). More aware people (those reading the numbers in the ads)." 2041097977-7999 at 7987

(US 85006).

2446. On May 1, 1989, Philip Morris began test marketing Marlboro Ultra Lights, which it positioned as delivering 6 mg. of tar (per the FTC Method). In a February 8, 1989 internal Philip Morris memorandum, Richard Camisa delivered to colleagues at Philip Morris the "Marlboro Ultra Lights Marketing Plan Overview." The overview set forth the target audience for Marlboro Ultra Lights, noting that

> [c]onsumer research suggests that there are vast numbers of smokers, including Marlboro smokers, who are seeking lower tar but who are also unwilling to sacrifice flavor and/or smoking satisfaction in return. The opportunity for Marlboro lies in its ability to offer smokers the lower tar they seek with less trade off in taste.

2070624747-4763 at 4748 (US 22014).

2447. The document further stated: "A blue/gray pack with white tipping . . . provides traditional ultra low tar reassurance." Jeanne Bonhomme, Director of Consumer Insights for Philip Morris, confirmed that "low tar reassurance," as used in the document, referred to the fact that:

> Within the context of selecting a pack color for Marlboro Ultra Lights there was discussion about what pack color would make it readily apparent that the brand was an ultra low tar. Many of the lights and low tar products used blue packaging as a signal of being lower tar, so there were discussions about making sure that advertising and packaging easily communicated that Marlboro Ultra Lights was an ultra low tar.

2070624747-4763 at 4748 (US 22014); Bonhomme WD, 64:1-6.

2448. Philip Morris conducted research to determine how cigarette pack and tipping color influenced consumer perceptions of Marlboro Ultra Lights' strength and tar level. In a June

25, 1990 memorandum from Jeanne Bonhomme, then a contract consumer marketing researcher for Philip Morris, to Richard Camisa, titled "Marlboro Ultra Lights Portfolio Test," Bonhomme reported the results of a cigarette ad pack test conducted on consumers for Marlboro Ultra Lights. Bonhomme reported that for consumers tested, "[p]redictably, expectations about [Marlboro Ultra Lights'] strength and tar level were influenced by the pack and tipping color. Red/Cork was viewed as being strongest tasting and higher in tar than the two white tipped options, particularly Blue/White." 2070197338-7340 at 7338 (US 40255); Bonhomme WD, 21:4-22:4; see also 2071535027-5090 at 5033, 5043 (US 22020).

2449. Marlboro Ultra Lights was launched nationally on January 28, 1998, and Philip Morris continues to market and sell Marlboro Ultra Lights to this day. Philip Morris targeted all Marlboro smokers with Marlboro Ultra Lights, not just current low tar smokers. Norris PD, United States v. Philip Morris, 7/31/03, 132:17-23, 162:6-165:8, 121:13-125:11; Bonhomme WD, 34:15-17.

2450. Marlboro Medium. In June 1991, Philip Morris launched Marlboro Medium, a lower tar line extension of the Marlboro brand. A September 1991 Philip Morris document, titled "Background Information on PM Brands," stated that Marlboro Medium was aimed at "consumers still looking for a satisfying low tar cigarette with flavor." 2070143190-4433 at 3206 (US 27257).

2451. Philip Morris's November 1994 continuous smoker tracking survey (a random smoker phone survey Philip Morris has conducted continuously since the 1980s) discusses Philip Morris's targeting of health-conscious smokers. The document stated that male smokers of Marlboro Medium age 18-24 "need affirmation as smokers" and may be candidates for ultra

lights. In this survey, Philip Morris created a profile of 18-24 year old male Marlboro Flavor Low (Marlboro Medium) smokers as individuals who are less comfortable with smoking, feel pressure to quit, and do not enjoy some of the "image benefits" to the same degree as other smokers. The Marlboro Flavor Low (Marlboro Medium) male smokers age 18-24 are more likely to cite the low tar level as influential in determining their regular brand. 2048735500-5604 at 5562, 5543, 5548-5549 (US 21971).

2452. An internal February 10, 1995 Philip Morris memorandum from Marian Wood to Tom Keim, titled "Marlboro Medium Brand Imagery," revealed that in 1991, Philip Morris spent $50 million on advertising for Marlboro Medium, 36% of Marlboro's total advertising budget for that year. 2063731689-1710 at 1695 (US 79820).

2453. Philip Morris continues to sell Marlboro Medium. Bonhomme WD, 20:1-2.

2454. Parliament. Philip Morris marketed the Parliament brand as a low tar brand featuring a "recessed" filter. A Philip Morris document, titled "Background Information on PM Brands," dated September 1991, stated:

> It was during the proliferation of filtered cigarettes in the 1950's that Philip Morris gave Parliament its hallmark of today -- the recessed filter. Unlike ordinary filter tip cigarettes, Parliament's famous recessed filter kept tar from touching the smoker's lips. Since the addition of this unique filter, Parliament smokers have enjoyed their brand's approach to smoking: clean, sophisticated, and distinctive. In 1979, Parliament's name was changed to Parliament Lights. This change reflected the brand's low tar status and helped capitalize on a growing low tar trend.

A "Benefit Statement" in the document was: "Parliament Lights -- since tar on the filter tip never touches your lips, the taste is refreshingly light." 2070143190-4433 at 3217-3218, 3222 (US 27257).

2455. A 1975 Parliament advertisement in Sports Illustrated magazine stated that, although cigarette holders gave "cleaner taste," there was "[n]o need for a cigarette holder today. Parliament's filter is recessed, so you taste only rich, clean tobacco flavor. It's the neatest trick in smoking." (US 4709); see also (no bates) (US 4885).

2456. A 1977 Parliament advertisement in Cosmopolitan magazine stated:

> As you smoke, tar builds up on the tip of your cigarette filter. That's "filter feedback." Ordinary flush-tipped cigarettes put that tar build-up against your lips. And that's where Parliament has the advantage. Parliament's filter is recessed to keep tar buildup from touching your lips.

ADV029 0247-0249 (US 10614).

2457. As noted in the 1981 FTC Report on cigarette advertising, Philip Morris's Parliament advertisements from the time period preceding the Report (i.e., late 1970s-1981) implied that its "special filters minimize the risks of smoking." FTC, 1981 Report at 2-12 (JD 004744).

2458. Jeanne Bonhomme observed that although the recessed nature of the filter did not further reduce the tar delivery or make the cigarette any less harmful, she could "recall learning that some consumers believed that a recessed filter produced a cigarette that was better for you because it reduced tar and less tar was perceived to be less of a health risk." A November 23, 1988 Philip Morris USA memorandum co-written by Bonhomme and Karen Eisen, with the subject heading "Parliament Super Lights In-Depths," confirmed that "[f]or many, the recessed filter implied a health benefit -- 'keeps tar away.'" Bonhomme WD, 34:18-35:1; 35:20-36:15; 2071388176-8178 at 8178 (US 40452).

**(2) Philip Morris's Research on the Low Tar Cigarette**

**Category**

2459. Internal Philip Morris documents show that Philip Morris conducted consumer marketing research not just on individual low tar cigarette brands, but on low tar cigarettes as a category. These documents establish that Philip Morris has long known and intended that its advertisements and marketing for low tar cigarettes, featuring claims of lowered tar and nicotine and "light" and "ultra light" brand descriptors, contributed to and reinforced consumers' mistaken belief that low tar cigarettes are better for their health, and encouraged consumers to smoke them for this reason.

2460. According to Nancy Lund, Senior Vice President of Marketing at Philip Morris, Philip Morris was aware in the 1970s and 1980s that some consumers believed that light/low tar cigarettes were safer than full-flavored cigarettes. She also noted that, during this time period, Philip Morris marketed such cigarettes to these consumers and profited from those sales. Brennan-Lund PD, Price, 9/20/02, 158:6-161:15.

2461. James Morgan, the former CEO of Philip Morris, acknowledged that the trend in the 1970s toward low tar cigarettes was due in large part to consumer perception that they were less hazardous to health than higher tar cigarettes, and specifically admitted that "the consumer was perceiving in the 1970s lower tar as tied to less hazardous." Although Morgan conceded that "we were aware of that," he admitted that, despite being armed with this knowledge, Philip Morris took no additional steps to counter that mistaken perception. Morgan PD, Price, 6/5/02, 42:16-42:25; 43:2-43:25; 44:2-44:25; 45:2 - 45:25; 63:10-63:25; 64:2-64:25; 65:2-65:21; 1004888470-8484 (US 85009); 502641641-1646 (US 85008).

2462. A May 1976 study prepared for Philip Morris by The Roper Organization, titled

"A Study of Smokers' Habits and Attitudes With Special Emphasis on Low Tar Cigarettes," stated:

> [T]his study shows that the smoking public is convinced that to the extent any brands are better for health, it is the low tar brands that are. . . . Low tar brand smokers cite as the most liked characteristic of their brand . . . as compared with smokers of flavor filters, they say it is “better for your health” and cite its “more effective filter. . . .” Brands Thought Better For Health -- The low tar brands have cornered opinion that to the extent any brands are better for your health, they are. . . . Three in ten of all smokers said some brands were better for health than others, and almost half of the low tar brand smokers said this. . . . Furthermore, it is the lower tar content of these brands that make people say they are better for your health.

2024921314-1612 at 1333, 1348, 1352-1353 (US 20403).

2463. A January 1979 study prepared for Philip Morris stated:

> These ultra low tar smokers indicated that they are aware of the low tar levels in their brands and that they switched to them specifically because of advertising calling this fact to their attention. . . . As lower and lower tar brands become available, it would appear smokers are subject to advertising pressure and brand availability, and the opportunity for switching obviously occurs. . . . Characteristics of ultra low tar smokers were: people who want to quit . . . more interested in health. . . . When asked how they happened to switch to the brand they are now smoking many of the Carlton smokers cited advertising and tar and nicotine ratings. . . . When Carlton ads were shown in the groups, it was obvious that most respondents had seen them and were aware of the copy claims. It was these claims and other Carlton ads to which smokers referred prior to exposure and when discussing the fact that advertising had been one of the factors causing them to try the brand. This would seem to indicate that ultra low tar smokers are paying attention to and being attracted by the advertising. Respondents . . . appeared to react favorably to the Triumph ads. They said that 3 mg. tar was within the ultra low tar range implying that it represented a safer cigarette.

2040066740-6766 at 6747, 6748, 6751-52, 6754, 6756, 6757 (US 20435).

2464. A March 1979 report prepared for Philip Morris, titled "A Study of Smokers' Habits and Attitudes With Special Emphasis on Low Tar and Menthol Cigarettes," stated:

> The appeal of low tars is simple and single -- better for you, less harmful, easier on the lungs, throat, etc. The weakness or objection to low tars is also simple -- tasteless, lacking in satisfaction, and the related factor of hard to draw on. At the same time there is clear evidence that if the appeal -- safety -- is strong enough, people can over time grow used to, and in some cases come to actually like, the main objection to low tars -- low taste.

2049455309-5318 at 5315 (US 22218).

2465. A June 1979 draft report prepared for Philip Morris by Goldstein/Krall Marketing Resources, Inc., titled "Smokers' Reactions to an Ultra Light Brand Extension for Marlboro," stated, under the heading "Awareness of Tar and Nicotine Levels":

> One of the points on which respondents were probed when first shown the array of packs used as stimuli was their awareness of tar and nicotine levels for the brands. While most smokers in the groups could not give correct tar figures for each brand, they seemed to know a general range in which brands fell. . . . Respondents attributed their knowledge . . . to advertising. Evidently, the heavy weight of advertising concentrated against tar claims has penetrated these various groups of smokers to some extent.

2041097977-7999 at 7990 (US 85006).

2466. A July 27, 1987 Philip Morris Asia letter from Joe Tcheng to Cecil Yow stated:

> The mild/lights segment is the fastest growing segment in the Hong Kong market. . . . There is definitely a growing health consciousness in the market due to regular Government anti-smoking campaign. . . . Research shows that Lights = Mild = Less Harmful. Government's anti-smoking measures will intensify and . . . [t]his may further increase health concern and it is very likely that the mild/lights segment will continue its rapid growth.

2504046594-6601 at 6594 (US 85012).

2467. A 1990 Philip Morris transcript of a conversation between Richard Carchman, then Principal Scientist, and John Tindall acknowledged that Philip Morris had used filters and claims of low tar as health reassurance mechanisms and that cigarette sales were tied to health concerns. Tindall stated:

> [T]he things that happened in the market in the past I put under basically three groups. One has to do with people's health concerns which we addressed first through filters and then through low tar and ultra low tar. . . . The main thing that has happened in the market over which we have some control is that we have addressed peoples' health concerns through the number of steps I have mentioned. . . . the[re] are opportunities in the market now in the area of smoking and health. People's perceptions of cigarettes with regard to their effects on them. . . . [I]f we are going to do something significant enough to possibly even reverse the declining sales in the market, we're going to have to make advances in the area of people's health.

2023148544-8550 at 8545 (US 85098).

2468. A 1990 Philip Morris document relating to "New Brand Development" in Pakistan revealed Philip Morris's knowledge that cigarette packaging can communicate "mildness" to consumers anxious about the "health/safety issue":

> There was little doubt that the pack design with its reliance upon the central gold panel against a white background effectively projected the impression of a very mild cigarette. . . . The evidence as a whole seemed to indicate, in fact, that anxiety about the health safety issue had not yet reached the level where avowedly very mild cigarettes . . . could expect an extensive franchise. . . . Over time, anxiety levels would rise, as they have done in other markets and when this happened mild/light brands . . . would begin to achieve respectable sales.

2504008471-8519 at 8478, 8518 (US 85013).

2469. Philip Morris USA's 1992-1996 Strategic Plan for Research and Development

stated, under the heading "Perceived Health Concerns," that: "An analysis of the cigarette market over the last 50 years suggests that there have been only two major influences on smokers buying patterns; namely smokers seeking to address their perceived health concerns and smokers seeking price relief." The document further stated:

> The development of products which address perceived health concerns . . . is very much an R&D issue. Previous product changes driven by "perceived health concerns" were the growth of filtered products from 3 to 70% of the market between 1945 and 1953, and the growth of the low tar segment to nearly 50% of the market by 1985. . . . Filtered cigarettes now make up over 96% of the market.

2021529528-9638 at 9608 (US 85084).

**(3) Philip Morris's Public Statements About Low Tar Cigarettes**

2470. Jeanne Bonhomme, Director of Consumer Insights for Philip Morris, stated that to her knowledge:

- "Philip Morris has always denied publicly that it markets low tar cigarettes as safe or safer than full-flavor brands;" and

- "Philip Morris has always denied publicly that it uses brand descriptors such as 'light' and 'ultra light' to communicate they are safe or safer than full-flavor brands."

Bonhomme WD, 11:18-20; 12:12-15.

2471. A November 14, 1994 fax from Censydiam USA to Philip Morris advised that with respect to the "Health & Fitness" trend: "Outside pressures have made consumers more concerned about health and fitness. They are interested in finding 'user friendly' ways of making their lives healthier without making dramatic changes in their current lifestyles." As examples of

the consumer health trend, the document noted increased consumer interest in package labeling that included references to "low/no fat/salt" and "all natural," as well as an increase in the sale of products considered "good for you" such as fruits and vegetables. A 1994 Strategic Trend Analysis prepared for Philip Morris by Censydiam USA illustrating the "Health & Fitness" trend recognized how Defendants had capitalized on this trend, noting that: "Implications for Tobacco Companies: While the trend toward health and fitness is still alive, it has tapered off from its rage in the 1980's. The 1990's focus on moderation. The importance of low/ultra low products should continue in the near future." 2063704131-4132 (US 39829); 2063704088-4091 at 4090-4091 (US 39827); 2063704135-4136 (US 27135).

2472. Faxes dated November 17, 1994 and December 7, 1994 from Thomas R. Keen of the consumer research company Censydiam USA to Marian Halpern, an employee in the Philip Morris consumer marketing research department, described an agreement with Philip Morris whereby Censydiam would produce "write-ups" to Philip Morris on consumer "trends," including, among others, "Health & Fitness," "Delusions of Youth & Beauty," "Dieting Dilemma," and "Quality of Life."

2473. In May 1996, representatives from Philip Morris, including Philip Morris General Counsel, Denise Keane, RJR, B&W, and Lorillard met with the FTC to discuss in part "how Philip Morris and other tobacco companies use FTC test results in their advertising," and "whether the FTC test method could be modified to more accurately reflect actual smoker intake." At that meeting, "the FTC referred to published research showing that smokers believe brand descriptors like ‘low tar' and ‘light' convey relative safety messages." The FTC requested that the industry representatives provide the FTC with "any information the companies had

concerning the issue of consumer perception of low tar, so-called "light" cigarettes." Despite the decades of consumer and marketing research conducted or commissioned by Philip Morris concerning consumers' interpretation of these terms (see Section V(E)(3)(a), supra), Keane testified that “Philip Morris did not provide any such information" to the FTC. Keane WD, 46:18- 48:23; Keane TT, 1/18/05, 10369:20-10370:25; 2048216131-6135 at 6134 (US 38655).

2474. A September 10, 1999 Davis Polk & Wardwell memorandum to Mark Berlind of Philip Morris includes "a series of questions that might arise, as well as possible answers, relating to low delivery cigarettes and brand descriptors." In answer to the question "If the brand descriptors do not indicate what smokers actually inhale or serve as a point of comparison among competing brands, what purpose do they serve?," the memorandum proposed responding that Philip Morris's brand descriptors do communicate that Philip Morris's lower tar brands deliver less tar and nicotine than full-flavor brands: "For example, the 'Lights' in Marlboro Lights indicates that the smoke yields for Marlboro Lights is lower than that for Marlboro, and Marlboro Ultra Lights delivers less smoke 'tar' and nicotine than Marlboro Lights." 2072675414-5417 at 5415 (US 27347).

2475. This document's proposed response to the question whether "Philip Morris ever intend[ed] to or propose[d] to take advantage of" the "perception" of consumers that "lower-yielding brands [are] 'safe' or 'safer' than full-flavor brands" was that "Philip Morris has never intended [to] or proposed to take advantage of this perception. (although over time various individuals in the Company may have suggested that the Company do so)[.]" 2072675414-5417 at 5415-5416 (US 27347) (bracketed material in original).

2476. Following publication of the NCI's Monograph 13 in November 2001, ABC

News.com requested information from Philip Morris regarding low tar cigarettes and, as stated in a November 26, 2001 email from Philip Morris employee Christina Malito, "whether or not there are real health benefits to them." In an internal e-mail reply sent that same day, Ellen Merlo, then Senior Vice President of Corporate Affairs at Philip Morris and a decades-long Philip Morris employee, wrote that Philip Morris's response to the inquiry should be: "[W]e make no claims. Started producing them in response to consumer demand for lighter tasting cigarettes." 2085802175-2176A at 2175B (US 85123*).

2477. Merlo later stated:

> [A]s far as Philip Morris's position publicly, we would advise people not to in any way infer that light or lighter cigarettes are any safer than full flavor cigarettes . . . my communication, both through our website and in any public statements that I make, would be that the general public should not in any way infer that light or lighter means that that cigarette is safer than a full-flavor cigarette.

Merlo PD, Price, 10/2/02, 96:24-101:24.

2478. According to Nancy Brennan-Lund, then Senior Vice President of Marketing at Philip Morris USA, Philip Morris's use of the word "lights" in its marketing of low tar cigarettes is intended to mean a lighter tasting cigarette. Brennan-Lund PD, Price, 9/20/02, 19:21-24.

2479. As recently as 2003 and 2004, the Board of Directors of Altria (formerly known as Philip Morris Companies), publicly made misleading statements to its shareholders and to the U.S. Securities and Exchange Commission ("SEC") in documents filed with the SEC. In a March 17, 2003 Proxy Statement, a group of Altria shareholders proposed to the Altria Board of Directors that "the Board find appropriate ways of informing our customers about the actual health risks of smoking ‘light and ultra light' cigarettes to disassociate them from any belief that

such products are safer and deliver less tar and nicotine." The shareholder proposal cited Monograph 13 which found that "most smokers believe ‘Lights' and ‘Ultra Lights' are less harsh and deliver less tar and nicotine," and that, "on average, smokers believe that Lights afford a 25% reduction in risk, and Ultra Lights a 33% reduction in risk;" the Canadian Government's conclusion that the terms low tar, light and ultra light are deceptive to the consumer; and the World Health Organization’s recommendation that the terms light and ultra light be banned as misleading. The Board of Directors of Altria recommended that shareholders vote against this proposal, stating: "for those adults who choose to smoke, PM USA and PMI believe descriptors such as ‘low-tar,' ‘mild,' and ‘light' serve as useful points of comparison for cigarette brands regarding characteristics such as strength of taste and reported tar yield." (no bates) (US 87741).

2480. In May 2004, Philip Morris placed the following statement on its website: "Philip Morris USA does not imply in its marketing, and smokers should not assume, that lower-yielding brands are safe or safer than full-flavor brands. There is no safe cigarette." TLT0770066-0088 at 0077 (US 72408); accord TT, 2/24/05, 14340:19-20 (counsel for Defendants referring to Philip Morris website and stating "we don't tell people that these cigarettes are safer"); see also PM3000185282-5319 at 5289, 5291-92 (US 88095).

2481. Philip Morris further states on its website:

> Because smokers have varying preferences, Philip Morris USA offers products with differing yields of tar and nicotine, as measured by machine methods. We believe that it is appropriate to continue to differentiate our brands on this basis and that descriptors such as "lights," "ultra-lights," "medium" and "mild" help communicate these differences to adult smokers.

TLT0770066-0088 at 0077 (US 72408); see also PM3000185282-5319 at 5289 (June 2003

Philip Morris website stating same and further stating "we believe that [low tar brand] descriptors serve as useful points of comparison for cigarette brands regarding characteristics such as strength of taste and reported tar yields . . .") (US 88095).

2482. Similarly, on August 22, 2002, although Geoffrey Bible, former CEO of Philip Morris Companies, claimed he had never been presented with any data as to how consumers actually perceive brand descriptors, he testified that he believes that they "simply convey taste preferences." Bible PD, United States v. Philip Morris, 8/22/02, 165:3-166:7.

**b. R.J. Reynolds**

**(1) R.J. Reynolds's Low Tar Marketing Techniques**

2483. Camel Lights advertisements in the 1980s offered the "solution" of low tar cigarettes that offered "[s]atisfaction" by providing acceptable "taste," which was lacking in low tar cigarettes:

> 1980: "Discover Camel Lights. Satisfaction. Low tar."
>
> 1980: "Discover satisfaction. Camel Lights. The Camel World of satisfaction comes to low tar smoking. . . . Camel Lights brings the solution to taste in low tar."
>
> 1981: "Camel Lights. Low tar. Camel taste."
>
> 1981: "Camel Lights. . . . Same low tar, same Camel taste."

519315781-5797 at 5788-5789, 5792-5793, 5795, 5796 (US 79583).

2484. RJR's 1994 marketing research on Camel Special Lights advertising ("Concept #17: The Special Lights Filter. Takes out impurities other filters can't touch") included the following statements from smokers that the advertisement conveyed to them:

> "It sounds like it's taking the poison out of the cigarette."

> "Takes out the impurities -- makes it sound like a healthier cigarette."
>
> "The special filter would clean the cigarette and make it a healthier cigarette to smoke."
>
> "It makes me feel I can enjoy smoking without harming myself because the filter takes out impurities. It sounds safer to smoke." "[I]t's safer for you."
>
> "Sounds like it would save your lungs."

509619620-9625 at 9620, 9622, 9624, 9625 (US 85015).

2485. RJR marketed Doral as a low tar cigarette brand in the 1970s. A January 1972 Doral advertisement in Newsweek magazine stated: "Doral, the low 'tar' and nicotine cigarette . . . [t]he filter system you'd need a scientist to explain. . . . But Doral says it in two words: 'taste me.'" (US 87452); Schindler WD, 68:12-13.

2486. A June 1975 RJR Doral advertisement in Sports Illustrated magazine analogized smoking low tar cigarettes to a "Doral Diet." The advertisement, depicting a man lighting a cigarette, stated:

> How I lost 700 mg. of "tar" the first week . . . without losing out on taste. I'm not too big in the willpower department. But I lost 700 milligrams of "tar" the first week on what I call "The Doral Diet." Now I can still enjoy smoking, and cut down on 'tar' and nicotine, too. . . . For a pack a day smoker like me, my Doral Diet really ads up.

(US 4746); Schindler WD, 68:14-69:9; 03496228-6630 at 6329 (US 20057).

2487. A June 24, 1975 advertising research report for the Doral "Diet Filter" advertising campaign prepared by Reynolds's Marketing Research Department and "conducted to aid in evaluating six 'Doral Filter' executions in recall impact and communication," recorded smokers'

impressions and perceptions of Doral advertisements. 501457575-7706 at 7576 (US 22150).

Consumers had the following perceptions of the campaign:

> The ad said something about a diet of tar and nicotine. My impression was that they had less tar and nicotine than other brands. The main idea was that they're better for you because of the cut-down in tar and nicotine. (Id. at 7581).
>
> My impression was that they claim it's safer to smoke Doral than other cigarettes. (Id. at 7585).
>
> The main idea was that it's safer to smoke. (Id. at 7586).
>
> I got the impression that they want you to switch to Dorals and save your health. (Id. at 7587).
>
> They brought out the idea that it might be a good cigarette to try if you're worried about the amount of "tar" and nicotine your lungs are absorbing. The main idea was to save your health, but if you still want to smoke, smoke Doral. (Id. at 7588).
>
> It showed a man sitting in a chair and lighting up a Doral. It said that it had less "tar," but the taste didn't change. The impression it brought out was just the fact that it's a safer cigarette for your health, if you have to smoke. They were trying to get across that it has less "tar," and is still as good in taste as the other cigarettes. (Id. at 7591).
>
> The main idea was that it's less dangerous to your health than any other cigarette. (Id. at 7593).
>
> A man was smoking a cigarette. The ad said that Doral is lower in tar and nicotine than any other cigarette. The impression that came across was that they would be less harmful if you smoked them. There's a lower tar and nicotine count. The main idea of the ad was that smoking Doral is better for your health. (Id. at 7608).
>
> Their main idea was that they would still taste good, but they're low in tar and nicotine and would consequently be better for you. (Id. at 7611).
>
> The main idea was you have less chance of danger to your health

> with Doral than another brand. (Id. at 7613).
>
> My impression was it's much less of a health risk. (Id. at 7613).

Schindler WD, 69:14-71:21.

2488. Two months after this Doral Diet research report, RJR placed another Doral Diet advertisement in the August 4, 1975 edition of Sports Illustrated magazine that doubled the claimed loss of tar -- to 1400 mg. -- compared to the June 1975 advertisement, (US 4746). The August 1975 advertisement featured the headline: "How I lost 1400 mg. of 'tar' the first week . . . without losing out on taste." (no bates) (US 4789); Schindler WD, 72:5-17.

2489. A 1975 study regarding the effectiveness of another Doral advertising campaign found that: "Attitude diagnostics indicated that smokers had no problem understanding the ‘Wise Up' campaign. Respondents felt that ‘Wise Up's' main point was a low tar and nicotine claim (84%) with some taste mentions (24%)." By way of example, some of the respondents noted:

> The main idea they were trying to get across was it's less dangerous to the health and better tasting.
>
> I guess the idea is that Doral is safer to smoke, as it has less tar and nicotine than others.
>
> My impression was that Doral is less harmful.
>
> The main idea they were trying to get across was to smarten up because the cigarettes have less tar.
>
> The main point of the ad was you can have good taste and be a little less harmful, too.

501719738-9761 at 9738, 9748-49, 9752, 9755 (US 22075); Schindler WD, 72:18-73:19.

2490. A July 27, 1976 letter to RJR employee Ed Blackmer discussed Doral's market positioning. The letter noted that the

> smoker we are going after must be concerned about the health controversy. It is understood that we cannot necessarily target our media against “concerned” smokers, but that this must be accomplished via creative. Nevertheless, we believe it is an important factor in further “segmenting” our target audience.

50224143-4151 at 4147-4148 (US 22103).

2491. In discussing a Doral 4 advertising research proposal in June 1977, the copy strategy was described as: "Convince the Prime Prospect that new Doral 4 is the solution to his concern about the smoking controversy because it offers the optimum combination of ultra-low tar and taste satisfaction." As a result, the advertising was to be addressed to smokers "seriously concerned about the alleged hazards of smoking," and who, "because of [their] concern, seek[] one of the lowest tar levels available (or an ultra-low level)." 501533008-3011 (US 22107); Orlowsky WD, 69:1-23.

2492. Martin Orlowsky, former Executive Vice President of Marketing and Sales for RJR, admitted that RJR's advertisements for Vantage were targeted toward smokers who, due to their concerns about health risks, were seeking a low-tar cigarette. Orlowsky TT, 10/13/04, 2288:24-2289:19.

2493. Vantage advertisements from the 1970s used purported testimonials characterizing Vantage as delivering low tar to smokers and thereby reducing the health risk from smoking:

> 1972: "Why I smoke Vantage. I read the papers. I watch TV. I hear the things some of them are saying about smoking. . . . And then, frankly, all that the critics say about ‘tar' and nicotine has to make an impression. Fact is, they don't make me feel guilty about smoking Vantage." (no bates) (US 3683); Biglan WD, 377:12-379:22.

1977: "Smoking. Here's what I'm doing about it . . . like a lot of people I'm . . . aware of what's being said [about the harm of cigarette smoking]. And like a lot of people I began searching for a cigarette that could give me the taste I like with less tar. . . . Vantage. It's everything the ads say it is. . . . What am I doing about smoking? I'm smoking Vantage." (no bates) (US 5578); see also (no bates) (US 324) (1978 Vantage advertisement in Rolling Stone magazine noting same).

1977: "Vantage is solving a lot of my problems about smoking. (no bates) (US 239).

1977: "Vantage is changing a lot of my feelings about smoking. . . . I'm not living in some ivory tower. I hear the things being said against high-tar smoking as well as the next guy. And so I started looking for a low-tar smoke that had some honest-to-goodness cigarette taste. . . . As far as I'm concerned, when I switched to Vantage, I changed to a cigarette I could enjoy." (no bates) (US 87456).

1977: "My wife got me to switch to Vantage. . . . My wife . . . would remind me of the stories being told about high-tar cigarettes. Well, I began looking into those new low-tar cigarettes. . . . [Vantage] tasted really good and they actually had less than half the tar of my old brand. . . . So now, I smoke Vantage. I get the taste I want and the low tar . . . ." (no bates) (US 87457).

1978: "'Why I choose to smoke. . . . I'm not deaf to what's being said about tar. So I searched out a cigarette that would give me taste with low tar. . . . Vantage has all the taste I enjoy yet, surprisingly, much less tar than my old brand." ADV017 1589-1591 (US 5756).

1978: "'Vantage gives us more taste and less to argue about. My husband and I . . . [are] both aware of the things being said against high tar. So there we were facing each other every day, smoking our high-tar cigarettes and daring each other to switch to something lower. . . . Today, we both smoke Vantage. You could say we're getting less tar and we're getting along -- with Vantage." ADV108 0001-0003 (US 87504).

1978: "These days, why do I smoke? . . . . With all the talk about smoking and high tar, it didn't take much imagination for me to conclude that the cigarette of the future would taste good and probably be low in tar as well. . . . Then I discovered Vantage. It was my kind of cigarette. It gave me taste. Pleasure. And the low tar I was looking for." (no bates) (US 295).

1979: "New Vantage Ultra Lights. Ultra taste. Never-before, silky smooth, truly satisfying taste -- in an ultra low tar cigarette! (And we do mean ultra low. At only 6 mg of tar, it's lower than 90% of all the cigarettes that people buy.) How is it possible? Through a unique blend of very select, very flavorful tobaccos. That's the Ultra Cigarette -- new Vantage Ultra Lights from Vantage." (no bates) (US 6255); (no bates) (US 6286); Biglan WD, 377:12-379:22.

1988: "Vantage Ultra Lights. How can anything so ultra light taste so ultra good? Find out for yourself. Try a pack today." (no bates) (US 1613); Biglan WD, 377:12-379:22.

See also Orlowsky WD, 73:1-76:22 (discussing US 5578; 324; 239; 87456; 87457; and 295); 76:23-77:11 (discussing US 6255 ); 77:12-78:21 (discussing US 5756 and 87504); Orlowsky TT, 10/13/04 2284:14-2285:20 (discussing US 87504).

2494. The following advertisements for Vantage from the 1970s are clearly encouraging health conscious smokers to switch to Vantage:

1974: "Maybe the people who criticize smoking should stare the facts in the face. Then they might recommend that if you've decided to smoke, but are concerned about ‘tar' and nicotine, you might smoke Vantage. Vantage offers smokers the rich, tobacco flavor they've come to appreciate. With a substantial cut in ‘tar' and nicotine. So if you're one of those smokers who is now deciding between high ‘tar' and nicotine cigarettes that taste good, and low ‘tar' and nicotine cigarettes that taste like nothing, you might appreciate Vantage. . . . Vantage is both high in flavor and low in ‘tar' and nicotine." 03496228-6630 at 6313 (US 20057).

> 1976: "Are you still smoking? In the years since the criticism against smoking first appeared, many people have given up cigarettes. But many more people haven't. . . . [W]e'd like to talk to. . . . [t]hat even larger group of people who are still smoking today. If you're a smoker, you've probably heard the charges leveled against ‘tar' and nicotine. You may have become concerned. And chances are you even tried to do something about it. Like trying . . . low ‘tar' and nicotine cigarettes. . . . Vantage cuts down substantially on the ‘tar' and nicotine you may have become concerned about. . . . So, if you still smoke, but would like to cut down on ‘tar' and nicotine, Vantage is one cigarette you should seriously consider."

500713420-3420 (US 48350).

2495. An internal February 11, 1975 B&W memorandum by "J.V.B." commenting on RJR's Vantage advertisements stated that RJR's advertisement ("Why do you smoke? With what you've been hearing about smoking these days, you probably wonder sometimes why you smoke at all") was "address[ing] the health issue for competitive purposes." 690007757-7760 at 7759 (US 21039).

2496. An April 19, 1978 memorandum states that "Vantage has traditionally limited its target market to ‘concerned' full flavor smokers." 500210073-0075 (US 22108).

2497. In a 1981 memorandum to M.M. Sheridan, titled "Reactions to the VANTAGE/Merit Image Study," K.A. Schmitt reported that, based upon the study, "smokers in our target category have two primary product desires: a lower tar product which addresses their safety/health concerns, and a product which provides taste satisfaction." The memorandum further reported that "VANTAGE is seen as not dealing as directly or effectively with the health/safety concerns of the consumer as Merit. Our current advertising approach focuses much more heavily upon the taste/pleasure aspects of our brand than on the safety/health aspects." As

a result, the memorandum recommended that Vantage marketing be modified to better "target" smokers with health concerns: "Perhaps a more balanced approach is needed, both to tone down the perceptions of harshness and to renew the belief that VANTAGE does indeed address the target consumer's health/safety concerns." 523474848-4851 at 4848 (US 22156); Orlowsky WD, 71:15-72:16.

2498. An August 1981 consumer research study, titled "Vantage Personalities," prepared for RJR by Social Research, Inc., noted that people in the Vantage target market "have very definite concerns about the alleged health hazards connected with smoking. It is these qualms that have prompted many of them to seek out lower tar brands." That report likewise noted that the target market

> abandoned [] harsher brands in search of milder brands with lowered tar and nicotine. This movement was almost always prompted by health concerns. In some cases, people were experiencing actual problems such as coughing, throat irritation, and shortness of breath. Others may not have experienced actual symptoms, but were worried about the publicized alleged health hazards associated with stronger cigarettes.

503148009-8077 at 8006, 8070 (US 22159).

2499. An April 1982 research study, titled "Vantage and Merit Smokers," prepared for RJR by Social Research, Inc., stated:

> <u>Both Vantage and Merit smokers have similar early smoking histories</u> . . . switching to lighter cigarettes to relieve physical symptoms and as an acknowledgment of increased concerns about alleged health hazards. . . . [Quoting a Vantage smoker]: "They are lighter, lower in tar and nicotine. . . . They are satisfying like a full-tar cigarette, but they are better for my health. . . . The filter seems strong and effective as a trap for 'harmful' ingredients." Vantage smokers believe that the filter itself is strong enough to catch these impurities. . . . These ideas make them think the end product is a milder and more "healthful" smoke. . . . [Quoting a

> Vantage smoker]: “I like the filter because there's a lot of it, like it's filtering out a lot of the harmful things, like the tar.”

511469097-9250 at 9105, 9116 (US 20842) (emphasis in original); Orlowsky WD, 72:17-23; 81:4-8.

2500. A 1979 study prepared for RJR, titled "An Exploratory Study of Smokers' Comprehension of and Reaction to Several Proposed Winston Lights Campaigns," noted that with respect to one of the Winston Lights advertisements, consumers typically reported that they understood the advertisement to mean: "A low tar cigarette that tastes good, is satisfying and safer." 501071439-1530 at 1453 (US 22110); Orlowsky WD, 83:7-12.

2501. Advertisements for RJR's Now cigarette in the late 1970s and 1980s described Now as "the lowest," "lowest in tar," and "lowest tar champion," and included the following:

> Now. It's a Satisfying Decision.
>
> LOWEST TAR CHAMPION. NOW MENTHOL IS LOWEST By U.S. Gov't. testing method.
>
> NOW is LOWEST Of All Softpack 100's.
> Pick the Lowest. NOW IS LOWEST By U.S. Gov't Testing Method.
>
> WHEN IT COMES TO THE LOWEST IN TAR, ONLY ONE MEASURES UP. NOW IS LOWEST Of All Soft Pack 100s. By U.S. Gov't. testing method.

(no bates) (US 5852) (1978); 970469347-9474 at 9430, 9429, 9427, 9431 (US 85104).

2502. A 1983 Now Brand Image report, prepared for RJR, concluded that health concerns heavily influenced a smoker’s decision to choose one brand over another and that smokers perceived lower tar cigarettes as healthier than their full-flavor counterparts. It stated that "[a] major motivation in brand switching has been concern over health. . . . The typical

solution to this dilemma is the two pronged approach of trying to cut down and/or moving to a lower tar brand." The report went on to indicate that, when respondents were asked what the words "low" and "lowest" in the advertisements meant to them, "[t]hey interpret this to mean that the two brands are ‘safer' and pose less of a health hazard. Consequently, they reason, this would make the brands more appealing to younger people who are very health conscious or to older, long-time smokers who are concerned about the long-range effects of tobacco." 506671319-1418 at 1379 (US 22160).

**(2) R.J. Reynolds’s Research on the Low Tar Cigarette Category**

2503. Internal RJR documents show that RJR conducted research not just on individual low tar cigarette brands, but on low tar cigarettes as a category. These documents demonstrate that RJR has long known and intended that its advertisements and marketing for low tar cigarettes, featuring claims of lowered tar and nicotine and "light" and "ultra light" brand descriptors, contributed to and reinforced consumers' belief that low tar cigarettes are better for their health, and caused consumers to smoke them for this reason.

2504. A 1974 survey showed that "a substantial majority of smokers said they agreed with the statement, ‘low tar and nicotine cigarettes are a major step in making smoking less harmful to their health.'" 501238259-8269 at 8265, 8269, 8271 (US 22072); 501238270-8357 (US 48736).

2505. As part of a 1975 marketing plan to introduce a new low tar Salem product, RJR recognized that "[l]ow numbers are the primary benefit/feature which can solve the concerned smoker's anxiety about health." 50231320-3308 at 3253 (US 22151).

2506. A November 17, 1975 report prepared for RJR by Rosenfeld, Sirowitz & Lawson, Inc., titled "An Evaluation of the 120MM Market and Its Potential for RJR," stated:

> Currently RJR divides the total cigarette market into three basic categories: Full Flavor; Medium Flavor; High Filtration. However, the recent rapid growth of the High Filtration segment, may be a signal that the consumer is beginning to be more health conscious than ever before, and will be even more so as time goes on. If this is the case, we believe that consumers will ultimately divide the market into three categories which in their minds would be categorized as: “Least Safe Brands” “Safer Brands” “Safest Brands.”

The RJR report defined the "Safer" and "Safest" brand categories as follows:

> Safer Brands: These are brands which are perceived to combine an acceptable level of taste with mildness. Smokers of these cigarettes, while not overtly concerned with health, do switch to them after feeling some physical discomfort from their previous brand. Although they are not aware of T&N numbers, they know they are “moving down” to a milder cigarette.
>
> Safest Brands: Cigarettes in this category are perceived to have a mild taste. Smokers of these brands are very concerned about health and quite aware of T&N numbers. Their concern -- more than any physical discomfort -- causes them to switch to brands with low T&N numbers.

2507. The report further concluded: "We believe that the most dramatic evidence of the growing interest in Safer Cigarettes may be seen in the growth of the various Lights/Milds line extension products." 500671364-1454 at 1402, 1403, 1405 (US 22158) (emphasis in original). The report also stated: "As previous research has indicated, Smokers of Lights/Milds products (designated in this report as Safer Brands) are not aware of T&N numbers. Hence, the fact that a 120MM Lights entry will have high T&N numbers (on a total cigarette basis) should not impede its progress." 500671364-1454 at 1408, 1436-37 (US 22158); Schindler WD, 75:5-13.

2508. A November 16, 1976 RJR document, titled "New Brand Development," recommended introducing a "New, Single-Minded Advertising Campaign" that would "convey our lowest ‘tar' benefit." In terms of future plans, the document stated "[f]or example, in the new and special wants area, there is style and value which we met with MORE, extreme health concerns which we are meeting with NOW [brand cigarettes], and with the evolution of the market toward low ‘tar', many more opportunities will be present in this area . . . ." A section of the document titled "Super Low ‘Tar' Products" stated: "We will also be working on super low tar products which address the wants of very concerned smokers. A growing number of smokers seek products with tangible/visible features to assuage their concern about smoking." 501282466-2513 at 2480-2481, 2488, 2496, 2502 (US 48813).

2509. A June 21, 1982 Product Research Report on Non-Menthol Ultra Low Tar Consumer Probes, written by RJR's Marketing Development Department, stated: "Most respondents [ultra low tar smokers] preferred a white filter to a cork filter because they considered white to be more indicative of ULT cigarettes. The white filter generated strong associations with gentleness, purity, cleanliness, modernization, and innovativeness." 503394459-4485 at 4464 (US 85036).

2510. The 1982 report also stated: "Women are more optimistic about new brands that could offer lower tar. They are more willing to compromise on taste if they feel a cigarette has more personal benefits, although ‘It would be great if it has good taste, too.’" The report further stated that ultra low tar smokers "want as little tar as possible, but they want taste to be at least on par with current ULT brands. They feel they have made taste trade-offs by smoking a ULT." The report continued: "It is unlikely ULT smokers would switch brands if the tar level of the new

cigarette is equivalent to their current brand. Lower tar is a strong motivating factor." The report also recognized that smokers perceive low tar cigarettes as having less desirable taste, stating: "The main obstacle appears to be to convince smokers the new cigarette delivers a more flavorful, richer taste, and lowering the tar does not reduce taste and smoking satisfaction." The report also noted:

> Women seem to be more accustomed to moderation in their lifestyles. For example, they are inclined to trade-off some taste for the weight control and health benefits of low calorie and low fat foods. They want some taste assurance, but are open to compromise. They are willing to tolerate an adjustment period as they become acclimated to a new product they perceive to be better for them.

The document further stated: "ULT smokers perceive low tar claims to be credible. They try to balance their desire to smoke and personal concerns." 514343517-3566 at 3522, 3524-26, 3530, 3540 (US 51848).

2511. According to Gary Burger, RJR Senior President of Research & Development, RJR was aware that consumers smoke low tar cigarettes for the perceived health benefit. Burger observed that "[c]ertainly, smokers perceive lower tar cigarettes in some ways to be better for them and therefore they want them." He noted that consumers "have that impression that there are higher levels of bad stuff in high tar cigarettes and lower levels of bad stuff in low tar cigarettes." Burger PD, Arch v. American Tobacco Co., 8/21/97, 226:9-243:18.

**(3) R.J. Reynolds's Public Statements About Low Tar Cigarettes**

2512. In May 2004, RJR's website stated: "Reynolds Tobacco is not interested in trying to persuade any nonsmokers to begin smoking or in persuading any smokers not to quit."

Andrew Schindler, Executive Chairman of Reynolds American Inc., testified that "Reynolds Tobacco is not interested in trying to talk any smokers out of quitting." TLT0770095-0128 (US 72410); Schindler WD, 76:17-77:5.

2513. RJR's website further stated:

> Our company, like other cigarette manufacturers, uses brand descriptors such as “full flavor,” “lights” and “ultra lights” to differentiate cigarette brand-styles in terms of such characteristics as strength of taste, and reported “tar” and nicotine yield. These terms do not, and are not meant to, imply that any cigarette brand-style or any category of cigarettes is safer than any other.

TLT0770095-0128 at 0111 (US 72410); Schindler WD, 64:19-65:3.

2514. A March 21, 2003 RJR statement to stockholders presented a proposal "to find appropriate ways of informing our customers about the actual health risks of smoking ‘light and ultra light' cigarettes to disassociate them from any belief that such products are safer and deliver less tar and nicotine." This proposal cited the conclusions of NCI Monograph 13 that low tar cigarettes present no significant reduction in harmfulness relative to full-flavor cigarettes, and that "'many smokers choose these products as an alternative to cessation'" out of a mistaken belief that they are less harmful. The proposal also referenced several pending lawsuits against one or more of the Defendants alleging fraudulent marketing of low tar cigarettes as less harmful. The Board of Directors of RJR recommended a vote against this proposal. One of the reasons given by RJR for rejecting this proposal was that, "if implemented, this proposal could significantly interfere with RJR's defense of pending litigation." TLT0960025-0029 at 0027-0028 (US 87993); Schindler WD, 66:4-67:16.

**c. Brown & Williamson**

### (1) Brown & Williamson's Marketing of Low Tar Cigarettes

2515. A B&W document, titled "Kool Family Utopian Objectives 1979-1985," stated that "Kool must move into the health reassurance segment so that 45% of KOOL business will be in the perceived product safety arena by 1982 which will approximate the 45% of total smokers who will be smoking hi-fi products by 1982." Under the heading "Strategies," the document stated: "Provide product safety reassurance while enhance [sic] the satisfaction and refreshment perception of the appropriate KOOL styles through the successful national launch in 1979 of either: 1. Low 'tar' parent [or] 2. Repositioned KOOL Milds." 680559149-9162 at 9149-9150 (US 54048).

2516. An internal March 25, 1983 B&W memorandum from A. J. Mellman, a B&W marketing employee, to R.A. Blott, B&W Senior Vice President of Domestic Marketing, regarding current cigarette project ideas for the Kool brand family, including low tar brands, stated: "KOOL maintained a three share level for over 30 years (through mid-60's) while positioning itself as a specialty cigarette to be smoked only for remedial or medicinal purposes." The fourth project idea was: "Improve health aspect: Anything that can be done to decrease the risks associated with cigarettes is a positive to most consumers." 514110006-0009 at 0007-0008 (US 21745).

2517. An April 28, 1998 document prepared for B&W, titled "Kool Natural Lights Round I & II Focus Groups: Presentation of Findings Prepared for Brown & Williamson," under the heading "Highlights : Natural Lights Idea," stated: "Respondents assumed that a natural light cigarette would be less harmful than a regular cigarette, they did not assume it would be

'healthy.'" 210430297-0396 at 0322 (US 67711); Smith WD, 83:18-84:20, 85:6-8.

2518. B&W's objectives for the 1957-1961 Viceroy advertisements were to "[a]ttract smokers . . . promising . . . implied health benefits because of filter" and "with substantial health benefit implications, because of blend and filter." Ivey WD, 51:15-52:13; Smith WD, 71:18-72:1; 670001750-1766 at 1754-1755 (US 20962).

2519. A 1975 B&W document, titled "Viceroy Marketing Strategy," identified the "Problem Advertising Must Solve": "[A]dvertising must . . . cope with consumer attitudes about smoking, providing either a rationale or a means of repressing the health concern." 680113760-3763 at 3762 (US 20987); accord 680116947-6968 at 6959, 6961 (US 21877) (1975 document, titled "Viceroy Agency Orientation Outline," stating "Test Market Campaigns: Strategy-Given consumers awareness of the smoking and health issue, full flavor smokers must deal with their illogical behavior. Therefore, we attempted to communicate Viceroy's flavor/satisfaction benefits by providing consumers a rationalization for smoking or a repression of the health concern"); Smith WD, 73:2-17.

2520. The memorandum noted that, in 1953-1954, Viceroy's advertising campaign slogan was "VICEROY's double barreled health protection" and "Better Your Health," with the "objective and creative strategy" being to "[a]ttract smokers of all other cigarette brands by promising superior health protection because of more effective filtration from both a new filter and a longer length." The memorandum concluded that "[t]hese two product changes firmly positioned VICEROY as a high-filtration, healthier cigarette and attracted smokers in droves." The same theme continued in 1955-56, when one of the "Objectives and Creative Strategies" listed was to "Attract smokers of non-filter brands and the new filter brands by promising good

taste equivalent to non-filter brands and superior health protection because of blend and filter." 670001750-1766 at 1752-1754 (US 20962); see also (US 87468); (US 87469); (US 87470) (1953 magazine advertisements featuring claim of Viceroy's "double barreled health protection").

2521. Carlton is a low tar brand that was originally manufactured by American Tobacco until that brand was acquired by B&W in 1994, along with American Tobacco's Lucky Strikes, Pall Mall, & Tareyton brands. Gesell PD, State of Minnesota v. Philip Morris Inc., 9/18/97, 6:10-17; 117:3-15; 25:23-26:3; 93:2-13.

2522. According to Sharon Smith, former Director of Marketing Services and Operations at B&W, "Carlton advertising focused on tar delivery." She explained:

> For Carlton, it's not an imagery campaign. It's more communication of tar levels. I'm familiar with consumers of competitive brands to Carlton saying in focus groups that to convince them to switch from their brand to Carlton, an understanding of what the tar levels are is more important to them.

Smith further explained that, for those smokers, her research has found that their understanding of the tar and nicotine numbers is based "certainly on our advertising." Smith WD, 69:10-14; 75:3-23.

2523. A B&W document circa 1996-1997, titled "Carlton Creative Plans," disclosed that the first "Primary" trait of Carlton's target audience was "Health Conscious." With respect to print advertisements, the report stated: "Magazine [advertisements for Carlton] Will be Driven by Editorial That is: ‘Health Conscious.'" Carlton's "brand strategy" was "to continue to defend the franchise while communicating its ‘lowest' positioning to maintain switching inflows from those smokers trading down in tar levels." The document went on to state that "CARLTON packaging issues will be explored to determine how best to communicate ultra light product cues . . . hype

its increased communication of ultra low tar." 176020783-0800 at 0785, 0792, 0798 (US 23351); accord 176020856-0926 at 0868-0869 (US 23357).

2524. In 1999, B&W began a promotional campaign emphasizing that Carlton cigarettes were Ultra Ultra Light, including package statements that Carlton delivered only "1 mg." of tar. B&W's advertisements featured the slogan "Isn't it time you started thinking about number one?" According to Susan Ivey, "many factors drove consumers' preference for Carlton, and for some smokers, one of those factors was a belief that ultra low tar could reduce one's risk." Ivey WD, 52:14-53:15; ADV027 0780-0782 (US 9846); ADV045 0468-0470 (US 11362) (1999 advertisement); ADV027 0924-0926 (US 9892); ADV032 0011-0013 (US 10678).

2525. In March 1999, Nicholas Brookes, B&W Chairman and CEO from 1995 to 2000, became aware of a discrepancy in the tar delivery of Carlton cigarettes. The cigarette, when smoked by human smokers, delivered three milligrams instead of the advertised one milligram of tar. Because B&W had just introduced a new advertising campaign "touting Carlton as the '1' for you," Brookes attempted to delay the publication of a study that would have alerted the public to the new findings. Brookes did not direct B&W's marketing department to discontinue the "Carlton is the '1' for you" campaign, even though he acknowledged that it might cause confusion for consumers. 190245079-5080 (US 85018); Brookes PD, United States v. Philip Morris, 3/31/03, 146:18-148:12; 149:3-149:20; 150:14-150:18.

2526. A July 27, 2000 document prepared for B&W by Kay Harwood Marketing Analysts, Inc., titled "Topline Report of Findings for Carlton Advertising Research," indicated that smokers continue to view Carlton cigarettes as healthier, stating: "Focus groups were allowed to submit two words in addition to those suggested by the group hosts. Among the

words independently chosen to describe Carlton cigarettes were ‘feeling healthier' and ‘healthier.'" Among the Report's ‘Key Findings' are the statements from the focus groups in response to several Carlton campaigns. The statements include:

> Healthier -- trying to sell a healthy cigarette -- Very few people have realized that Ultra is better . . . Purity/better for you. . . . Fewer people have health problems smoking this brand . . . . This cigarette is best for you . . . better for you. . . . Clean & improved -- healthier brand; less nicotine. . . . Healthier living. . . . Carlton is healthier for you. . . . Gives next to nothing harmful -- means healthier -- Carlton is healthier for you . . . safe cigarette. . . . They are much better for you -- A healthier cigarette. . . . Healthier. . . . This is the best for you -- lowest in bad stuff. . . . Better for you, lighter smoke. . . . Carlton will make you happier and healthier. . . . Health-minded, concerned people (get healthier). . . . The safe cigarette -- Cut down your risk -- Light and less harmful. . . . This will save you -- this is the solution you have been waiting for.

250255336-5347 at 5340, 5343-5347 (US 22031). These statements were repeated in an August 8, 2000 document prepared for B&W by Kay Harwood, Marketing Analysts, Inc. titled "Carlton Advertising Research: Report of Key Findings." 250255060-5075 at 5064, 5066-5068, 5071-5075 (US 22170).

2527. A document, titled "Carlton Advertising Research: Four Focus Groups," bearing MAI (Marketing Analysts, Inc.) and B&W insignia on the cover, discussed July 2000 focus groups stating that smokers of both Carlton and competitive Carlton Ultra light associated Carlton cigarettes with being "[b]etter for you/[h]ealthier." The Report concluded that the Carlton "It's the Least You Can Do" campaign (labeled the "U" campaign) created the impression that "Carlton is better for you." The Report's "Key Recommendations" include: "If the primary objective of the advertising campaign is to position Carlton as a lower/the lowest tar and nicotine cigarette, the current research suggests the "U" campaign (It's the least you can do) effectively

conveys this positioning." 250221262-1294 at 1275, 1277, 1287 (US 22030); Ivey WD, 59:20-6060:12.

### (2) Brown & Williamson's Research on the Low Tar Cigarette Category

2528. Susan Ivey acknowledged that she is aware that "some smokers choose lights because they perceive a health benefit," and that "Brown & Williamson's consumer research . . . indicates that certain smokers switch to low tar cigarettes because they believe that these cigarettes are 'less harmful' than regular cigarettes." As demonstrated below, these consumer research documents establish that B&W has long known and intended that its advertisements and marketing for low tar cigarettes, featuring claims of lowered tar and nicotine and "light" and "ultra light" brand descriptors, contributed to and reinforced consumers' mistaken belief that low tar cigarettes are better for their health, and caused consumers to smoke them for this reason.

2529. For instance, a 1967 B&W advertising and marketing strategy for high-filtration/low tar products describes B&W's marketing strategies:

> [Vanguard brand strategy:] "To capitalize upon a prevalent smoker desire to lessen the health risk involved in his smoking via a switch to a low tar cigarette . . . . Advertising Objective -- Communicate a dual smoker benefit: low tar and satisfying taste."
>
> Modified LIFE "Marketing Strategy -- To fully capitalize on health vs. cigarette smoking publicity and publishing of tar/nicotine data by marketing LIFE as the lowest tar cigarette in the filter 85 segment."
> Filter 70's "Marketing Strategy -- To capitalize on smoker concern of 'smoking too much' by offering a means for reducing smoking without . . . cutting down on number of cigarettes smoked . . . . Advertising -- Filter 70's would offer smokers the opportunity to smoke up to one-third less (shorter tobacco section), but they can light up as often."

Ivey WD, 57:22-58:10, 63:1-8; 670186789-6824 at 6790, 6792, 6798, 6802, 6804 (US 21431).

2530. An August 1967 B&W document, titled "A Psychological Map of the Cigarette World," stated that

> PEOPLE WHO SMOKE FILTER CIGARETTES . . . ARE MORE CONSCIOUSLY IN CONFLICT ABOUT SMOKING . . . . THEY CAN'T COMPLETELY ENJOY SMOKING BECAUSE THEY KNOW IT IS NOT HEALTHY. . . . THEY MAY BE RECEPTIVE TO ADVERTISING WHICH HELPS THEM ESCAPE FROM THEIR INNER CONFLICTS ABOUT SMOKING.

680282619-2668 at 2642 (US 85305).

2531. A 1969 marketing document from B&W's files prepared by a consultant for Imperial Tobacco, the sister company of B&W, stated that the smoker "seeks a new covenant between himself and the tobacco industry" and has "trust" that the industry "is going to provide him with a product that he can enjoy without fear of physical or psychological reprisal." 680082943-3125 at 2959-2960 (US 20983).

2532. An October 21, 1971 Philip Morris document acknowledged that it "was abundantly clear" that manufacturers in the United States, and B&W in particular, "are concentrating on the low TPM [total particulate matter] and Nicotine segment in order to create brands with distinctive product features which aim . . . to reassure the consumer that these brands are relatively more ‘healthy'" than regular full-delivery cigarettes. "Hence B&W is devoting its efforts entirely to the Hi-Fi ["high filtration"] segment, and its two major projects . . . demonstrate this strategy." 100028935-8937 at 8935 (US 20089).

2533. A September 1974 B&W marketing research study, titled "The ‘New' Smoker," examined the "Behavioral Factors" of new smokers and concluded that new smokers are "mis-

informed on cigarette strengths." The study concluded that new smokers believed that low tar cigarettes were "better for you." 779217794-7833 at 7822-7823 (US 21055).

2534. A November 29, 1976 B&W memorandum from F.E. Latimer to B.L. Broecker and M.J. McCue, all B&W marketing employees, described the role cigarette advertising plays in allaying smokers' fears of the health consequences of smoking:

> [B]ecause such large numbers of the institutions and leaders he believes in are against smoking, the average smoker often seeks self-justification for smoking. Good cigarette advertising in the past has given the average smoker a means of justification on the two dimensions typically used in anti-smoking arguments. . . . All good cigarette advertising has either directly addressed the anti-smoking arguments prevalent at the time or has created a strong, attractive image into which the besieged smoker could withdraw.

680086039-6044 at 6039-6040 (US 20984).

2535. A January 1977 report prepared for B&W by Post Keyes Gardner, Inc., discussed successful cigarette marketing in similar terms:

> The fundamental long term trends in the business are for smokers to move gradually to products that represent benefits of "<u>health</u>" and <u>modernity</u> . . . . Successful brands have offered "real" or "perceived to be real" products benefits that are founded on smokers' needs for "health" and modernity. . . . Successful advertising in the cigarette business is achieved by establishing a brand image based on a product benefit that fulfills consumers' needs for taste, "health" and modernity. . . . Historically, brands that have achieved the most success are those that offer taste within the confines of "health. . . . ." [T]he real "action: is in products that deliver, or are perceived to deliver, taste while representing the most reasonably "safe" product available . . . products have evolved along the long term continuum toward "health" and modernity. Those that have capitalized on these trends with a point-of-difference are the ones that have been the most successful. . . . Viceroy was the first brand to directly capitalize on [the perceived health benefits of filters] by featuring its filter benefit,

> and sales were dramatic for the brand. . . . [In 1965,] Carlton was introduced -- the first real response to the “health” issue as we see it today . . . . Three hifi [high filtration] brands, True, Doral and Vantage (with new, more modern filters) were successfully introduced [in the late 1960's], capitalizing on the “health” atmosphere that the anti-smoking forces were creating . . . . FORECAST FOR THE FUTURE. . . . In sum, the dynamics of “health” and modernity trends will be dominant. The smoker appears to be ready to make another major shift, losing gratification and obtaining a “safer” product, to a new generation of products with single digit tar numbers. . . . The smoker will be inundated with ‘health' oriented advertising.

776158413-8426 at 8416, 8419, 8422-8423, 8425 (US 22339) (emphasis in original).

2536. B&W's 1977 New Products Annual Marketing Plan reviewed marketing strategies for new "health oriented" low tar brands to be directed at "the extremely health conscious (worried) segment of the market." According to the plan, the "Overall Objective" was "[t]o develop and successfully launch a product which distinctively positions itself as being the ‘safest' alternative in smoking." In a review of Savannah brand cigarettes, the plan noted that the "Hi-Fi [high filtration] segment stems directly from the increasing concern over the smoking and health issue." The Savannah brand was to be "positioned against those consumers with serious health concerns who continue to smoke full flavor brands." 670156293-6424 at 6303, 6323-6324, 6342 (US 53746*).

2537. This same 1977 Marketing Plan recommended that the:

> [a]dvertising copy should assume the tone of objectivity and genuine importance. The authenticity and frankness of the copy must be arresting enough to gain the attention of those consumers concerned about their health. Taste reassurance for the brand should be subordinated in efforts to play up health reassurance claims.

In a section titled "Market Review," the plan went on to say that "[t]he appeal of the brands

competing in this segment [enriched flavor ultra low tar] is solely on the basis of implied health claims." 670156293-6296 (US 53745); 670156297-6242 at 6324, 6327 (US 53746*).

2538. A July 25, 1977 B&W Internal Marketing Study, titled "Low 'Tar' Satisfaction, Step 1: Identification of Perceived and Underperceived Consumer Needs," recited the percentage of starters and quitters from 1969-1976, and stated:

> [A]s the dynamic proportion of quitters continues to be larger than the proportion of starters, actual smoking incidence has declined about ten percentage points over the last ten years. . . . Increases in per capita consumption are assumed to correlate with lowered "tar" delivery as well as other factors. . . . HEALTH REASSURANCE: Almost all smokers agree that the primary reason for the increasing acceptance of low 'tar' brands is based on the health reassurance they seem to offer. . . . It must be assumed that Full Taste smokers come down to "low tar" expecting less taste . . . [t]hey are willing to compromise taste expectations for health reassurance.

775036039-6067 at 6043-6044, 6047, 6052 (US 21053).

2539. A 1977 document bearing the B&W seal discusses B&W's Belair low tar cigarette:

> Does Belair have growth opportunities? -- Increasing "health"-orientation of cigarette marketing and the correspondingly greater potential for 'lighter' cigarettes.
>
> To realize this growth opportunity, Belair must: . . . -- compete directly in the low 'tar' segment where greatest potential is. . . .
>
> <u>Current Positioning Objective:</u> To reestablish and maintain the relevancy of Belair's heritage as a cigarette which provides a light, yet, satisfying menthol alternative and a 'health' reassurance relative to full-taste brands. . . .
>
> July 1977 'tar' reduction . . . will allow for specific low "tar" support of the important "health" reassurance element of this brand positioning. . . .

> Overall Belair Operating Strategy: -- Through advertising, make the Belair historical image/positioning as a "light" cigarette more relevant to the current ‘tar' conscious environment. . . .
>
> Belair Copy Strategy: To position Belair as a cigarette which offers . . . lower “tar” reassurance relative to full-taste brands. . . .
>
> Belair Prime Prospect: The current Belair smoker with whom the reassurance of the lower “tar” positioning addresses possible concerns which might otherwise prompt the user to switch to a competitive low ‘tar’ cigarette.

779027336-7360 at 7339-40, 7350-51, 7354-55 (US 22163).

2540. A September 26, 1977 letter from P.J. Tighe, B&W Senior Brand Manager of New Products, to colleague Don Johnson discussed additions to Low Tar Brand Plans. The letter stated that the "Low ‘Tar' Menthol Plan" needed to provide "Health Reassurance." 660093935-3935 (US 53576).

2541. A document, titled "Fact Operational Plan for Fourth Quarter 1977 and 1978," noted that "[t]o the extent that health reassurance equates with smoking fewer of less ‘harmful' cigarettes, the reassurance must be handled carefully, since consumers clearly consume low ‘tar' cigarettes in greater quantities." The document also concluded that "[t]he greatest need in the marketplace is for a cigarette that promises and delivers: 1) Taste/Flavor, 2) Product Quality, and 3) Health Reassurance." 676038502-8796 at 8573, 8578, 8590 (US 53923).

2542. A 1978 B&W document, titled "Purite Filter," acknowledged that the "common area of leverage" of successful brands was implied health benefits due to low tar:

> The move to hi-fi cigarettes is continuing, motivated by consumers who demonstrate personal concerns towards smoking in either the health, social areas, or both. To capitalize upon these perceived consumer needs, three successful positionings have emerged in hi-fi: health reassurance, taste reassurance, and social acceptability.

> All three positionings use low "tar" as a common thread. . . . To stem the continued decline in smoking incidence, the industry must rapidly move to a point where it can address cigarettes in a totally positive light. . . . The modern hi-fi segment . . . has been growing dramatically over the last five years. This growth has been spurred by the consumer desire for health protection, as achieved through particulate matter reduction and the industry response in offering low "tar" brands with heavy marketing support. . . . Although the hi-fi segment is continuing its rapid expansion to a projected 50% by 1982, only three positionings are demonstrating vitality and durability among the freestanding low "tars": low "tar"/implied health, i.e. Carlton, True; extra flavor, i.e. Merit; social acceptability, i.e. Vantage. . . . Low "tar"/implied health is the common area of leverage with all these entries.

680559100-9124 at 9100, 9101, 9110, 9120 (US 21003).

2543. A November 14, 1978 document, titled "Low Delivery Cigarette Project For Brown & Williamson Tobacco Corp.," reported that, between 1974 and 1976, 60-74% of consumers believed that "'low tar and nicotine cigarettes represent a major step in making smoking less harmful.'" Under the heading "'Health' vs. Image/Taste/Satisfaction," the document stated that B&W's marketing plan included "using acceptably Low Delivery numbers to provide assurance that the brand is at least at parity with its health-oriented competitors." 670133560-3690, 3572, 3581 (US 87887).

2544. An October 1979 "History and Key Trends in the U.S. Cigarette Market," compiled by E.T. Parrack, B&W Vice President of Brand Management, confirmed B&W's knowledge that smokers turn to low tar cigarettes in response to health, not taste, concerns. 670624932-5364 at 4935 (US 53869). The document contains the following statements, reflecting B&W's knowledge that the increase in filtered and low tar cigarette sales from the 1950s through the 1980s resulted from consumers' belief that these products were less harmful,

as a result of Defendants' extensive marketing of these products:

> The success of hi-fi brands is due in part to the large sums being spent to advertise them. Id. at 5279.
>
> [Between 1957 and 1960] the consumer was bombarded with messages regarding high filtration. Id. at 5036.
>
> 1964-1975 -- Emergence of brands using low "tar" as primary appeal . . . appearance of brands which actually based their appeal on low tar and nicotine numbers. Id. at 5275, 5277.
>
> Two forces are driving the current high rates of brand switching: Smoker concern about personal health [and] Smoker concern about social censure. . . . successful new brand development would have to be aimed at and satisfy the smoker needs arising out of these two key forces. Id. at 5165.

Regarding the perceived health benefits of menthol cigarettes, the compilation stated:

> [T]he split between menthol and Hi-Fi continued. Smokers were forced into a trade off of Hi-Fi vs. menthol. But was it indeed a trade-off? As we have noted, Salem was perceived as a relatively mild cigarette, and menthol itself had been promoted for years for soothing throats irritated by smoking and was the cigarette used by many when they had colds. Thus Salem and other menthols could be regarded as equivalent to a Hi-Fi. Id. at 5036-5037.

670624932-5364 (US 53869).

2545. A June 2, 1980 B&W memorandum from Brian R. O'Hare to J.F. Roberts stated:

> It now becomes necessary, in light of the increasing importance of the smoking and health issue and Kent's repositioning as the health reassurance brand[,]" to implement the remaining phases of B&W's plan to position Kent as a less harmful brand. The memorandum noted the importance of implementing this plan" as the smoking and health issue becomes more important on a worldwide basis.

660942115-2116 at 2115 (US 53580) (emphasis in original).

2546. In a July 2, 1982 B&W report, titled "What Are the Obstacles/Enemies of a Swing

to Low ‘Tar' and What Action Should We Take?," B&W Assistant General Counsel J. Kendrick Wells gave his views that B&W should respond to attacks on low delivery cigarettes in the following manner:

> B&W will undertake activities designed to generate statements by public health opinion leaders which will indicate tolerance for smoking and improve the consumer's perception of ultra low "tar" cigarettes (5 mg. or less). The first step will be the identification of attractive scientists not previously involved in the low delivery controversy who would produce studies re-emphasizing the lower delivery, less risk concept. Through political and scientific friends, B&W will attempt to elicit from the administrative and legislative branches of the federal government, and perhaps voluntary health groups, statements sympathetic to the concept that generally less health risk is associated with ultra low delivery cigarette consumption. The program is designed to produce statements of sufficient news interest to reach the public through the media. In addition, B&W would seek to generate spontaneous mainstream media articles dealing with component deliveries, much as the old Readers Digest articles. . . . B&W will urge the industry to sponsor research in the ultra low delivery cigarette area which turns the principles used against the industry to positive use. . . . Industry positions favoring the low delivery cigarette can be effectively presented, but must be carefully structured.

680592164-2169 at 2164-2168 (US 21009); (no bates) (US 76213); Wells WD, 46:11-49:3.

2547. A March 27, 1985 B&W memorandum from E.T. Parrack, Jr., Vice President of Domestic Marketing, to Thomas E. Sandefur, Jr., B&W's CEO, stated that "health reassurance" is one of the "'rational' benefits" that have been grafted on to the two "basic benefits" that cigarettes have always offered to consumers. The two basic benefits are: "physical smoking satisfaction" and "Emotional (image/social) reinforcement: ‘The me I want to be.'" 528010755-0759 at 0755, 0757 (US 20926).

2548. A 1999 B&W document, "Current Trends in Lights and Ultra Lights," stated

under the heading "Learnings": "Consumers were ready for low tar before Marlboro Lights. Health concerns. . . . Anti-smoking pressure and PM's initiative ignited the process. Manufacturers' focus on Lights accelerated the growth." 430403186-3194 at 3193-94 (US 22084).

2549. According to Sharon Smith, former B&W Director of Marketing Services and Operations, her consumer research indicated that smokers of light cigarettes, as compared to ultra light smokers, "did not have the same level of understanding of the tar numbers, and instead spoke in terms of full flavor versus lights," and as a result "rely primarily on brand descriptors like ‘light,' ‘medium,' and ‘ultra light' as relative indicators of the cigarette's tar level," and that they "think of light and ultra light cigarettes as being lower in tar and nicotine." Smith WD, 76:4-12.

**(3) Brown & Williamson’s Public Statements About Low Tar Cigarettes**

2550. Since at least 1981, Brown & Williamson’s public position has been that "it has never marketed filtered or low tar cigarettes as less harmful than regular cigarettes." Similarly, Sharon Smith, former Director of Marketing Services and Operations at B&W, denied that the words "low tar" communicates any health benefit, stating that "I would not say that low tar implies any sort of benefit, other than it's lower in tar." Ivey WD, 51:9-13; Smith WD, 66:19-22.

2551. A June 17, 1999 B&W Question & Answer ("Q&A"), labeled a "working document," stated that B&W did not lower the tar and nicotine in its cigarettes for health reasons and that B&W does not "claim that [low tar] cigarettes are any better/safer for you than any other cigarette on the market." 127030138-0138 (US 22113).

2552. In March 1999, Nicholas Brookes, B&W Chairman and CEO from 1995 to 2000, denied that B&W had conducted research on consumer perception of light cigarettes and whether reduced risk was associated with these cigarettes. Brookes PD, United States v. Philip Morris, 3/31/03, 162:13-163:9.

2553. Sharon Smith has claimed that "Brown & Williamson has only used the terms ‘low tar' or ‘light' with respect to its cigarettes to communicate lighter taste -- lighter taste and nothing else," and that "consumers have overwhelmingly responded that lighter taste is the only benefit that Brown & Williamson's advertising for its low tar brands has indicated." Similarly, Susan Ivey has also said that "[m]y experience is that most consumers choose lights for taste, because they prefer a lighter tasting cigarette." Smith WD, 50:7-51:2; Ivey WD, 57:18-21.

2554. B&W states on its website: "We do not believe that people who are concerned about the health risks of smoking should view lower tar products as an alternative to quitting." TLT1040050-0055 at 0055 (US 88620); Ivey WD, 63:9-16, 64:1-6; Smith WD, 61:19-23.

2555. Despite the substantial evidence already referred to, supra, that B&W was aware that consumers interpreted its low tar brand descriptors to be indicative of a less harmful cigarette, in May 2004, B&W stated on its website that brand descriptors were intended only to communicate taste:

> Cigarette brands in the U.S. are usually identified on packs, cartons and advertising as belonging to the following categories: “Ultra Lights” or “Ultra Low Tar,” “Lights” or “Low Tar,” and “Full Flavor. . . .” Recent published studies suggest that the majority of smokers use descriptors to guide their product selection based on taste. . . . It is not Brown & Williamson's intention to suggest that any individual brand, regardless of the category descriptor terminology used, or tar yield, is safer than any other.

TLT1040056-0062 at 0061 (US 88628); Ivey WD, 70:5-14.

**d. BATCo**

**(1) BATCo's Research on the Low Tar Cigarette Category**

2556. BATCo's research documents establish that the company has long known and intended that its advertisements and marketing for low tar cigarettes, featuring claims of lowered tar and nicotine and "light" and "ultra light" brand descriptors, contributed to and reinforced consumers' mistaken belief that low tar cigarettes are better for their health, and caused consumers to smoke them for this reason.

2557. A 1972 BATCo memorandum pointed out that health reassurances usually result in increased sales:

> Over the years manufacturers have provided the public with a variety of platforms to . . . "enhance the association in smokers minds between the benefits of smoking and our cigarette products." Increasingly, by implication, these claims have turned to a health orientation and very often the closer these have come to relating the smoking benefit to being one of "health" the more successful has been the brand.

100006864-6868 at 6864 (US 20076).

2558. A May 3, 1974 note from Anthony D. McCormick of BATCo's Legal Department "[t]o all Members of the Conference" enclosed a document for discussion by BATCo employees at an upcoming company conference. Under the heading "SMOKING AND HEALTH ASSUMPTIONS," the discussion document stated: "On legal grounds alone it will continue to be to the industry's advantage not to make explicit health claims. The industry will make increasingly competitive use of products for which health claims are implied." 100428581-8599 at 8581, 8583, 8599 (US 34649).

2559. A March 29, 1976 BATCo report, titled “The Product in the Early 1980s,” stated that “opportunities exist for filter and cigarette design which offer the image of ‘health reassurance.’” 11069974-9982 at 9974, 9979 (US 20268).

2560. An internal April 14, 1977 BATCo memorandum by P.L. Short, Manager of BATCo's Marketing Department, describing BATCo's marketing plan, stated that "[a]ll work" would be

> directed toward providing consumer reassurance about cigarettes and the smoking habit . . . provided . . . by claimed low deliveries, by the perception of low deliveries and by the perception of “mildness.” Furthermore, advertising for low delivery or traditional brands should be constructed in ways so as not to provoke anxiety about health, but to alleviate it, and enable the smoker to feel assured about the habit and confident in maintaining it over time.

100427791-7800 at 7794 (US 34641) (emphasis in original).

2561. An April 1982 document, titled "Conference on Marketing Low Delivery Products: January 1982," stated: "The BATCo.'s Board policy stated in the Market Expansion document is to lead the industry in the trend towards lowering deliveries. . . . [C]onsumers will probably believe that lower deliveries mean less ‘risky' products." 690120722-0756 at 0726, 0728 (US 21043); Ivey WD, 80:14-81:9.

2562. An undated BATCo document, titled "Lights Segment Project Consumer Insight Into Smoking Lights," listed under the heading, "How to Create a Positive Lights Culture," the following three ways to "differentiate the lights from full flavor smoking . . . Color, Cues e.g. Blues & Whites . . . Lighter Lifestyles e.g., water related outdoor fun activities . . . Light symbols e.g. Bubbles[;] Air balloons[;] Light winds." 321546706-6724 at 6719 (US 46770).

2563. Susan Ivey, who worked in marketing for BATCo from 1990 to 1999, admitted that, in her experience, "while many smokers know they are buying a lights product, their actual understanding of what the specific delivery numbers are is quite limited. For example, consumers might know they are smoking a lights version of a brand, but they wouldn't know what the machine-measured tar yield was for that cigarette."

2564. Similarly, a September 1992 BATCo Business Review prepared by Norma Simamane, BATCo Lights Project Manager, stated that "[g]enerally, the specific meaning of Tar and Nicotine is not understood by consumers. However, they perceive a strong association between the numbers with ‘perceived health effects.' Basic understanding is that ‘the higher the numbers, the stronger the negative health effects.'" Instead of precluding use of advertisements intimating that low tar cigarettes are healthier, the document stated: "Reference to overt communication of health related issues must be avoided." The document also advocated using brand descriptors such as "'Light,'" "'Ultra'" and "'Suave (indicating Lights)'" as opposed to tar and nicotine yields, because "T&N numbers . . . tend to highlight negatives and to remind consumers of the negatives of smoking thereby increasing the ‘guilt' feeling." The document further stated: "The importance of the Lights segment is demonstrated by the growth trend that is 5 times faster than total world cigarettes volume. . . . In addition to being profitable, future projections indicate an even faster growth of lights." Ivey WD, 76:10-12. Ivey WD, 82:4-11, 76:10-18; 321683062-3099 at 3087, 3090, 3065 (US 28586).

2565. A January 1995 research report prepared for BATCo, titled "Silk Cut Brand Status Check & Concept Evaluation," stated, under the heading "Attitudes to LTN [low tar and nicotine]":

> There was universal agreement . . . amongst ff [full flavor] smokers that they would switch to LTN if and only if a lights brand with taste could be produced. But that seemed almost a contradiction in terms for many of them as many ff [full flavor] smokers described a direct correlation between tar and nicotine levels and taste. Regular lights brands smokers -- even Marlboro Lights -- were reassured about health concerns by choosing to smoke such brands.

800056515-6581 at 6526 (US 31643).

2566. A BATCo document bearing the heading "Barclay Business Review 1996" concludes both that consumers rely on product packaging and marketing (as opposed to FTC tar and nicotine deliveries) to indicate low tar level and that reduced tar level significantly increases purchase interest:

> Consumers -- with the exception of 1MG [tar cigarette] smokers -- are not able to quote correct tar/nic deliveries of the brand they are smoking currently. This means that the consumer does not segment the market in terms of deliveries but he uses colour coding and descriptors to distinguish FF, Lights and Ultra Lights . . . shelving according to [FTC tar and nicotine] deliveries has a positive impact on the awareness of the Lights category in general. The willingness to try Barclay increased significantly.

700767443-7457 at 7452 (US 22123); accord 321184656-4672 (US 22045).

2567. In a BATCo Kent Super Lights Brand Plan, BATCo discussed ways in which to "accelerate its lights segment growth." Under the heading of "Key Insights from 1997," the plan reported that "[l]ights franchise is skewed towards upscale 35+ female smokers, this is consistent with associated smoker (who is assumed to be health conscious)" and that "'[h]ealth conscious' brand choice is seen by ASU [adult smokers under] 30s as a purchase pattern for 40+ smokers." 321551304-1323 at 1304, 1305 (US 22057); Ivey WD, 78:1-13.

2568. A "Qualitative Research Report on Light Cigarette Brand Perceptions" dated January-February 1997, stated, under the heading "Benefits Sought From Lights":

> Most older males pointed out that the main benefits of Lights was the fact they were less harmful. This factor was also very important for younger females, who often said they "had to think of the future." Some of the girls were sure Lights didn't form so strong smoking habits, [believing that] "it's easier to give up smoking if one smokes lights."

The "Conclusions" Section stated: "Light brands are primarily perceived as . . . less harmful for one's health (easier breathing, better physical state in general). . . . Some of the females perceive the concept of ULTRA LIGHTS as . . . the last step before giving up smoking," and noted that 18-24 year olds "ranked health care features of lights most highly." 760008596-8803 at 8686, 8692-8693 (US 54588) (Confidential).

2569. A 1999 BATCo document, titled "Lightning -- Extreme Smoking Regimes Testing Results and Implications for IT and The Light-Mild Issue," cited a "Smokers' attitudes report" which showed that more smokers perceive the terms "light" and "mild" to indicate low tar than to connote taste or any other characteristic. 321989078-9276 at 9121-9122 (US 28819).

2570. A 1999 BATCo presentation on marketing in Europe bearing the headings "Research" and "Heathrow Proposition" stated that many smokers want to "trade down" in tar in order to minimize risk and harm caused by their cigarettes:

> [S]trong potential for a new low tar brand -- many smokers looking to trade down. . . . Low tar Minimise Risk, Maximise Pleasure. . . . New Product Proposition Low tar product with smoother yet fuller smoking experience[.] All, bar quitters, welcome proposition -- more fun/enjoyment, less harm.

321628040-8076 at 8056, 8059, 8061 (US 22060).

2571. A January 2001 BATCo file, titled "Consumer Concept Trial Notes Jan 2001 Project Baltec II," contains a section dated January 10-12, 2001, titled "Philadelphia -- General

Impressions and Summary," that revealed the results of consumer research on low tar cigarette smokers. The document stated: "There was some guilt over smoking . . . some had switched to lights with the belief that lights are better for them. . . . General feeling that lights are healthier." 325238922-8994 at 8981, 8991-8994 (US 22079) (Confidential).

2572. A January 10, 2001 BATCo document written by Steven Coburn, titled "Project Balcony," that referenced Philadelphia, Pennsylvania marketing studies related to proposed campaigns, stated "3rd board impresses the low nic/tar idea -- appears to imply healthier though no cig is healthy." 325239028-9036 at 9029 (US 22083). An identically titled document from the same author dated January 11, 2001, stated under the heading "Benefit": "Lights are supposed to be more healthy." 325239035-9036 at 9035 (US 22083). A BATCo document dated January 15, 2001 with the same title and author, but which referenced Santa Monica, California marketing studies related to proposed campaigns, stated "less tar nic -- less harmful." 325239014-9027 at 9015 (US 22082).

**(2) BATCo's Public Statements About Low Tar Cigarettes**

2573. Susan Ivey claimed that BATCo's public position was that the use of low tar brand descriptors was "not intended to make any health claims," and was "not meant to imply that light or ultra-light cigarettes are less harmful." Ivey WD, 71:20-72:3.

**e. American Tobacco Marketing of Low Tar Cigarettes**

2574. American Tobacco's brands included Carlton, Lucky Strikes, Pall Mall, and Tareyton, until they were acquired by B&W in 1995. Gesell PD, State of Minnesota v. Philip Morris Inc., 9/18/97, 6:10-17; 117:3-15; 25:23-26:3; 93:2-13. Like the other Defendants, American Tobacco used descriptive terms and low FTC tar ratings to convey misleading and

unsubstantiated health messages to the public regarding their low tar cigarettes.

2575. For nearly 30 years, American placed advertisements in nationally-circulated magazines that emphasized Carlton's purportedly low tar. For instance, American's advertisements in Time and Newsweek in 1964 for Carlton cigarettes stated:

> Everything about Carlton is selected and crafted to produce this one result: A cigarette that is low in ‘tar' and nicotine -- yet high in smoking pleasure. Carlton is so low in ‘tar' and nicotine that we print test results on all packs, on all cartons. . . . Carlton -- lightest smoke of all. See for yourself.

ATX040070514-0519 at 0514(US 21125); see also ADV011 1575-1579 (US 3028); ADV107 0020-0022 (US 88689); ADV107 0023-0027 (US 88690) (1964 Carlton advertisements).

2576. A June 8, 1964 report prepared by Gardner Advertising Company for American Tobacco, titled "A Summary Report of Two Carlton Research Studies," summarized "Carlton Concept Research" and "Carlton Penetration Research." The report stated as a "Highlight" that "Based on Ad Exposure Before Product Availability," smokers "[s]aw CARLTON as a high filtration cigarette, low in tar and nicotine. Although the advertisement made no mention of it, there was a tendency to interpret CARLTON as lower in tar and nicotine, safer, less harmful." ATC2503644-3706 at 3650 (US 87891) (emphasis in original).

2577. A 1967 Annual Report of American Tobacco shows that its Carlton cigarette, which "was developed to appeal to those smokers preferring a light cigarette -- one that is low in ‘tar' -- and nicotine yield," achieved "sizeable sales increases in 1967" resulting from "favorable publicity" as a low tar, low nicotine cigarette. MNAT00029170-9201 at 9176 (US 21222).

2578. In 1968, American's Carlton advertising stressed the fact that it was found lowest in ‘tar' by U.S. Government testing and cited its "unique Air-Stream Filter" as the source of its

ability to reduce tar to 4 mg. (as compared to what was then the industry average of over 20 mg.). ATX40397140-7141 (US 85020); MNAT00386652-6652 (US 85112); Dolan WD, 124:12-17.

2579. American Tobacco's Carlton advertisements in the 1970s emphasized FTC machine test yields to support the company's "low tar" health claim:

> 1973: "For 10th straight published Gov't Report Carlton. Still lowest in ‘tar' of all regular filter kings tested. . . . For the last 10 consecutive Government Reports. Carlton has been found lowest in ‘tar' of all regular filter kings tested. That's every Report since October 1968." ATX040070514-0519 at 0515 (US 21125).
>
> 1974: "Of all filter kings tested: Carlton is lowest. For the 12th straight time, the U.S. Government has reported Carlton to be the lowest in tar of all filter kings tested." (US 87178).
>
> 1975: "Of all filter kings tested: Carlton is lowest. Look at the latest U.S. Government figures for other brands that call themselves low in tar." US 4605; Biglan WD, 281:17-283:22; (US 87183).
>
> 1975: "U.S. Government Report shows only one is lowest . . . Carlton." (US 88691).
>
> 1978: "U.S. GOVERNMENT REPORT: CARLTON LOWEST. Carlton claim confirmed. Many cigarettes are using national advertising to identify themselves as ‘low tar.' Consumers, however, should find out just how low these brands are–or aren't. Based on U.S. Government Report: 14 Carltons, Box or Menthol, have less tar than one Vantage. 11 Carltons, Box or Menthol, have less tar than one Merit. 11 Carltons, Box or Menthol, have less tar than one Kent Golden Lights. 6 Carltons, Box or Menthol, have less tar than one True. . . . This same report confirms of all brands, Carlton Box to be the lowest with less than 0.5 mg. tar and 0.05 mg. nicotine." (US 5961); (US 5978).
>
> 1978: "Carlton is lowest. See how Carlton stacks down in tar. Look at the latest U.S. Government figures [table comparing Carlton favorably with Winston Lights,

Vantage, Salem Lights, Kent Golden Lights, Merit and True cigarettes]" (US 5811); (US 5707).

1978: "Based on latest U.S. Government Report: Carlton is lowest. See how Carlton stacks down in tar. Look at the latest U.S. Government figures [referring to table indicating Carlton has lower tar than Winston Lights, Vantage, Salem Lights, Kent Golden Lights, Merit and True cigarettes]." (US 5948).

1983: "Read the numbers on the pack. Carlton is lowest." (US 7637); Biglan WD, 281:17-283:22.

ATX040070514-0519 (US 21125); 03496228-6630 at 6309, 6310, 6580 (US 20057).

2580. A September 1973 report prepared for American, titled "Tareyton, Iceberg 10, Carlton," discussed marketing strategies for these three brands. In the "Advertising Strategy Statement" for Carlton, the report noted that in focus group interviews "the ‘health' problem is most frequently mentioned, but people tend to ignore the negatives and continue to smoke out of pleasure or habit." The report went on to say that "Carlton's copy strategy for 1973/1974 will continue to be straight forward and factual, appealing to those smokers whose concern for ‘health' hazards leads them to seek out a cigarette with truly low ‘tar' and nicotine content." ATC2472182-2243 at 2216, 2225 (US 87892).

2581. When Eric Gesell, who worked for American from 1963-1994, was asked what American intended by its Carlton cigarette advertisements from 1974 and 1978 with the slogans "Carlton is lowest" and "Carlton lowest," he admitted that, "[w]hat [American is] doing in this ad is using the FTC figures in order to try to sell a cigarette." Gesell PD, State of Minnesota v. Philip Morris Inc., 9/18/97, 5:8-25, 6:5-6, 6:10-17, 115:19-118:14; ATX040070514-0519 (US 21125).

2582. When Gesell was asked what the significance was of a cigarette being lower in tar, he answered that: “It’s lighter, lighter taste.” When asked: “Isn’t there also an implied health claim there?,” he denied it: “No, there isn’t.” Gesell also claimed that the company “didn’t have an understanding that people tended to smoke low-tar cigarettes because they were concerned about their health.” Gesell PD, Minnesota, 9/18/87, 5:8-25, 6:10-17, 97:8-13, 130:25-131:4.

2583. Carlton's 1981 Marketing Plan, dated August 18, 1980, discussed ways to make Carlton cigarettes "the brand of the 1980's." The forward to the plan noted that "[t]he Ultra Low segment of the market is continuing to grow rapidly as more and more smokers search for smoking pleasure at tar levels more in tune with the mores of the times. Carlton, as innovator and category leader, is well poised to capitalize on this trend by its inherent positioning." ATC0735197- 5261 at 5199 (US 87893) (emphasis in original).

2584. A 1983 letter to H.W. Bahrenburg, American Tobacco Product Manager, from Tom Keane of Laurence, Charles & Free, Inc., discussed advertisements for American's Carlton cigarettes, stating that American would proceed with the advertisement that best communicated that Carlton was "'lowest'" in tar and nicotine:

> Our recommendation was to go with the Bad -- “Compare” with the “U.S. Gov't Report.” This ad did very well in the general low-tar area and in fact it was the only ad which showed a “lowest” playback on the primary question -- “What do you get out of this ad?”. . . . [W]e are proceeding with “Compare” and “U.S. Gov't” on the new . . . ad.

The advertisements attached to the letter stated: "Compare to your brand. . . . Box King -- lowest of all brands -- less than 0.01 mg. tar, 0.002 mg. nic. Carlton is lowest. . . . U.S. Gov't

Report -- no brand lower than Carlton Box King -- less than 0.5 mg. tar, 0.05 mg. nic. . . . FTC Report Mar. ‘83." 991034809-4816 at 4809, 4816 (US 85113); see also (US 7536) (1983 Carlton advertisement that appeared in Sports Illustrated magazine).

2585. An August 4, 1983 American Tobacco memorandum from John A. McGinn, Product Manager, to W.J. Moore, Marketing Director, titled "CARLTON Slims," stated: "At a 6 mg. tar level, this 100 mm product would be responsive to those consumers seeking low tar. . . . It would also extend CARLTON's ‘lowest' position to yet another cigarette category." 991341428-1440 at 1428 (US 85114).

2586. A February 1987 magazine advertising campaign for Carlton also prominently featured claims for tar and nicotine reduction:

> If you smoke. . . . Compare your cigarette to Carlton. If you're interested in smoking an ultra low tar and nicotine cigarette, you should compare the tar and nicotine content of your cigarette to Carlton. Most cigarettes sold today have 10 times the tar and nicotine of Carlton Box Kings & Box 100's.

Another Carlton advertisement campaign from the late 1980s also had lowest tar as its centerpiece and implied a United States Government endorsement, listing Carlton as having lower tar than Philip Morris's Merit and RJR's Vantage cigarettes:

> If you smoke. . . . Here's the latest comparative information for smokers who want lower tar & nicotine. . . . CARLTON became the first brand to put these figures right on the pack. . . . In the last 21 reports issued by the U.S. Government, no cigarette has tested lower than Carlton. . . . If you are interested in the tar content of your cigarette, you should compare the tar content of your cigarette vs CARLTON. If you are interested in the lowest . . . LATEST U.S. GOV'T REPORT CONFIRMS: no brand lower than Carlton Box King.

MNAT00746229-6229 (US 21230); (US 8246) (1986 Carlton advertisement that appeared in

Sports Illustrated magazine).

2587. A February 29, 1988 American Tobacco memorandum from R.E. Smith, Director of Brand Management, to K.P. Noone, Product Manager, stated:

> The singular objective of all consumer communication should be registering Carlton's lowest positioning. We must continue to hammer this lowest message home to our current franchise. It's why they came to Carlton. As switching losses to Now show, it's the best way to lure them away. . . . It is my belief that most smokers will continue to seek lower tar. They have switched for it in the past, often several times.

991216857-6858 at 6857 (US 85115).

2588. In the 1990s, American's advertisements for Carlton also featured purported testimonials of smokers who claimed to have reduced their exposure to tar by switching to Carlton, including the following:

> 1994: "I switched to less tar. Like many other smokers, I wanted less tar. But I thought I'd have to sacrifice flavor . . . and isn't that what smoking's all about? Then I tried Carlton . . . and I switched! Carlton is the lowest in tar. . . . I figure if you're going to switch to less tar, why not go the distance!" (US 9257); ATX040268971-8971 (US 21127).
>
> 1994: "I switched to lowest tar." (US 9285).
>
> 1994: "If you want less tar please try Carlton. . . . U.S. Gov't. Test Method confirms of all king soft packs: Carlton is lowest in tar and nicotine." 970469347-9474 at 9460 (US 85104).

See also 970469347-9474 at 9452-9457 (US 88612) ("Carlton Creative" collection of advertisements including Carlton's "I Switched To Lowest Tar" advertisements); 970557462-7465 (US 85116) (Dec. 6, 1993 letter on American Tobacco letterhead from James M. Murray to Nancy Gavlick attaching similar "print ad comps" for Carlton).

2589. American Tobacco also placed advertisements for Carlton in the 1990s claiming that smokers could smoke ten packs of Carlton and still receive less tar than they would from smoking one pack of Marlboro, Camel, Winston, Kent, or Viceroy. (no bates) (US 9182) (1993 advertisement in Sports Illustrated magazine stating: "10 packs of Carlton Menthol have less tar than 1 pack of these brands" ); (no bates) (US 9122) (1992 advertisement noting same); Biglan WD, 281:17-283:22; (no bates) (US 9093) (1992 Carlton advertisement stating same); 970469347-9474 at 9464-9466 (US 85104) (1990s Carlton advertisements stating same); (no bates) (US 9186) (1993 advertisement stating: "A WHOLE CARTON OF CARLTON . . . HAS LESS TAR THAN 1 PACK OF THESE BRANDS. . . . Carlton is lowest in tar and nicotine"); Smith WD, 68:15-21.

2590. A September 13, 1994 document prepared for American Tobacco, titled "LCF & L Agency Orientation Handbook," describes American's print advertising strategy to

> [p]rompt competitive target smokers to question their Brands Tar Level and present CARLTON as a contemporary, satisfying answer for those smokers seeking lower tar. The strategy and presentation should start and build from a common ‘truth' in our prime prospects mindset -- to serve as a reminder that they too want less tar.

The "Positioning Statement" was: "Carlton is the brand chosen to ‘switch' to in the ULT category because it is the lowest in tar and nicotine, as confirmed by the U.S. government FTC method. By smoking Carlton you get the lowest and you do not have to sacrifice flavor." 970469347-9474 at 9354, 9411 (US 85104).

2591. In 1974, American Tobacco advertised that by switching to Lucky Strikes, smokers could: "Cut your ‘tar' in half with Lucky 100's." (no bates) (US 4405); (US 4415);

Smith WD, 74:3-14; Ivey WD, 52:4-8.

2592. American Tobacco advertisements for Pall Mall Gold cigarettes in the 1950s and 1960s featured claims of "mildness" and lowered tar and nicotine, and stated: "You make out better at both ends." (no bates) (US 88720) (1953 Life magazine advertisement); (no bates) (US 87209) (1969 Life magazine advertisement); ATX040696413-6413 (US 88613*) (1968 Time magazine advertisement); (no bates) (US 87476) (1968 Time magazine advertisement); MNAT00282147-2147 (US 88614) (1969 Life magazine advertisement).

2593. A 1976 advertisement for American's Pall Mall Extra Mild cigarettes published in Sports Illustrated magazine stated: "Lower in tar than 95% of all cigarettes sold. De-tarred but not de-tasted." (US 5232); MNAT00742048-2048 (US 21229) (1976 New York Post advertisement stating same).

2594. A 1954 Tareyton advertisement explicitly stated that its cork filter provided health protection, stating: "Tareyton's genuine cork tip protects your lips." 696000888-0916 at 0913 (US 21387).

**f. Lorillard**

**(1) Lorillard's Marketing of Low Tar Cigarettes**

2595. In a May 20, 1958 letter to Morgan J. Cramer, Lorillard's Director of Export & Government Operations, the General Manager of a Venezuelan distributor of Kent cigarettes noted that "the health angle" had been "our main selling and advertising point" for Kent advertising in the United States. The letter added: "We have succeeded in covering a good part of the American colony who are by far the majority of people who are sticking to Kent. No doubt they are influenced by American advertising and no doubt the mildness of Kent chimes in

with the ‘protection' angle."  95508397-8398 (US 32365).

2596. A July 31, 1963 Lorillard memorandum from R.F. Kieling, Director of Market Research, to M.J. Kramer, President of Lorillard, with the subject heading "1963 Gallup Attitude Survey on Smoking," reached the following conclusions concerning the public's perception of the "safest" cigarette brand based on Gallup polling:

> As in the past two studies (1959 and 1962) Kent leads the field here, with 18% of all cigarette smokers saying this brand is “safest” to smoke.  Among filter smokers, Kent rates even higher (21%). . . .  Winston and Salem are second and third choice brands, although considerably below KENT. . . .  Filter and mentholated cigarettes are considered most favorably, with most people voting them “very safe” or ‘moderately safe. . . ."

The "General Wrap-Up" stated: "Although the American public is considerably more antagonistic towards the cigarette industry this year, the Kent brand continues to stand alone as the one brand believed ‘safest' by a significant proportion of other brand smokers, as well as among Kent smokers themselves."  89836071-6076 at 6074-6076 (US 32095).

2597. A September 15, 1964 Lorillard memorandum from M. Yellen to Morgan J. Cramer, President and CEO, concerning Lorillard's marketing and sales policies, stated that, for several months before the release of the first Surgeon General's Report in January 1964, "LARK [a Liggett cigarette brand] was setting a base for future sales activities through the use of hospitals via rumors or otherwise . . . that medical scientists endorse LARK as the safest cigarette.  This marketing technique on the part of LARK proved successful."  This memorandum also acknowledged that Lorillard's marketing of Kent cigarettes as a less harmful brand contributed to its increased sales:

> As all of us are aware, KENT was marketed as a “safer” cigarette

> for the smoker who was concerned about smoking and health. In 1956 when an innocent third party (Reader's Digest) created an awareness to the consumer that KENT was the “safest” of all popular cigarettes, Lorillard exploited this advantage so that within a short period of two years the KENT volume grew from less than four billion cigarettes to thirty-eight billion annually. . . . I feel we were successful in accomplishing our objective and maintaining the safety image of KENT among consumers sensitive to health.

01124257-4265 at 4259, 4257-4258 (US 20033).

2598. In the early 1970s, Lorillard returned to the Micronite filter, redirecting its efforts to the product feature it had promoted for decades as providing health benefits to smokers. With respect to Kent's "marketing strategy," the "Lorillard Brand Reviews & Projections 1970/71" report stated: "Losses sustained as a result of moves to higher filtration brands will be stemmed through revitalization of the Kent health assurance heritage provided by the ‘Micronite' Filter." 04105292-5384 at 5296 (US 29394).

2599. A May 1971 Report prepared for Lorillard, titled "A Study of the Meaning of the Micronite Filter to Smokers Today," demonstrated that Lorillard targeted "health-anxious" smokers with "health reassurance:"

> The marketing strategy has been to hold on to its current Kent smokers and to attract lo-fi [low tar] smokers by promising taste satisfaction plus health reassurance. With the growth of the hi-fi [full-flavor] segment, a third target is those health-anxious hi-fi smokers who are looking for more taste satisfaction than these current hi-fi brands can deliver.

The report added that

> Kent and micronite filter may be, after years of advertising, strongly associated in smokers minds. . . . Prior research suggests that dropping micronite for five years had little effect on Kent's health filter image. This does not mean, however, that if Kent had <u>not</u> dropped micronite for those 5 years that Kent might not have

> been even more strongly perceived as a health brand.

03340192-0201 at 0195-0196 (US 29265) (emphasis in original).

2600. A Lorillard document circa 1972, titled "Kent Status," stated:

> Kent became a major brand after the 1957 Reader's Digest article had proclaimed it as the brand with the most effective filter. In the next years of gains and consolidation, the micronite filter was advertised as a unique Kent benefit, giving health reassurance to its growing franchise of older, better-educated, health concerned smokers.

03300409-0418 at 0411 (US 29263).

2601. A document, titled "Kent Local Newspaper Support Summary Apr/August '73," under the heading "Kent Creative Strategy," stated: "1) Consumer Benefit To convince smokers that Kent offers a combination of satisfying taste . . . . With health reassurance through superior filtration." 03078097-8110 at 8100 (US 74705*) (emphasis in original).

2602. A March 21, 1978 "Kent Advertising Brief" was prepared for the consumer research firm Foote, Cone and Belding, to provide "the background and brand information necessary to develop a global creative strategy for the Kent brand." In a section titled, "Brand Positioning," the brief recommended that "[a]dvertising and support materials should emphasize Kent's mildness in taste and health terms. The white pack and tipping will be exploited to reinforce this positioning." Also in this section, it was noted that "Kent Deluxe will present an image consistent with the King Size styles in offering health reassurance." In a section, titled "Target Audience," the brief stated that "[a]s the Smoking and Health controversy expands, it is assumed that some smokers from all socio-economic and age groups will be prepared to switch to milder, healthier brands which provide an acceptable taste and prestige." The brief maintained

that "we wish to try and develop advertising for the Kent parent brands which clearly offers the smoker health reassurance. . . . The Come/Stay campaign goes some way to projecting a health image for Kent while retaining a taste message and communicating prestige." 661076440-6453 at 6445, 6446 (US 53620).

2603. On March 21, 1978, a "Kent Golden Lights Advertising Brief" was prepared for Foote, Cone and Belding, to provide advertising guidelines for Kent Golden Lights, that stated: "In industrialized nations the target consumer is unlikely to need education on the benefits of smoking low deliver [sic] products in general terms. . . . Prospective Golden Lights' consumers will know and understand the vocabulary of mildness, low tar and nicotine." 464012420-2429 at 2424 (US 47672).

2604. Lorillard's implicit health claims in Kent advertisements from the 1970s and 1980s included the following:

> 1972: "Micronite filter. Mild, smooth taste. For all the right reasons. Kent." (US 3785); (US 87460); (US 3837); (US 10229); (US 3797); (US 3816); see also (US 10257); (US 3932); (US 3949) (1973 magazine advertisements noting same).
>
> 1982: "Kent. When you know what counts." (US 7275); (US 7379) (1983 magazine advertisement noting same); (US 7504); (US 7702); (US 7746) (1984 magazine advertisements noting same).

2605. In 1966, Lorillard introduced True brand cigarettes. Martin Orlowsky, Chairman, President, and Chief Executive Officer of the Lorillard Tobacco Company, admitted that Lorillard's True advertisements were targeted toward smokers who, due to their concerns about health risks, were seeking a low-tar cigarette. Orlowsky TT, 10/13/04, 2288:24-2289:19.

2606. A report, titled "Lorillard Brand Reviews & Projections 1970/71," stated that one of True's "marketing objectives" was to "[s]eek out highly health-conscious smokers from all filter brands." One of True's "marketing strategies" was to "[p]roject TRUE's low tar and nicotine benefit in a way that is compelling to health oriented smokers." The report also listed the following as the "copy strategies" for True: "1. Capitalize on the basic True low tar and nicotine image and the thought that health-conscious smokers have devoted to the cigarette/health issue [and] 2. Switch to True characterized as being the logical, appropriate and popular thing to do." 04105292-5384 at 5328-5329 (US 29394).

2607. Lorillard's True advertisements in the early 1970s made the following statements, which implied that switching to True brand cigarettes would provide health benefits:

> 1971: "Think about it. Doesn't it all add up to True?" (no bates) (US 3436).
>
> 1973: "U.S. Government tests show True lower in both tar and nicotine than 98% of all other cigarettes sold. . . Think About It." (no bates) (US 4029); see also (no bates) (US 3846) (1972 True advertisement); Biglan WD, 233:20-235:22; (no bates) (US 4221) (1974 True advertisement).
>
> 1974: "True. Easy on your mind. Easy on your taste . . . because True is so low in tar and nicotine, every cigarette is as easy on your mind as it is on your taste. Think about it." (no bates) (US 4491); see also 03496228-6630 at 6271 (US 20057) (circa 1974 True advertisement noting same).

2608. Lorillard's True advertisements from the mid-1970s portrayed True as an acceptable alternative to quitting smoking, as the following examples show:

> 1974: “My wife bugged me into it, would you believe it? It seemed every time I'd light up a cigarette, my wife would put on that look . . . So, we had one of our little talks. . . . Look hon, I said . . . would it make you feel better if I

changed to a low tar and nicotine cigarette? She smiled. So I bought a pack of True next morning." 01767161-7161 (US 74702).

1975: "Considering all I'd heard, I decided to either quit or smoke True. I smoke True." (no bates) (US 4853); (no bates) (US 4939); (no bates) (US 5000) (1976 advertisement in Sports Illustrated magazine noting same); Biglan WD, 233:20-235:22.

1975: "With all the talk about smoking I decided I'd either quit or smoke True. I smoke True." (no bates) (US 87206).

1975: "With all I've read about smoking and things I decided to: 1. Play as hard as I work. 2. Cut out the heavy lunches. 3. And either quit smoking or smoke True. I smoke True. The low tar, low nicotine cigarette. Think about it." 03496228-6630 at 6268 (US 20057).

1975: "I thought about all I'd read and said to myself, either quit or smoke True. I smoke True." (no bates) (US 10447); 03061394-1394 (US 21700).

1975: "I'd heard enough to make me decide one of two things: quit or smoke True. I smoke True." (no bates) (US 87462); 01408237-8237 (US 21808); 03496228-6630 at 6269 (US 20057).

Dolan WD, 125:1-5.

2609. As a 1981 FTC Report on cigarette advertising noted, Lorillard's True advertisements "incorrectly impl[y] that when the alternatives of quitting smoking or smoking a low 'tar' cigarette are weighed, the low 'tar' cigarette is the healthier option." FTC, 1981 Report at 2-12 to 2-13 (JD 004744).

2610. Several other True advertisements from 1974-1975 emphasized True's FTC method tar and nicotine measurements:

U.S. Govt. tests show True is lower in both tar and nicotine than

> 98% of all other cigarettes sold. That means True is not only gentle on your mind, it's gentle on your taste.
>
> No other cigarette can make this statement: U.S. Government tests of all cigarettes show True is lowest in both tar and nicotine of the 20 best-selling cigarettes. In fact, True is lower than 99% of all cigarettes sold. . . . Doesn't it all add up to True?

03496228-6630 at 6272, 6274 (US 20057).

2611. A May 1987 report prepared for Lorillard, titled "AN EXPLORATORY STUDY – AN OVERVIEW OF THE TRUE BRAND," discussed smokers' perceptions of Lorillard's True cigarette. The report contained the following statements:

> Use of the True brand or consideration of it via trial is viewed as an expression of health concern. . . . Both True smokers and those who smoke other brands expressed awareness of the way True has been advertised. It was not uncommon to attribute initial trial of the brand to being attracted by that presentation of the brand. Respondents specified having noticed the emphasis on tar count and filter. . . . Based on these findings, it would appear important to continue to stress True as a low tar brand with taste, and the "specialness" of the filter, since those are clearly important factors in motivating trial, and in conversion to the brand. . . . The respondents were also asked whether they think the image of True has changed over a period of time. Most felt unable to answer this, but it was suggested that True stood alone originally, as the brand for the health concerned.

93359378-9437 at 9378, 9385, 9387, 9420 (US 57295).

**(2) Lorillard's Research on the Low Tar Cigarette Category**

2612. Lorillard's internal research documents demonstrate that Lorillard conducted research not just on individual low tar cigarette brands, but on low tar cigarettes as a category. These documents establish that Lorillard has long known and intended that its advertisements and marketing for low tar cigarettes, featuring claims of lowered tar and nicotine and "light" and

"ultra light" brand descriptors, contributed to and reinforced consumers' mistaken belief that low tar cigarettes are better for their health, and caused consumers to smoke them for this reason.

2613. A November 13, 1973 presentation by Alexander Spears, a Lorillard scientist and later Lorillard's CEO, noted in a discussion of "Health psychology" that smokers' concern about the health effects of smoking "has been used to an advantage in marketing both the KENT and TRUE brands." The document stated: "Clearly the consumer is concerned about smoking and health, and is convinced in varying degrees that smoking is a possible detriment to his health. Presently, this factor is of active interest to R&D, since it has been used to an advantage in marketing both the KENT and TRUE brands." 80634635-4642 at 4639 (US 21063).

2614. Lorillard was well aware in 1976 that consumers perceived its low tar brands as less harmful. A November 30, 1976 Lorillard memorandum from R.E. Smith to fellow Lorillard marketing executive J.R. Ave, with the subject heading "1976 Switching Study," stated:

> I share MCA's overall conclusion that the Switching Study confirms the rightness of our 5 Year Plan; focussing [sic] Company effort against smokers' health concerns. . . . This view suggests sensible positionings for those Lorillard brands that directly address smokers' health concerns. (I believe these are totally compatible with ongoing work).

03918494-8495 at 8494 (US 74777), 03296482-6544 at 6485 (US 64511).

2615. Lorillard's "CONFIDENTIAL" 1976 "DOMESTIC CIGARETTE MARKETING 5 YEAR PLAN 1976-1980" stated:

> Consumer preferences have shown a dramatic shift since World War II away from non-filter brands towards brands more responsive to the cigarette smoking and health controversy, and less harsh, filtered cigarettes, and, most recently, towards filtered brands offering low tar and nicotine.

The document further stated: "The most recent 6 year period has followed the traditional pattern in many essential characteristics . . . 2) impressive gains by brands offering a perceived solution to health concerns." 03357128-7178 at 7137 (US 85023); Orlowsky WD, 65:10-19; 65:20-66:2.

2616. Lorillard's Five Year Plan for 1977-1981 stated: "The structure of the market is changing in the direction we forecast in 1976 -- toward brands responsive to the cigarette controversy." The plan further pointed out: "The success rate of new products . . . is again on the uptrend with the emergence of products responsive to very specific and tightly focused concerns about the cigarette controversy." 904100641-0706 at 0642, 0646 (US 74853).

2617. A January 26, 1977 Lorillard memorandum from Dick Smith to J.R. Ave stated:

> The Nowland Research strongly confirms the rightness of Lorillard's marketing concentration in the area of health concern. Smokers are extremely and increasingly health concerned. And these smokers are actively interested in better ways to lessen/eliminate this concern -- while continuing to smoke. More specifically, our going projects are on target. . . . I suggest that both the Kent and TRUE Brand Groups analyze the complete Nowland Report. Our established health concern brands should be able to develop specific strategic and executional actions from this rich, diagnostic research.

01244406-4408 (US 74669); Orlowsky WD, 66:10-67:5.

2618. A June 14, 1978 Lorillard document stated:

> <u>There is a major opportunity for a brand which can simultaneously satisfy smokers and address the concerns arising from the cigarette controversy</u>. 1. Very low tar products -- line extensions and independent brands -- have been the fastest growing cigarette segment during the last two years which indicates that an ever increasing number of ‘concerned' smokers are striving to go as low in tar as possible while still getting acceptable taste. There is no reason to believe that these smokers have found their ultimate reduced tar brand. More likely, they are prime candidates to move even lower over time. Comparing 1976 with 1977 sales, the ultra

> low tar segment grew 14% and is now accounting for a total of 24 billion units. We project that by 1981, the category will increase to 47 billion units, a growth of 96%."

00138232-8233 at 8232 (US 74655) (emphasis in original).

2619. A January 31, 1980 Lorillard memorandum from Larry DuLude to fellow consumer researcher Gordon Flinn stated, under the heading "Consumer Attitudes toward Smoking": "Increasing interest in Low Tar . . . Increased number of health-concerned smokers." 01782312-2322 at 2313 (US 74959).

2620. A Lorillard document circa 1984 reported that Laurence Tisch, who served on Lorillard's Board of Directors in 1969 and 1985, and who from 1959 was the Chairman of the Board of Loew's which merged with Lorillard in 1968, stated at a New York State Department of Insurance hearing:

> Lorillard was the leader in the so-called health cigarettes, the low tar, the low nicotine cigarettes. They first introduced Kent with the micronite filter ten or fifteen years ago. It was a very successful entry because that was when the health scare first came into vogue. They followed that with the successful entry of True by Lorillard. . . . We feel that we make cigarettes that are healthier than other cigarettes -- low in tar and nicotine.

91780361-0398 at 0362-0363, 0375, 0394 (US 85024).

2621. A Lorillard document discussing its three-year plan for 1985-1987 stated, below the "Influence of Low Tar" heading: "More smokers will continue to see low tar brands as a way of dealing with the smoking controversy. Reduced Tar volume now represents 48% of the total industry, up from 37% in 1979." 80403362-3376 at 3362 (US 55377).

2622. According to Stephen Jones, a Lorillard chemist who worked for Lorillard for more than twenty-eight years and participated in the design of almost all the Lorillard cigarette

brands, including Newport, Kent Golden Lights, Kent III, Triumph, Maverick, Style, Old Gold, and Max, Lorillard's marketing plans sought to address what the company thought consumer preferences would be. Jones believed that consumers felt that there was a health advantage to smoking reduced tar or filtered cigarettes and that, by and large, smokers of all ultra low tar cigarettes, including Lorillard's True brand, perceived such cigarettes to be more healthy. Jones PD, Reed v. Philip Morris, 4/22/97, 136:5-139:21;Jones PD, Reed, 4/27/97, 141:12-141:18; 143:12-143:15.

**g. Liggett**

2623. On September 5, 2001, Dr. Anthony Albino, Executive Vice President, Strategy, Communication and Consumer Contact at Vector Tobacco, Inc., sent an e-mail to a number of recipients, including Bennett LeBow, Chairman of the Board and Chief Executive Officer of Vector Group, Ltd., and VGR Holding Inc., admitting that: "the adoption of 'light' cigarettes over the past 25 years was mainly due to the PERCEPTION of safety." VDOJ6743-6744 at 6743 (US 64727) (emphasis in original); LeBow TT, 4/4/05, 17594:24-17596:17.

2624. Liggett sold its Chesterfield, Lark, and L & M brands to Philip Morris in 1998. The Liggett Group Inc. continues to market light cigarettes under its brands Class A, Eve, Jade, Liggett Select, Montego, Pyramid, and under a generic Private Label. Bennett LeBow admitted that his company continues to market light cigarettes under these brand names because Liggett could not cease marketing light cigarettes and remain in business. LeBow asserted that every cigarette manufacturer in the industry must continue to sell light cigarettes in order to survive. (no bates) (US 93254); LeBow WD, 66:10-12; LeBow TT, 4/4/05, 17597:6-17598:16, 17600:4-17603:2.

### 6. Conclusions

2625. The evidence set forth above overwhelmingly establishes the following facts.

2626. It is clear, based on their internal research documents, reports, memoranda, and letters, that Defendants have known for decades that there is no clear health benefit from smoking low tar/low nicotine cigarettes as opposed to conventional full-flavor cigarettes. It is also clear that while Defendants knew that the FTC Method for measuring tar and nicotine accurately compared the nicotine/tar percentages of different cigarettes, they also knew that that Method was totally unreliable for measuring the actual nicotine and tar any real-life smoker would absorb because it did not take into account the phenomenon of smoker compensation. Defendants also knew that many smokers were concerned and anxious about the health effects of smoking, that a significant percentage of those smokers were willing to trade flavor for reassurance that their brands carried lower health risks, and that many smokers who were concerned and anxious about the health risks from smoking would rely on the health claims made for low tar cigarettes as a reason, or excuse, for not quitting smoking.

2627. Despite this knowledge, Defendants extensively -- and successfully -- marketed and promoted their low tar/light cigarettes as less harmful alternatives to full-flavor cigarettes. Moreover, Defendants opposed any changes in the FTC Method which would more accurately reflect the effects of compensation on the actual tar and nicotine received by smokers, denied that they were making any health claims for their low tar/light cigarettes, and claimed that their marketing for these cigarettes was based on smokers' preference for a "lighter," "cleaner" taste.

2628. By engaging in this deception, Defendants dramatically increased their sales of low tar/light cigarettes, assuaged the fears of smokers about the health risks of smoking, and

sustained corporate revenues in the face of mounting evidence about the health dangers of smoking.

* * * *

### H. At Various Times, Defendants Attempted to and Did Suppress and Conceal Scientific Research and Destroy Documents Relevant to Their Public and Litigation Positions

3863. Defendants attempted to and, at times, did prevent/stop ongoing research, hide existing research, and destroy sensitive documents in order to protect their public positions on smoking and health, avoid or limit liability for smoking and health related claims in litigation, and prevent regulatory limitations on the cigarette industry.

3864. The evidence of Defendants' suppression of research and destruction of documents consists of events which often seem to be unrelated and to lack a unifying thread. Defendants claim these facts, most of which are undisputed, amount to no more than a string of isolated instances which prove nothing. This explanation misses the point. The evidence is clear that on a significant number of occasions, Defendants did in fact suppress research and destroy documents to protect themselves and the industry. The fact that much additional evidence may be lacking because Defendants were successful in their efforts to suppress, conceal, and destroy materials that would have reflected adversely on their corporate interests is hardly a justification for ignoring the evidence that does exist. Moreover, in those instances where Defendants did successfully suppress, conceal, and destroy materials, it is most unlikely that there would be any evidence to reflect that since it would no longer exist. By destroying evidence, Defendants make it virtually impossible to know what materials existed prior to their destruction.

### 1. Suppression and Concealment of Scientific Research

3864. At various times, Defendants suppressed or otherwise concealed documents and information adverse to their public or litigation positions. For example, notes of a November 5, 1975 CTR meeting of a subcommittee of the Research Liaison Committee reveal that Ed Jacobs of Jacobs & Medinger directed that "no further formal minutes be made - also all should remove notes & previous minutes from corporate files." 1003294811-4811 (US 20171).

3865. In 1978, Sheldon Sommers, Chairman of the CTR Scientific Advisory Board ("SAB"), complained to William Gardner, the Scientific Director of CTR, that he (Sommers) was concerned that the CTR lawyers were controlling tobacco research by CTR based upon legal considerations. Sommers stated: "I think CTR should be renamed Council for Legally Permitted Tobacco Research, CLIPT for short." Indeed, the lawyer control of CTR had become so pervasive that Sommers concluded that "[m]y considered opinion is that the time for me to sever connections with CTR is near." 11319256-9256 (US 20281). He resigned as Chairman of SAB in 1980.

3866. In 1981, Robert Northrip, a Shook, Hardy & Bacon attorney who at various times represented Philip Morris and B&W, explained at a Committee of Counsel meeting that lawyers' Special Project funding was used to allow adverse research findings to be hidden from the public. 521038287-8291 at 8289 (US 30481).

#### a. R.J. Reynolds

3867. To its credit, R.J. Reynolds ("RJR") disclosed large portions of its scientific research. RJR scientists have published more than 800 manuscripts since 1980 in the fields of chemistry, biology and toxicology. Townsend WD, 196:13-16 (discussing (no bates) (JD

067970)). Likewise, Reynolds scientists have made over 800 scientific presentations at scientific conferences like the Society of Toxicology and the Tobacco Science Research Conference, among others, since 1980. Townsend WD, 196:17-20.

3868. Once the Vice President of R&D decided that scientists should do certain research, they were allowed to conduct the research, freely discuss it with each other, and freely write memoranda about it. DiMarco, Burton Dep., 8/14/01, 205:1-12; Townsend WD, 193:10-24, 194:1-7.

3869. No one at RJR prevented R&D scientists from publishing material once the Vice President of R&D decided it should be published. DiMarco, Burton Dep., 8/14/01, 205:13-18; see also Mosberg, United States Dep., 4/23/02, 45:21-48:12 ("[c]ertainly nobody impeded us from publishing, but in some instances where no new findings were observed, we didn't publish that work.").

3870. Despite that history, RJR's lawyers -- both inside and outside counsel -- had significant influence on the actual research conducted by the company. A 1985 "fact memorandum" from RJR's outside counsel, Jones, Day, Reavis & Pogue, described RJR's research and development activities. The Law Department and R&D Management exerted control to "prevent the distribution or production of certain reports," including a 1953 literature survey by Claude Teague that "indicted" cigarette smoking. 515873805-3929 at 3896-3897 (US 21922). Another company scientist, Jim Fredrickson, who was working on identifying nitrosamines (carcinogens) in smoke in approximately 1965-67, was told "not to prepare a final report on his research but merely to record the work in his laboratory notebooks." 515873805-3929 at 3898-3899 (US 21922).

3871. A December 31, 1985 memorandum from Jones Day makes clear that "[a]fter the 1964 Surgeon General's report came out, the Law Department, according to Ralph Rowland, did influence research objectives to a degree, because the lawyers did not want anyone performing research that would appear to acknowledge that cigarettes or cigarette smoke contained harmful constituents or posed a health problem." The memorandum also noted that "the Law Department did participate in setting the guidelines for testing of additives," and "[s]ince Sam Witt became General Counsel of R.J. Reynolds Tobacco ("RJRT") in 1981, the Company lawyers have played a major role in reviewing research protocols relating to smoking and health and drafting R&D mission statements . . . [I]t was understood that the lawyers controlled things in this area." The memorandum acknowledged that "the Law Department through the years has had a great deal of influence over RJRT-sponsored outside research," and that "Jacob, Medinger has played a major role in reviewing and choosing foreign research projects to be funded by RJRT." It also stated that "Peter Van Every (an attorney in the Law Department of RJRT) . . . [had a] '<u>New York Times</u> principle,' . . . by which [he meant that] 'things should not be written that could not be published in the <u>New York Times</u>.'" 515873805-3929 at 3870, 3875, 3878, 3879, 3886, 3893 (US 21922).

3872. In December 1982, RJR attorneys (both those within the company and outside) became very concerned about positions taken and statements made by Robert DiMarco, the head of RJR's Research Department. Those concerns are discussed in detail in a December 13, 1982 memorandum from Wayne Juchatz, who later would become RJR's General Counsel, to Sam Witt, who was then RJR's General Counsel. The memorandum discusses a lengthy meeting between Juchatz and DiMarco in which DiMarco stated that it was "essential" that RJR try to

develop a "less mutagenic [carcinogenic] cigarette," but said that he had been told by Ed Jacob, an outside counsel, that he could not do that. When Juchatz explained to DiMarco his concerns from a product liability standpoint, DiMarco "refused to accept it as a rationale for not doing what he felt [RJR] had an obligation to do (as a responsible manufacturer)." Juchatz stressed the need for "close cooperation" between the R&D Department and counsel. 505741150-1153 at 1150-1151 (US 23009).

3873. At that meeting, DiMarco readily acknowledged that his scientific views were in "direct contradiction" to RJR's legal positions and stated that over the prior twenty years knowledge about "cancer causation . . . had developed . . . to the point where . . . [RJR's] legal defense [that there was no causation] had been rendered (or was perilously close to being rendered) obsolete." DiMarco further told Juchatz that RJR's medical/scientific witnesses "lacked credibility and integrity." 505741150-1153 at 1151 (US 23009).

3874. DiMarco also told Juchatz that he was so concerned about the "rigid legal positions" taken by RJR outside legal counsel -- "which had restricted the proper functioning of the R&D Department" -- that he would seek "'second opinions' [either from RJR's Legal Department or, if necessary, from outside counsel of his own choosing] on past legal advice restricting R&D activities." 505741150-1153 at 1151 (US 23009).

3875. Finally, at the December 1982 meeting, DiMarco advised Juchatz that, contrary to RJR's official legal position, he would not oppose FDA regulation of the tobacco industry. Juchatz, in his memorandum, concluded that "[t]his statement reflected an insensitivity to the legal and political issues inherent in FDA regulation of our business." DiMarco also disagreed with the Legal Department's efforts to remove ammonia from the list of ingredients required to

be supplied to the Department of Health and Human Services. After further pressure from the Legal Department, DiMarco "reluctantly" agreed to the proposed removal. 505741150-1153 at 1151-1153 (US 23009).

3876. Following the December 1982 meeting between DiMarco and Juchatz, RJR attorneys, principally its outside counsel, became so concerned about DiMarco and the possibility that his views, if made known outside of RJR, would create great litigation risk for RJR, that the lawyers discussed the possibility of terminating him. The Legal Department met for a full day with outside counsel to discuss how to handle DiMarco. The lawyers concluded that "[w]e [counsel] will, therefore, be required to maintain close surveillance of [DiMarco's] R&D work in order to minimize the risk that [DiMarco's] 'beliefs' find their way into documents or projects which create unnecessary legal risks." 505741143-1147 at 1146 (US 20747); Juchatz TT, 11/18/04, 6611:12-6611:22. In a subsequent memorandum on the same issue, the lawyers reiterated that DiMarco's beliefs created legal risks for RJR:

> [W]e have advised management based upon our own and outside counsel's opinion that there are substantial litigative risks associated with having an individual as head of R&D who believes that smoking causes disease. . . . We have further advised management that while this risk can be reduced, it cannot be eliminated.

They reiterated that they would be required to "closely [monitor] what is in fact going on in the R&D department." 505745988-5992 at 5991 (US 20748).

3877. In 1982, outside counsel Ed Jacob advised RJR and its Research & Development Department that: (a) RJR could not make a "safer" cigarette, as that would create substantial legal concerns; (b) Research & Development would have to work closely with the Legal

Department if RJR were to allow Research & Development to try to develop a safer cigarette; and (c) one of the serious legal concerns that RJR had was that any work on a safer cigarette would amount to an implicit admission that existing RJR products are unsafe. Juchatz TT, 11/18/04, 6575:18-6576:25, 6583:4-6584:14, 6585:4-6586:5, 6590:19-6591:20, 6592:23-6593:21, 6594:25-6595:23, 6597:6-6598:1, 6599:8-6599:19.

3878. Despite the concerns raised by RJR counsel and what appears to be the close scrutiny of DiMarco's activities, he himself does not appear to have felt that his operation of the R&D department was compromised. Dr. DiMarco, an RJR employee for over thirty years, stated in 1999 that his discussions with RJR lawyers were simply to make sure that he was going to run the research and that the company was committed to his research. DiMarco, Falise Dep., 10/29/99, 193:18-194:14. Indeed, he emphasized that, at all times, he controlled his department. DiMarco, Falise Dep., 10/27/99, 57:25-58:22. In a 2001 deposition, Dr. DiMarco indicated that he did not recall feeling, during January 1983, that he was not in control of the R&D Department or that he was frustrated. DiMarco, Burton Dep, 8/14/01, 65:11-66:5. Dr. DiMarco did not recall an occasion on which he was told by the president of RJR what research he could or could not perform. DiMarco, Burton Dep., 8/14/01, 202:9-202:15; 203:2-17. For more detail on DiMarco, see Section V(D)(5)(b)((2))((a)), supra.

**b. BAT Group**

3879. BAT Industries plc (which became BAT plc in 1998) was a vast empire of frequently-shifting companies in the United Kingdom, the United States, and Australia. Throughout the 1980s and most of the 1990s, BAT Industries was the parent company of Defendant B&W in the United States and Defendant BATCo in the United Kingdom. BATCo is

the former parent of B&W, but was a sister corporation from 1979 to 2004. BATUS, a holding company, is now the immediate parent company of B&W. These many far-flung corporate entities, along with numerous other operating companies owned by BAT Industries, including British American Tobacco Australia Services Limited ("BATAS"), formerly W.D. & H.O. Wills, cooperated and coordinated their activities and policies to prevent documents from being discovered in United States litigation and federal regulatory proceedings, and from being disclosed to the American public.

3880. Shortly after joining B&W as Vice President of Research and Development in 1989, Jeffrey Wigand, as part of his orientation, was required to go to Kansas City, Missouri to meet for three days with lawyers from the law firm of Shook Hardy & Bacon for an orientation session. Id. at 30:16-31:2.

3881. At the session Wigand was "coached by lawyers regarding the company line on smoking and health, and addiction." The company line was "[t]hat causation had not been proven and that nicotine had not been shown to be addictive." Id. at 30:10-30:15. Wigand described the orientation session as follows:

> Lawyers were instructing me, a scientist, how to interpret epidemiological studies. In every instance, I was instructed that the evidence in the public health domain had not satisfactorily proven causation. I was told that studies that demonstrated a link between smoking and cancer were fraught with errors. Moreover, I was told that epidemiology could not be relied upon because it was just statisticians doing guess work.

Id. at 32:5-33:6.

3882. Scott Appleton, a scientist who specialized in toxicology and was hired by Wigand while he was head of Research and Development at B&W, was also required to attend a

similar lawyer training session at Shook Hardy & Bacon. Wigand WD, 34:11-35:10; 680901663-1665 (US 79219).

3883. In September 1989 the Brown & Williamson Research Policy Group ("RPG") met for several days in Vancouver British Columbia. Wigand WD, 35:21-23; see also 901096811-6811 (US 89367) (memorandum from Jeffrey Wigand to Alan Heard listing recommended agenda items for the meeting); 620202422-2432 (US 89368) (meeting agenda). The RPG was comprised of the top scientists from each of the BAT Group's cigarette companies, including B&W, BATCo, Imperial Tobacco of Canada, W.D. & H.O. Wills of Australia and others. Wigand WD, 36:1-17.

3884. Several sensitive issues were discussed at the Vancouver meeting including

> nicotine analogues, biological assays and biological testing methodologies (including NTP protocol), environmental tobacco smoke (ETS), Y-1 genetically enhanced-nicotine tobacco, how to selectively reduce the particular noxae that were in tobacco smoke, fire safe cigarettes, and FDA regulation.

Wigand WD, 39:3-40:13; see also 620202422-2432 (US 89368). Following the meeting, BATCo scientist Ray Thornton prepared a detailed thirteen-page set of minutes, "which summarized the discussion and the actions of the meeting." Wigand WD, 41:9-18; 401034784-4796 (JD 011303).

3885. The Court does not credit the testimony of either J. Kendrick Wells or Jeffrey Wigand about what happened to the Vancouver conference minutes. Wells' testimony was simply not credible and Wigand's was unreliable, contradictory, and impeached on a number of points. However, a comparison of the thirteen-page draft minutes and the three-page final minutes demonstrates that significant material was deleted from the longer draft. Compare

401034784-4796 (JD 011303) and AA0374-0374 (JD 011304).

3886. After the Vancouver conference, there was concern amongst the BAT Group executives that scientists' statements would contradict the public statements and legal positions being taken by the company. As a result, Patrick Sheehy, then Chairman and CEO of BAT Industries, ordered BAT Group lawyers to bring the scientists together for a meeting to "solidify a method by which records related to scientific meetings and scientific research would be handled in the future." Wigand WD, 54:2-55:16; 202347085-7086 (US 22032).

3887. The meeting was convened by Stuart Chalfen, the Chief Solicitor of BAT Industries. The meeting was held in New York City in January 1990 (the "NYC meeting"). It was run by Nick Cannar, head of BATCo's legal department, who also prepared the meeting agenda. 202347085-7086 (US 22032).

3888. At the meeting, BAT representatives discussed litigation concerns:

> Concern about volume of research documentation spread around the Group; Discovery; Difficulties faced by author company in explaining documents in a foreign court particularly if it is not even a party to the proceedings in which those documents are to be produced. . . .

202347085-7086 (US 22032); Wells WD, 46:1-5.

3889. The NYC meeting agenda also set forth procedures to ensure that minutes from future scientific meetings would not contain "contentious" material. The agenda states:

> 2. Improve quality of [scientific] documents by:
>
> a) Educating scientists in each research centre about document writing/document creation.
>
> b) Regular lawyer reviews and audits of scientific documents produced in each company.

c) Arrange a system to ensure that all research related conference minutes involving representatives of more than one Group company are vetted by the lawyer for the company issuing the minutes before the minutes are sent out.

202347085-7086 (US 22032).

3890. As suggested at the meeting, BAT thereafter held a series of mandatory training sessions about writing and document creation for company scientists. "The sessions were called 'caution in writing' seminars and at Brown & Williamson they were presented by lawyers, predominantly from Shook, Hardy & Bacon." Wigand WD, 59:13-23. At the seminars, scientists were instructed by lawyers "on how to sanitize the documents they created." Id. at 60:1-6. The scientists were told "how to avoid writing documents with contentious words and topics." The contentious words included words like "safer," "addictive," "disease," and "cancer." Id. at 64:15-23.

3891. As a follow-up to the New York City meeting, BAT also implemented "lawyers' reviews" whereby, company scientists could only send documents containing sensitive information to sister companies if the document was first "reviewed and approved by a company lawyer." Wigand WD, 60:7-14.

3892. As also suggested at the NYC meeting, BAT implemented a policy to have lawyers vet research-related conference minutes. The word vetting as used within the BAT Group of companies meant "[d]eliberately and consciously removing contentious and controversial information from company documents that would benefit an adversary in litigation." Wigand WD, 35:15-20. As Wigand testified:

Nick Cannar told us that before meeting minutes could be

> circulated, they would be reviewed by the lawyers and, if necessary, the lawyers would remove contentious information before the minutes could be circulated.

Id. at 61:3-6.

3893. At the NYC meeting, lawyers Nick Cannar and Kendrick Wells:

> agreed that the cost sharing agreement would be revised to specifically state that BATCo owned the documents that it created and that it could demand them back at any time. So, for example, the thought was that if lawsuits in the United States were seeking documents created by the Fundamental Research Center, then BATCo could demand all copies of the documents back from the United States and Brown & Williamson would be saved from having to produce them in litigation.

Wigand WD, 28:14-29:4.

3894. Following the NYC meeting the agreement was changed "so that now documents were the property of BATCo and BATCo could demand the return of the documents at any time." Id. at 27:23-28:2. The BAT Group companies' cost-sharing agreements were re-written to "recognize[] [each] company's claim to ownership/confidentiality of its research reports" and to provide for the "return of all copies of these [research] documents upon demand." 202347085-7086 (US 22032). "[T]he cost sharing agreement set forth an arrangement by which the various Cigarette Affiliated Companies (CAC) shared the cost for the Fundamental Research Center in Southampton, England." Wigand WD, 27:5-8, 27:9-18. In 1992, Brown & Williamson wrote BATCo a letter regarding the revised Cost Sharing Agreement, in which it stated that it would "not . . . return documents if returning the documents would be inconsistent with Brown & Williamson's discovery obligations in pending litigation." (no bates) (JE 021689 at 682508295); (no bates) (JD 012922 at 682010312-17).

3895. In a May 1991 memorandum from Kendrick Wells to Mick McGraw, B&W General Counsel, Wells wrote:

> Jeff [Wigand] believes that he now sends me a copy of all documents from BATCo . . . in the nature of meeting reports and scientific memos. He also sends appropriate scientific research reports. I told him that it was important that we had an opportunity to review the BATCo. materials. As a case in point, I recommended that we should follow up with BATCo. on statements made in a set of studies done for BATCo. at Harwell. They include statements that means are available which will remove minute foreign materials from tobacco. B&W R&D looked at this question a year or so ago and decided that no such means existed. The question could be involved in a safer product claim. Thus, we should communicate with BATCo. to discuss their assertion that such means are available.

680901663-1665 at 1664 (US 79219); see also Wigand WD, 76:25-77:28.

3896. Brown & Williamson itself suppressed certain scientific research particularly through lawyer oversight and vetting. In an August 1980 memorandum, Kendrick Wells, at that time corporate counsel to B&W, listed numerous edits that would be required before BAT scientist, Dr. Lionel Blackman could publish "Change of Stance on Public Smoking and Health," which Blackman had drafted. In justifying the edits, Wells wrote:

> The successful defense of product liability litigation and opposition to adverse legislation in the United States depends upon two essential arguments: (1) The scientific evidence does not prove a causal relationship between smoking and health and (2) the smoker voluntarily encounters the known risks of smoking.
>
> A concession by a cigarette manufacturer to the charge that cigarettes cause human disease or a statement which contradicts the concept of voluntary choice of smoking by the consumer could cripple or destroy B&W's defense to smoking and health lawsuits and opposition to legislative attacks. This would be true even though the statements were made by BAT.

680050985-1001 at 0986 (JD 053700). "Change of Stance on Smoking and Health" as originally drafted by Blackman was never released to the public. Wells WD, 21:6-8.

3897. Wells also advised Dr. Blackman to remove the statement that "cigarettes are harmful to health in proportion to delivery" from a presentation he gave to INFOTAB in 1981 called "Basic Approach to Government and Medical Authorities," because such a statement "would abandon, in effect, all substantive arguments that the relationship of smoking and health is unproven." After speaking directly to Wells, Blackman removed that language based on Wells's legal advice. 680585041-4042 (US 21006); 680585063-5064 (US 21007); 2024954637 (US 37176); 2024954638 (US 37177). No evidence was offered as to what came of this presentation after it was given to INFOTAB.

3898. B&W edited adverse references to addiction out of another BAT report written by Dr. Blackman, titled "The Controversy on Smoking and Health: Some Facts and Anomalies." By letter dated October 25, 1984, B&W attorney J. Kendrick Wells wrote BAT counsel Alec Morini that "review" of BAT publications by B&W was necessary in light of ongoing smoking and health litigation. Wells went on to provide forty-five paragraphs of revisions to Blackman's draft and a marked-up report, including:

> 2. Delete Donald Gould reference. The article identifies cigarettes as a drug.
>
> 3. Delete reference to Dr. W.S. Cain. The article identifies short terms and longer term pharmacological and physiological factors as important in the derivation of "habitual cigarette smoking. . . ."
>
> 5. Delete. The point made here might be said to run counter to arguments that cigarette smoking is not addictive. . . .

680582499-2507 at 2499-2500 (US 54052).

3899. Wells attached a marked-up copy of Blackman's report to his October 25 cover letter, where he indicated his edits and the corresponding paragraph numbers from his letter. The three paragraphs quoted above were ultimately removed from the report. 680582512-2512 (US 85396).

3900. On May 29 and 30, 1984, attorneys from B&W and BATCo held a conference on United States products liability litigation. During the course of that conference, "Project Rio," a biological testing program to develop cigarettes with less biological activity, was discussed. According to a memorandum written by Wells, the attorneys

> were able to hold significant discussions about implications for U.S. products liability litigation . . . regarding Project Rio. BAT Legal acknowledged the needs for lawyer involvement in the project and for possible restructuring, but there was not enough time to plot a course of action.

Wells considered follow-up and further summarized the meetings in a June 12, 1984 file note:

> [W]e should arrange a meeting in London with BAT Legal . . . to delineate more specific counsel to BAT, including proposals for the structure and organization of BAT programs and statements which would hold to the minimum feasible level their potential impact upon U.S. products liability litigation. . . . For example, if Project Rio must continue, restructuring probably will be required to control the risk of generating adverse evidence admissible in U.S. lawsuits.
>
> * * *
>
> Direct lawyer involvement is needed on all BAT activities pertaining to smoking and health from conception through every step of the activity.
>
> The problem posed by BAT scientists and frequently used consultants, who believe cause is proven [i.e., that smoking causes disease] is difficult.

685092972-2974 at 2973 (US 31031).

3901. Wells edited many more scientific documents to remove material that might be damaging to B&W in litigation. 680583045-3045 (US 85395); 690128746-8921 (US 25461); 680858743-8743 (US 21723); 682000188-0188 (US 89376); see also 680585135-5135 (US 22976).

3902. The Legal Department at B&W generally reviewed scientists' statements on smoking and health before they were made public. The review was conducted in part so that the Law Department could tell the scientists that these sorts of statements could have adverse consequences for the company in product litigation. Wells WD, 16:4-19.

3903. On some occasions, the legal department at BATCo similarly worked with scientists. On September 18, 1991, Sharon Boyse, Manager of the Smoking Issues Corporate Affairs Department at BATCo, wrote to G. Symmes of W.D. & H.O. Wills in Australia instructing him that the scientific content of a document prepared by the Tobacco Institute of Australia was "NOT acceptable to BAT until those changes are made!" In the letter, Boyse instructed scientists at Wills to remove any suggestion from a document that scientific articles had "claimed a statistical association between ETS exposure and the development of lung cancer." The letter went on to require removal of any suggestion that tobacco smoke contained carcinogens because the studies that suggested that tobacco smoke contained carcinogens "are animal studies. . . ." 750075351-5352 (US 16182); 304002839-2840 (US16183); 304002839-2840 (US 79027).

3904. Richard Binns, the former Manager of BATCo's Group Research & Development Centre at Southampton, complained of the expansive role of lawyers in BATCo's science, writing

that:

> I am being asked to make significant and sometimes swingeing [sic] changes in documents produced recently by R&D staff. It is suggested that this must be done by finding a "managerial explanation" for the changes, without reference to the involvement of Legal Department. I will find this impossible to do. Senior R&D staff will not be so easily deceived. Personally, I am not prepared to lie to staff for very doubtful reasons. Therefore, the current lack of clarity about the relationship between R&D and Legal Dept. has raised questions which for me are ethically disturbing, particularly if extended beyond the present localized situation.

109878083-8089 at 8089 (US 21767); Read PD, United States v. Philip Morris, 07/25/03, 157:20-159:3.

3905. As Defendants note, it is both reasonable and legitimate for lawyers to advise their clients about the potential use of documents in litigation against them. However, the totality of the Factual Findings demonstrate a pattern of behavior amongst all BAT Group Defendants in which legal considerations and lawyers' strategies dominated both the direction and disclosure of scientific research.

**c. Philip Morris**

3906. Defendant Philip Morris suppressed and concealed many scientific research documents, even going so far as to send them to a foreign affiliate in order to prevent the disclosure of documents in litigation and in federal regulatory proceedings.

3907. In 1970, Helmut Wakeham, Philip Morris's Vice President for Research & Development, recommended that Philip Morris purchase INBIFO, a research facility in Cologne Germany, arguing that Germany "is a locale where we might do some of the things which we are reluctant to do in this country. . . ." 2022244451-4453 at 4451 (US 20361).

3908. Philip Morris did in fact purchase INBIFO to conduct its smoking and health research. A 1970 memorandum from Joseph Cullman, President of Philip Morris, discusses the benefits of conducting research overseas: "The possibility of getting answers to certain problems on a contractual basis in Europe appeals to me and I feel presents an opportunity that is relatively lacking in risk and unattractive repercussions in this country." 1000216742-6742 (US 20081). In addition, "[e]xperiments can be terminated at will as required without delay." 1003123055-3094 at 3058 (US 20154).

3909. After acquiring INBIFO, Philip Morris tried to avoid any direct contact with the research results that it produced or worked on. Handwritten notes of Thomas Osdene, a senior Philip Morris research official who acted as primary liaison with INBIFO, laid out the method for handling documents related to health and smoking. His notes state as follows:

> (1) Ship all documents to Cologne. . . .
>
> (2) Keep in Cologne.
>
> (3) OK to phone & telex (these will be destroyed).
>
> (4) Please make available File Cabinet. Jim will put into shape by end of August or beginning of Sept.
>
> (5) We will monitor in person every 2-3 months.
>
> (6) If important letters have to be sent please send to home -- I will act on them + destroy.

1000130803-0803 (US 34424). Despite this process, "plenty of telexes" and "lots of communications" went back and forth between INBIFO in Cologne, Germany and Philip Morris USA in Richmond, Virginia. Farone TT, 10/7/04, 1943:18-1944:4.

3910. In 1977 in a letter to Max Hausermann, Philip Morris Vice President of Research

& Development in Switzerland, Robert Seligman, Philip Morris Vice President of Research & Development in the United States, confirmed the company's policy of prohibiting direct contact with INBIFO. Seligman wrote:

> We have gone to great pains to eliminate any written contact with INBIFO and I would like to maintain that structure.
>
> * * *
>
> Therefore, I am advising Jerry Osmalov to continue sending samples to Neuchatel for transshipment to INBIFO. If this procedure is unacceptable to you, perhaps we should consider a "dummy" mailing address in Koln for the receipt of samples. The written analytical data will still have to be routed through FTR if we are to avoid direct contact with INBIFO and Philip Morris U.S.A.

2000512794-2795 (US 20295).

3911. In the 1977 letter from Robert Seligman to Max Hausermann, Seligman discusses a letter that had breached the Philip Morris policy. Seligman suggested to Hausermann that he "retrieve [and presumably destroy] the March 24 letter Helmut Gaisch sent to Jerry, including all copies. My copy is returned herewith." 2000512794-2795 (US 20295).

3912. As recently as 1993, Philip Morris maintained a system whereby research documents were "sent to Richmond for a review and [ ] then returned to INBIFO" with all "[s]upporting data and documents . . . kept at INBIFO." 2043725390-5391 (US 20449).

3913. Philip Morris did not want "to have results of animal research in its domestic facilities -- particularly research conducted at a Philip Morris-owned lab -- lest that information get out and undercut Philip Morris' public position that cigarettes were not a health threat." Farone WD, 149:10-152:15.

3914. Dr. DeNoble was hired to establish a behavioral pharmacology laboratory at Philip Morris USA to support the nicotine analogue program. DeNoble WD, 4:23-5:2. The goal of the nicotine analogue program was to develop a substitute for nicotine that would retain the physiological and behavioral effects of nicotine on the central nervous system, specifically nicotine's reinforcing qualities, but would not retain nicotine's adverse effects on the cardiovascular system. Id. at 5:7-11; see also Section V(D)(5)(a)((3)), supra, for more detailed discussion about Philip Morris's nicotine analogue program. In connection with the analogue program, the behavioral pharmacology laboratory "needed to develop a variety of tests that could be used in the characterization of the behavioral effects of nicotine in rats." DeNoble WD, 15:13-22. These test procedures that Drs. DeNoble and Mele developed, and the results of their experiments using them, were written up in various reports. They also sought permission to submit some of their studies to various journals for publication. Philip Morris USA permitted some of these studies to be published, but forbade publication of others. For example, Dr. DeNoble published a paper, titled Behavioral Effects of Intraventricularly Administered (-)-Nicotine on Fixed Ratio Schedules of Food Presentation in Rats, which appeared in Psychopharmacology in 1982. (no bates) (JD 040124).

3915. However, Philip Morris prevented publication of DeNoble's and Mele's research results which were unfavorable to their public positions on nicotine and addiction. One of the studies that Philip Morris USA did not allow to be published demonstrated that rats will self-administer nicotine. Self-administration studies establish whether a stimulus is reinforcing. DeNoble TT, 1/6/05, 9013:8-9014:9. Given the substantial credible evidence that DeNoble's results were noteworthy and significant, the Court does not find that Philip Morris's explanation,

that it chose not to publish the report because other scientists had previously shown the same results, to be credible. Henningfield WD, 161:23-165:15.

3916. When Victor DeNoble, former Associate Senior Scientist at Philip Morris, and his fellow researcher, Paul Mele, performed research on rats demonstrating that nicotine caused self-administration and induced tolerance, they initially received Philip Morris's approval to publish their research results. However, following DeNoble's presentation of those results to Philip Morris senior management in New York City, the approval to publish was withdrawn. Farone TT, 10/7/04, 1947:19-1950:20; Farone WD, 156:3-15; Rowell TT, 3/23/05, 16645:15-16646:1, 16654:12-16655:15. DeNoble explained that it was clear from a comment made to him at the presentation that Philip Morris senior management would not allow the research results to be disclosed. Ross Millhiser, a Philip Morris executive stated: "Why should I risk a billion-dollar industry on rats pressing a lever to get nicotine?" DeNoble WD, 13:20-15:7, 22:6-25:12; Mele WD, 14:2-14:14, 20:3-22:12.

3917. Philip Morris also denied Drs. DeNoble and Mele permission to publish a paper regarding studies which demonstrated both pharmacological and behavioral tolerance to nicotine in rats. DeNoble WD, 27:1-28:13; Mele WD, 11:13-14:10; (no bates) (US 20100 at 38) (tolerance develops to the behavioral effects of nicotine following chronic administration). Tolerance can demonstrate dependence on a drug. Mele WD, 13:16-14:1. Again, the Court finds Philip Morris's claims that it chose not to publish these results because tolerance to nicotine had already been demonstrated in the same fashion and to the same degree, despite the evidence to the contrary, not credible. Henningfield WD, 161:23-165:15.

3918. Philip Morris also did not allow DeNoble and Mele to publish the results of a

study demonstrating that nicotine affects the vestibular nucleus -- the area of the brain that affects balance and coordination. DeNoble WD, 14:11-15:7. Their research demonstrated why nicotine often makes people dizzy when they first start smoking. Id. Philip Morris was the first to make this discovery, but did not allow DeNoble and Mele to publish a paper on the particular brain sites responsible for producing this effect from ingesting nicotine. Id.

3919. Patrick Sirridge of Shook, Hardy & Bacon wrote to Philip Morris's Assistant General Counsel Fredric Newman transmitting an analysis of DeNoble's published literature, unpublished manuscripts, and in-press manuscripts. The analysis concluded that

> research engaged in, as well as some possibly under consideration, by Philip Morris has undesirable and dangerous implications for litigation positions the industry takes in regards to smoking behavior. . . . In the final analysis, the performing and publishing of nicotine related research seems ill-advised from a litigation point of view. . . .

2021423403-3461 at 3422 (US 87038*); DeNoble WD, 25:2-25:12, 38:1-39:11.

3920. Ultimately, in 1984, Philip Morris abruptly, with only one day's warning, shut down DeNoble's laboratory, ordering the researchers to terminate their work immediately and to kill the remaining rats that were the subjects of ongoing research. DeNoble was informed that the lab was closed because of the threat their work posed in litigation against Philip Morris. DeNoble WD, 25:2-25:12, 38:1-39:11. William Farone, former Director of Applied Research, was told by Fred Newman, Philip Morris's Assistant General Counsel, that the DeNoble laboratory was shut down because Philip Morris wanted to bury "any research that showed smoke caused disease or nicotine was addictive." Farone TT, 10/12/04, 2091:23-2092:14; Farone WD, 156:3-15.

3921. Philip Morris's claim that shutting down DeNoble's lab and ending the research was merely a business decision is simply not credible.

3922. After DeNoble and Mele left Philip Morris in 1984, they renewed their attempts to publish their research results concerning nicotine addiction. In 1985, Philip Morris denied DeNoble the permission to publish. Notwithstanding that denial, DeNoble and Mele submitted two papers concerning nicotine addiction for publication. After the first paper was published, DeNoble received a threatening letter from Philip Morris attorneys in April 1986. In August 1986, DeNoble and Mele spoke at an American Psychological Association convention concerning other work that they had done at Philip Morris. Thereafter, in September 1986, DeNoble received a second threatening letter from Altria in-house counsel Eric Tausig. Following receipt of that letter, he called the journal to which he had submitted two papers for publication and sought to have them withdrawn from publication. He was able to pull back only one of them. To the present day, his paper on nicotine self-administration in rats has never been published in a scientific or medical journal. DeNoble WD, 39:12-45:19; DeNoble TT, 01/06/05, 9081:20-9082:14. DeNoble was released from his confidentiality agreement with Philip Morris in 1994. DeNoble TT, 1/6/05, 9043:19-23.

3923. Philip Morris's lawyers exerted significant control over research into nicotine. William L. Dunn, a Philip Morris scientist, wrote in a 1980 document titled "The Nicotine Receptor Program" that, despite the fact that the psychopharmacology of nicotine is "where the action is for those doing fundamental research on smoking," and where "most likely will come significant scientific developments profoundly influencing the industry, . . . it is where our attorneys least want us to be. . . ." 1000127789-7790 at 7789 (US 34442).

3924. According to Dunn, there were two reasons why Philip Morris's lawyers did not want nicotine research conducted. The first reason was so the tobacco companies could claim ignorance "of any relationship between smoking and disease." Such an approach was "implicit in the legal strategy employed over the years in defending corporations within the industry from the claims of heirs and estates of deceased smokers." The second reason for not engaging in nicotine research was that any action by the tobacco industry, including research, that treated nicotine as a drug "could well be viewed as a tacit acknowledgment that nicotine is a drug," which could impact any future regulation of tobacco by the government. 1000127789-7790 at 7789 (US 34422). While nicotine research was permitted, the Company did not want to "be visible about it." 1000127789-7790 at 7789 (US 34422). Because of the commercial necessity of research into nicotine, Dunn acknowledged that "our attorneys . . . will likely continue to insist upon a clandestine effort in order to keep nicotine the drug in low profile." 1000127789-7790 at 7790 (US 34422).

3925. Philip Morris consultants also suppressed certain scientific research. On January 15, 2003, in an appeal from a criminal defamation conviction, a Swiss court sustained two allegations of fraud against Ragnar Rylander, and concluded that he was a covert consultant for Philip Morris and that he had suppressed research findings that were adverse to the tobacco industry. In its findings, the court stated:

> Concerning the allegation that the respondent was "secretly employed by Philip Morris," exhibits show that he had entered into a consulting agreement with Philip Morris in 1972 and that he had not made this fact public. Indeed, . . . the respondent did everything not to let his ties to Philip Morris become publicly known in order to, in his own words, "retain as far as possible the image as an independent scientist." In addition, following the

> publication of an article in the "European Journal of Public Health," he attempted to conceal the existence of a formal contract with Philip Morris, and this led the journal's Committee on Publication Ethics to take an unfavourable decision in his regard.
>
> * * *
>
> The respondent has had frequent contacts with Philip Morris for many years. These contacts are troubling for several reasons. In 1991, within the framework of a study on respiratory diseases in children, the respondent modified a data base so that no link could be made between passive smoking and the frequency of respiratory infections. At an international conference in May 1992 he affirmed that no relation had been found between respiratory infections in children and their exposure to smoke. . . . Two months earlier, however, he had agreed to have his name on a document distributed to participants in a meeting of epidemiologists and indicating that a correlation had been found between passive smoking and the frequency of bronchitis in children.

TLT1050091-0101 at 0099-0100 (US 88744).

**d. Lorillard**

3926. At times, Lorillard suppressed scientific research on smoking and health. In 1977, Alexander Spears of Lorillard told a scientist that he would not be permitted to deliver a research paper unless he deleted data from a study related to human smoking habits. 01416267-6267 (US 20287); Spears PD, Texas v. American Tobacco, 07/24/97, 216:11-218:23.

3927. In a 1978 handwritten note related to the industry's Scientific Liaison Research Committee, Curtis Judge, Lorillard's Chief Executive Officer, complained that "[w]e have again ‘abdicated’ the scientific research directional management of the Industry to the 'Lawyers' with virtually no involvement on the part of the scientific or business management side of the business." The note further argued that a reconstituted scientific and policy leadership committee should not "report to the Committee of Counsel. . . ." 01346204-6205 (US 34532) (emphasis in

original).

### 2. Document Destruction Policies

3928. At various times, different Defendants attempted to and did destroy documents which were adverse to their public and litigation positions on smoking and health. While these efforts were often part of larger, legitimate institutional document retention policies, at other times -- as with the BAT Group -- they were clearly intended to render unavailable written materials which could prove damaging to or inconsistent with Defendants' litigation position and public relations stance.

#### a. BAT Group

3929. For decades, Brown & Williamson implemented permanent retention policies and placed "legal holds" on documents in its possession related to smoking and health litigation because of its extensive involvement in such proceedings. (no bates) (JD 012740 at 680081625); (no bates) (JD 012741 at 680260666); (no bates) (JD 012742); (no bates) (JD 012743); (no bates) (JD 011283); (no bates) (US 76154); (no bates) (JD 011288); (no bates) (JD 013217). These legal holds required individual departments, including Research & Development and Marketing, among others, to preserve documents in connection with litigation filed against the company, and they superseded all other retention policies. (no bates) (JD 011281).

3930. For example, in 1977, after receiving an FTC subpoena, Brown & Williamson employees were instructed to retain all documents responsive to that subpoena. See, e.g., (no bates) (JD 011282 at 679006817-18).

3931. In 1994, Brown & Williamson was named as a defendant in the Castano litigation and ordered to retain certain documents pre-dating March 1994. Castano v. American Tobacco,

Civil Action No. 94-1044A (E.D. La. 1994); (no bates) (JD 011288). In accordance with its policy, Brown & Williamson again issued a broad legal hold on documents as required by the Court in Castano. (no bates) (JD 011288); (no bates) (JD 012747).

3932. Despite these benign document retention policies, B&W allowed destruction of certain documents to prevent the disclosure of adverse information. For example, in a 1981 memorandum, titled “thinkpiece on additives issue,” Kendrick Wells, then corporate counsel for Defendant B&W, quoted Robert Northrip of Shook, Hardy & Bacon: "If company testing began to show adverse results pertaining to a particular additive, the company control would enable the company to terminate the research, remove the additive, and destroy the data." 682764441-4461 at 4458 (US 21030).

3933. Outside of B&W itself, BAT Group documents demonstrate that the companies’ document management policies were motivated, in substantial part, by a concern that BATCo and other BAT Group research might be attributed to B&W in smoking and health litigation in the United States. As early as 1970, attorneys at Shook, Hardy & Bacon wrote a seven-page letter to B&W's General Counsel expressing concern that BAT Group research documents would be subject to discovery and that these documents "constitute a real threat to the continued success in the defense of smoking and health litigation." 301097079-7085 at 7081 (US 46580); see also Cannar TT, 06/17/04, 260:10-262:30, 263:4-15, 264:26-265:3; 680800858-0865 (US 30917); Wells WD, 64:17-65:16; Wells WD, 5:15-6:18, 109870594-0596 (US 34873). Although the letter never instructs B&W as to what should be kept in its files, it stated that “employees in both companies [BATCo and Brown & Williamson] should be informed of the possible consequences of careless statements on this subject.” 301097079-7085 at 7085 (US 46580).

3934. On May 29-30, 1984, Kendrick Wells, Robert Northrip, David Schechter, BATUS General Counsel, BAT executives and in house attorneys, and trial counsel met in New York to discuss United States product liability litigation. 521015673-5675 (US 52687). The group noted that "developments have rendered products liability actions against tobacco manufacturers more difficult to defend in the 1980's and that adverse evidence which could be attributed to the defendants is a serious problem." 521015673-5675 at 5673 (US 52687). At that meeting, trial counsel concluded that it "is likely that statements by a tobacco affiliate of B&W would be admitted and smoking and health research done in-house or by contract by any company owned by the BAT certainly would be admissible." 521015673-5675 at 5673 (US 52687); Schechter WD, 10:3-10:9. The group also decided that "[d]irect lawyer involvement is needed in all BAT activities pertaining to smoking and health from conception through every step of the activity." 521015673-5675 at 5674 (US 52687); Schechter WD, 12:4-12:8.

3935. In February 1985, BAT Industries directed David Schechter to investigate the "attribution issue" -- whether statements and positions of affiliates of B&W could be attributable to it in litigation. Schechter WD, 12:20-14:17; 680582454-2462 (US 54049*); see also 516003172-3172 (US 21732).

3936. In 1985, Schechter retained the firm of Simpson, Thatcher & Bartlett, to explore the bases on which BAT Group research could be discovered in litigation in the United States against B&W, and on which knowledge of such research could be attributed to B&W. Schechter WD, 20:12-22:5; 301060827-0855 (US 28152).

3937. Later that year, Schechter also asked the New York firm Paul, Weiss, Rifkind, Wharton & Garrison to "consider hypothetically whether documents in the possession of B.A.T.

Industries or its United Kingdom subsidiary, BATCo[], could be discovered by a plaintiff in a U.S. lawsuit against Brown & Williamson." 521015579-5582 at 5579 (US 52686); Schechter WD, 28:15-29:17; see also Wells WD, 6:19-8:4.

3938. Paul Weiss concluded in a memorandum that "[y]ou should act on the assumption that discovery of the documents would be available." Schechter WD, 29:18-30:2; 521015579-5582 at 5579 (US 52686).

3939. Thus, by 1985, outside counsel from Paul, Weiss and Simpson, Thacher had both concluded that research reports in the possession of BAT Industries and BATCo could be discovered in litigation brought in the United States against B&W. Schechter WD, 30:18-32:5, 32:9-33:3, 33:14-20, 38:16-39:3; 521015578-5578 (US 52685).

3940. In 1985, Nicholas Cannar became Head of BATCo's Legal Department. At the direction of Richard Baker, the BAT Industries Chief Solicitor, Cannar became responsible for the document retention policies for BAT companies worldwide. Gulson WD, 22:22-24. Alison Kay Kinnard was also involved in the design and management of the document management programs. 325351561-1562-1562 (US 29245). Those programs required, in general, that all BAT Group operating companies institute a records management policy requiring destruction of documents, including research and development documents, if they had already been retained for a certain period of time. Cannar TT, 06/21/04, 340:35-341:4, 356:77-358:27, 360:1-364:6; see also 202347085-7086 (US 22032); Schechter WD, 45:11-48:10.

3941. BATCo's legal department had already become concerned, in early 1985, that the circulation of documents from its Group Research and Development Centre ("GR&DC," one of the BAT entities which held meetings all over the globe) to B&W, might expose those

documents to production in United States litigation. B&W had expressed the concern that ". . . some of the broad-ranging initiatives being pursued in [GR&DC] might be misinterpreted . . . in a way which would require [B&W] to explain why they didn't think that research was relevant to litigation in the United States" and that "the group's research effort might be misinterpreted in the context of litigation in the United States." Cannar TT, 06/21/04, 386:40-387:2, 412:35-413:12, 415:27-416:34.

3942. During the process of constructing what became the1985 Document Retention Policy, BATCo asked its outside counsel, Lovell, White & King ("Lovell"), to perform a review of BAT Group smoking and health documents located at BATCo's Southampton, England GR&DC in order "to place [it] in such a position as to be able to answer any Requests for Production or Interrogatories emanating from U.S. Courts. . . ." (no bates) (US 34839 at 107443681); 202313482-3483 (US 92077). The impact that sensitive documents might have on smoking and health litigation in the United States was a primary concern driving BAT Group document retention policies. B&W, the American company, paid for the document review at BATCo, the British company. 301156374-6374 (US 16004); 301157557-7557 (US 16005); 301156376-6376 (US 16006).

3943. On May 15, 1986, at a meeting at its research facility in Millbank, England, BATCo legal personnel instructed the leadership of the GR&DC to dispose of documents under the rubric of "spring cleaning" before the GR&DC files were copied for possible production in health and smoking litigation in the United States.

> [Nick Cannar of the BAT legal department] said that Mr. [Patrick] Sheehy [Chairman of BAT Industries] did not wish it to be seen that BATCO had instituted a destruction policy only when the

> possibility of their being involved in litigation became real and after they had instructed solicitors. Thus, it was decided that no destruction policy should be adopted, rather that R&DC [Research & Development Centre] would tidy up the loose papers held by individuals, which "spring clean" could involve the destruction of documents such as previous drafts.
>
> * * *
>
> It was agreed that such a "spring clean" of all of the loose papers held outside the official filing systems is essential to enable L.W.&K.'s [BATCo's lawyers Lovell, White & King] "task force" to carry out stages I and III (the listing and reviewing of the files).

107443680-3689 at 3682 (US 34839).

3944. During his trial testimony in this case in Australia in 2004, Cannar invoked the Australian self-incrimination statute (referred to in the Cannar transcript as "Section 128" of the Evidence Act of 1995) to avoid answering over one hundred questions relevant to his role in document management polices of BAT Group companies, including BATCo, B&W, and Wills. For example, Cannar asserted the self-incrimination privilege in response to numerous questions concerning the importance of document retention policies to BATCo and the BAT Group, the purpose of Wills's document retention policy, the circumstances leading to preparation of the Foyle Memorandum, as well as many other related topics. Cannar TT, 06/16/04, 150:11-21, 151:14-15, 151:37-152:1, 167:29-168:8; Cannar TT, 06/17/04, 194:47-195:39, 202:5-39; Cannar TT, 06/24/04, 619:15-19.

3945. Cannar's testimony in this case about his role in BAT's document management policies was remarkably evasive and uninformative. Until 2003, when he retired, Mr. Cannar worked for BAT in various high level legal and executive capacities, including serving as Head of Legal for BATCo and the Director of Legal Services for Wills. Cannar played a central role in

BAT document management projects and policies. Nevertheless, when faced with substantive and specific questions, Cannar, whose legal representation in this litigation was paid for by the BAT Group, repeatedly could not remember or refused to answer questions on the grounds that the answer might incriminate him. Indeed, Justice Brownie, the Australian court official overseeing the Cannar testimony for introduction in this case, made specific findings regarding Cannar's credibility in the context of a motion to treat Cannar as a hostile witness. In general, with respect to Cannar's testimony, Justice Brownie stated:

> I think it is abundantly clear that Mr Cannar may reasonably be supposed to have knowledge about a wide range of matters . . . listed in the letter of request and that, generally speaking, he has not been making a genuine attempt to give evidence about them.
>
> * * *
>
> He gave evidence, in a fragmented way, over four days last week . . . looking back now, and considering the transcript, it is noteworthy that he really has not said very much at all. . . .

Cannar TT, 06/21/04 order (US 16236), 3:16-21, 4:9-14. With respect to Cannar's repeated assertions against self-incrimination, Justice Brownie found the assertions "spectacularly" suspect given that when the self-incrimination claim was overruled, Cannar would simply assert a lack of memory. In this regard, Justice Brownie stated:

> some of the objections can scarcely be regarded as reasonably taken. For example, he did not commence to work for any tobacco company until 1981, but he claimed privilege against self-incrimination in respect of such matters as his graduating in law in 1969 and the details of his legal career before 1981. These are merely the most spectacularly unimpressive claims for privilege.
>
> * * *
>
> He repeatedly claimed privilege and then, upon being directed to

> answer, said that he could not remember. It was not just his asserted lack of memory that seemed to me to be significant, but rather the combination of the claim for privilege followed by a ruling that he should answer the question, followed immediately by an assertion of non-recollection.
>
> There was also the manner in which this happened repeatedly, as if he was fencing for time or delaying the inevitable or both.

Cannar TT, 06/21/04 order (US 16236), 5:1-7, 5:20-30. This Court agrees with and accepts Justice Brownie's findings. As a witness, Nick Cannar was not credible. For decades, he had worked for BAT and had every reason to lie in order to protect his client. Moreover, on the stand, he was so evasive and asserted Section 128 privilege so often that his testimony, credible or not, was of no value.

3946. In the late 1980s, executives at B&W became concerned over statements being written by company scientists in minutes of scientific meetings, as discussed in the previous section. See ¶¶3942. Andrew Foyle, a solicitor at Lovell, met with Wills's chief scientists Graham McGregor and Tas Wilson in Australia to learn how the Wills 1985 document management policy had been implemented by the Wills Research Department. McCabe at ¶ 25. Wilson and McGregor informed Foyle that unpublished enclosures to letters distributed by BAT's GR&DC had been destroyed and ". . . the 1985 retention policy had been applied and, consistent with that policy, documents would be destroyed when they reached the end of their retention period." Foyle TT, 04/28/04, 22:1-23:6, 24:9-25:11, 49:11-50:18, 57:9-20.

3947. Following that meeting in Australia and pursuant to instructions from Nick Cannar at BATCo, Foyle prepared the Foyle Memorandum in 1990, and sent it to Fred Gulson in Australia, who was Wills in-house Solicitor and Company Secretary from 1989-1990. Foyle TT,

04/28/04, 17:10-14, 18:7-19:4. Gulson was the original recipient of the Foyle Memorandum. That Memorandum included a review of Wills's 1985 Document Retention Policy in light of ongoing product liability litigation and expressed concern that discovery requests against B&W might extend to BATCo's documents. McCabe at ¶ 22.

3948. The March 1990 Memorandum written by Foyle confirmed that W.D. & H.O. Wills (Australia) Limited ("Wills"), now known as BATAS, a subsidiary of both BAT plc and BATCo, had adopted a Document Retention Policy in December 1985 with the aid of Clayton Utz, an Australian law firm, after Cannar had issued his instructions to the BAT operating companies. Foyle wrote:

> Wills' current document retention policy was introduced on the 30th December [sic] 1985 at a time when the tobacco companies in Australia anticipated the possibility of product liability litigation, although no case had actually been brought against any company. Clayton Utz [Wills's counsel] had previously been instructed to take steps to prepare the Industry, and Wills in particular, for litigation. One of their first actions was to review the document retention policy of the Company, hence the new policy.

(3/90 Foyle Memorandum excerpted in McCabe v. British Am. Tobacco Australia (Svcs.) Ltd., (2002) V.S.C. 73 at ¶ 23 (Supr. Ct. of Victoria at Melbourne Mar. 22, 2002) (Austl.), reversed on appeal; subsequent history omitted. According to Gulson, this statement from the Foyle Memorandum accords with his understanding of the genesis of the Wills Document Retention Policy. Gulson WD, 14:14-21. In addition, Gulson noted that "the facts relating to my tenure at Wills are set forth accurately," in the McCabe decisions' findings. Gulson WD, 13:19-23, 26:5-11. Upon observation at trial, the Court found Mr. Gulson's demeanor and testimony credible. His testimony was clear, internally consistent, and not impeached. Mr. Gulson had no reason to

lie and demonstrated no affirmative bias against the Defendants. In addition, it is significant that he agreed to come to the United States to be a witness in this case without any compensation, other than his travel expenses, only to face inconvenience and cross-examination. For all these reasons, the Court fully credits Mr. Gulson's testimony.

3949. Gulson explained that Wills's 1985 Document Retention Policy was comprised of two components, the written policy and the un-written purpose and application of the policy which were not reduced to paper for fear of discovery. Regarding the two distinct components of the document management policy, Gulson testified:

> The written document's primary purpose was to provide cover for the actual document destruction enterprise, to ascribe an innocent housekeeping justification for the widespread destruction of sensitive documents. The Document Retention Policy wasn't simply the written policy itself, but the corporate knowledge of how the Policy was to be applied apart from the written language. My recollection of the Document Retention Policy comes not from the written document, but how it was explained to me by Nick Cannar, Andrew Foyle, Brian Wilson, a partner at Clayton Utz, and others, rather than from the document itself, since the written document was incomplete in terms of describing the actual workings and purpose of the Document Retention Policy.

Gulson WD, 16:21-17:7, 17:24-18:6.

3950. When he received the Foyle Memorandum, Gulson sent it, at Foyle's direction, to Brian Wilson, a lawyer at the Australian law firm of Clayton Utz, for answers to the questions Foyle raised regarding the use and implementation of the Document Retention Policy. Gulson WD, 32:18-33:9; McCabe at ¶ 22. Foyle wanted Gulson to direct these questions to Wilson because:

> There were serious concerns at BATCo that Wills' Document Retention Policy might leave the BAT Group vulnerable. Foyle

> was trying to strike the proper balance between destroying more documents, thereby risking an adverse inference against the companies; and not destroying more documents, thereby risking their discovery and use against companies in litigation.

Gulson WD, 29:20-30:5. Foyle also wrote:

> For purposes of this exercise it can be assumed that, over the years, Wills has received copies of most of the sensitive documents generated by BATCo but that most of these (with the exception of the research reports) will have been destroyed as a result of the [1985] retention policy. It should also be assumed that a number of Wills employees have a detailed knowledge of the subjects to which many of the sensitive documents referred.

McCabe at ¶ 98.

3951. In the Memorandum, Foyle sought advice from Clayton Utz, the Australian law firm, which had drafted the 1985 Document Retention Policy, on the issue of whether the destruction of documents by Wills could result in a finding of adverse inference if litigation did actually commence. In the Memorandum he wrote:

> 1. To what extent is there a risk that the destruction of documents in accordance with the 1985 retention policy will cause the Court to apply the adverse inference principle, taking into account:
>
> (a) the wording of the policy,
>
> (b) the circumstances prevailing at the time it was introduced (e.g., whether product liability actions had been threatened against Wills or the industry generally),
>
> (c) the extent to which Wills will need to claim privilege for documents produced in 1985 and later, on the grounds that the documents were produced in contemplation of anticipated proceedings.

Id. at ¶ 29.

3952. Foyle was also concerned about BATCo research which was destroyed by Wills: "Might BATCO's documents be more at risk? For example might the Court order Wills to retrieve from BATCO copies of the BATCO documents destroyed by Wills?" Id. at ¶ 31.

3953. In his memorandum, Foyle expressed numerous problems with Wills's 1985 Document Retention Policy in light of anticipated litigation. His first concern was that: "(a) The wording of the policy (coupled with timing of its introduction) might lead to the inference that the real purpose of the policy was to destroy sensitive smoking and health documents." McCabe at ¶ 27. Gulson confirmed this concern as "particularly pressing . . . since the real purpose of the Policy was, in fact to destroy sensitive smoking and health documents." Gulson WD, 27:2-9.

3954. Foyle next expressed the concern that:

> (b) Aspects of the implementation of the policy might support that inference, for example the immediate destruction of the unpublished enclosures to the SRG [Wills's Scientific Research Group] letters.
>
> (c) The retention of a set of the BATCO research reports means that a plaintiff will have access to much sensitive BATCO research. The information in the reports is enough to prompt searching questions about the underlying research policy and also questions about what follow up action was taken by BATCO in the light of the research results.
>
> (d) The retention of the BATCO reports might encourage a plaintiff to seek discovery of BATCO's documents, either by asserting that Wills has control over documents in the possession of BATCO, or by using the Hague Convention. The research reports might enable a plaintiff to frame a Hague Convention request for documents with the requisite degree of specificity and/or to identify the BATCO employee from whom oral testimony is required.
>
> (e) Wills's access to the BATCO computer gives them the de

facto right to details of results of BATCO's research. The summaries of the reports which are on the database are sufficiently informative to be of real interest to a plaintiff's lawyer.

(f) The knowledge that Wills' senior scientists have of BATCO research could rule them out as a witness at any trial in Australia.

McCabe at ¶ 27. These additional concerns expressed by Foyle in his memorandum were also confirmed by Gulson, who explained that the computer link with the GR&DC in Southampton was actually severed because of BATCo's concern that its scientific documents might be made available to plaintiffs in Australian litigation. Gulson WD, 27:3-28:15.

3955. In view of all of these concerns, Foyle proposed a new document management policy for Wills, making the following observations:

1. It is understood that the destruction of documents now or in the past by Wills contravenes no law or rule in Australia and that, in that sense, Wills can do what it likes with its documents. Presumably, if a court disapproved strongly of the destruction of the documents, then it might draw adverse inferences from that fact.

2. It should be assumed that Wills' documents (what is in them and what has happened to them) will be a matter of great interest to a plaintiff's lawyer in a product liability action. How Wills responds to questions about its documents will require careful thought, especially because of the implications which the answers may have for the BAT group as a whole. It would be sensible, therefore, to assess the nature and extent of any problems which the current document retention policy may pose and to take appropriate remedial action now, rather than wait for the litigation to begin. Generally, what is needed is a strategy for handling the documents issue in litigation.

McCabe at ¶ 28; Gulson WD, 28:17-19:9. Gulson explained that when Foyle wrote in his

Memorandum -- that "Wills' documents (what is in them and what has happened to them) will be a matter of great interest to a plaintiff's lawyer in a product liability action" -- he was referring to the fact that some documents would be harmful to the BAT Group, if produced in litigation, because the "documents may raise questions regarding what happened to the other, destroyed documents." Gulson WD, 29:1-9.

3956. Finally, Foyle posed the following questions to Clayton Utz regarding the specifics of a revised document management policy:

> 3. Should changes be made to the way in which the policy is currently being applied, for example, in relation to the SRG documents?
>
> 4. What should be done about the copies of the BATCO research reports held by Wills? In this connection:
>
> (a) Would the continued retention of these reports compromise Wills position via a vis the destruction of its other [scientific] documents? This question should be answered on the basis of the information given in this memorandum on the content of the reports. If more information is needed it can be supplied by LWD [Lovell, White, Durrant]. It would be undesirable for Clayton UTZ to seek information from Wills about the reports.
>
> (b) Is there any reason why Wills should not now destroy its copies of most of the reports, if the motive for doing so were that the information in the reports is not relevant to Wills' Current "research mission"?
>
> (c) Would the termination, or the restriction, of Wills' access to the reports database on the BATCO computer cause any problems?
>
> 5. Would implementation of the proposed new retention policy hinder or help Wills' position on the documents

issue?

McCabe at ¶ 32; Gulson WD, 29:10-32:17.

3957. In a March 29, 1990 letter responding to the questions raised in the Foyle Memorandum, Clayton Utz attorney Brian Wilson wrote to Gulson:

> Wills' destruction of documents has not occurred during litigation in relation to which those documents might be relevant. If it had, that would be extremely strong evidence of an intention "to do something likely to interfere with the course of justice. . . ."
>
> The destruction has occurred, instead, in a situation where litigation has been, and still is, contemplated. But it can be said that it has not occurred only because of that fact and in order adversely to affect the litigation. This is where the wording of the 1985 retention policy statement [for which Clayton Utz had been the architect] becomes very important.

McCabe at ¶ 38 (excerpting Letter from Brian Wilson to Fred Gulson (Mar. 29, 1990)); see also Gulson WD, 33:10-20 (indicating that the text of the Wilson letter was accurately reproduced in the McCabe decision). Wilson followed this statement with a list of justifications for a document management policy -- including cost efficiency, litigation support, and sabotage prevention -- which could be offered as "clear evidence of an intention which is the complete opposite of an intention 'to do something likely to interfere with the course of justice.' This positive intention cancels out the negative impression created by destruction per se." Gulson WD, 33:10-20. The thrust of Wilson's advice was that as long as an excuse for destruction could be found, then BATCo could destroy documents without fear of an adverse inference in future litigation. Gulson WD, 33:25-34:2. Gulson believed that, in reality, the documents were actually being destroyed "due to litigation concerns," id. at 34:3-6, and the Court credits his testimony on this point.

3958. In early April 1990, Gulson arranged a meeting with Brian Wilson, John Oxland, and other lawyers from Clayton Utz to discuss their advice. 501582007-2008 (US 89419). In a letter pre-dating the meeting, Nick Cannar wrote to Gulson with a list of items to discuss during his visit including: "2. Document retention policy -- We have developed a draft research document retention policy for the B.A.T. Industries Group and a copy is enclosed. I would like to discuss this proposed policy with you and how it might be applied in Australia." 501582007-2008 (US 89419).

3959. At the meeting, Cannar, Wilson, Oxland and Gulson discussed Wills's Document Retention Policy in the context

> of a larger, BAT Group wide review of the document retention policy. All of the BAT Group companies' document retention polices were kept in lock step as much as possible, to ensure that no company would leave an opening through which damaging documents could be discovered and used against the rest of the BAT Group.

Gulson WD, 35:11-22.

3960. According to John Oxland's minutes of the April 1990 meeting, Wilson advised Wills and BATCo that Wills should "[k]eep all research docs which became part of the public domain and discover them. As to other documents, get rid of them, and let the other side rely on verbal evidence of people who used to handle such documents." McCabe at ¶ 42 (excerpting April 1990 Oxland minutes). Gulson's recollection is consistent with the meeting notes. Gulson WD, 36:7-16 ("to keep research documents that were in the public domain, and to destroy adverse research documents that the public or plaintiff's counsel would not be aware of").

3961. Wilson's recommendation was accepted and implemented by Wills. Id. at 36:16-

18. In short, it was determined that the existing "Wills Document Retention Policy should be continued, that potentially damaging documents should continue to be destroyed, and that an innocent explanation should be provided for destruction." Id. at 36:18-23.

3962. Cannar, Gulson and the Clayton Utz lawyers had another meeting that same day in April 1990. At the second meeting, the lawyers discussed the ability of potential plaintiffs to discover a database maintained by Clayton Utz for the Tobacco Institute of Australia, which included "scientific documents from [TIA] member companies, profiles of likely witnesses, [and] information on judges." Because this database was maintained by a law firm, Cannar, Gulson and the Clayton Utz lawyers concluded that the documents could be withheld on grounds of privilege and that the member companies could destroy their copies to avoid production in litigation. Id. at 38:3-43:23; 304003742-3742 (US89400); 304003686-3690 (US 89418).

3963. Following the meetings in April 1990 with Clayton Utz, Gulson wrote to S.J. Walker, a lawyer at the Australian law firm of Allen Allen & Hemsley, to seek a second opinion. Gulson sought the second opinion "[b]ecause the Document Retention Policy was a ruse." Gulson WD, 44:10-20, 32:20-24.

3964. Gulson was particularly concerned that the selective destruction of documents, which had occurred, could ultimately provide a roadmap for future plaintiffs to Wills's destruction of documents. Gulson expressed this concern in a May 16, 1990 letter to Walker: "The retention by Wills on a selective basis of certain reports may highlight the fact that other documents have been destroyed and could well compromise the position of Wills with respect to the practice and operation of the Document Retention Policy." McCabe at ¶ 46 (excerpting Letter from Fred Gulson to S.J. Walker (May 16, 1990)); see also Gulson WD, 45:14-46:2.

3965. As the foregoing Findings of Fact demonstrate, one purpose of Wills's 1985 Document Retention Policy was to destroy sensitive documents under the guise of well-accepted, good business practices. According to Gulson: "When I arrived at Wills, the Document Retention Policy had been to destroy damaging documents while keeping those that were beneficial to the company, and that remained the Policy at the time I departed Wills." Gulson WD, 47:15-17. Gulson emphasized that "[t]he Document Retention Policy wasn't simply the written policy itself, but the corporate knowledge of how the Policy was to be applied apart from the written language." Id. at 16:23-17:2.

3966. When asked to describe the Document Retention Policy, Gulson answered:

> It was the official title for what was more commonly known as the "Document Destruction Policy." The Policy was a program to ensure that all sensitive documents, all documents that if made public or discovered in litigation could potentially damage Wills, or Wills' affiliate companies in the BAT group, were sanitized.

Id. at 9:18-21. To "sanitize" Wills's documents meant to "destroy them or otherwise make them undiscoverable." Id. at 9:22-23.

3967. When asked about the purpose of the Document Retention Policy, Gulson responded that the Legal Department has responsibility for implementing it, and that

> [t]he purpose of the Document Retention Policy was twofold, to protect the litigation position of Wills, and to protect the litigation positions of other BAT Group companies, especially our US affiliate Brown and Williamson, by ensuring that potentially damaging documents would not be discovered from Australia.

Id. at 9:24-10:1-4.

3968. Gulson explained that, while it was unusual to place control and direction in the Legal Department, it

> was consistent with the purpose of Wills Document Retention Policy, since it was actually a document destruction policy. While it was important that the Document Retention Policy appear to be a rote housekeeping measure, of the kind that would normally be run by an audit or accounting department, the purpose of the Document Retention Policy was to protect Wills and the BAT Group from litigation by ensuring that potentially damaging documents were destroyed.

Id. at 12:15-24. In short,

> [t]he written document's primary purpose was to provide cover for the actual document destruction enterprise, to ascribe an innocent housekeeping justification for the widespread destruction of sensitive documents.

Id. at 16:22-24.

3969. When questioned very directly on the impact of the 1985 Document Retention Policy, Gulson confirmed that pursuant to that policy, "Wills was in fact destroying potentially damaging reports, while retaining favorable ones," although he personally never witnessed any such destruction. Id. at 45:24-46:2; Gulson TT, 2/17/05, 13824:1-6.

3970. Indeed, after the flurry of advice Gulson received in 1990 from Foyle, Wilson, and Allen Allen & Hemsley regarding Wills's Document Retention Policy, the written policy at Wills was revised only slightly "to ensure that from the outside the Document Retention Policy appeared to be an innocuous housekeeping process . . . ." Id. at 47:3-18.

3971. A primary focus of the Wills Document Retention Policy and the related policies at other BAT Group operating companies was to prevent any weak links in terms of the production of scientific documents in litigation by one BAT Group company that would come back to haunt, by attribution, another BAT Group company. The concern was explained by Wills in-house counsel, Frederick Gulson as follows:

> The central research facility for the various BAT Group operating companies around the world was located at Southampton in England. Research from Southampton would be distributed to the other BAT Group companies around the world, including Wills. In addition, other BAT operating companies had their own research departments and facilities of varying sizes. The facility at Wills was not particularly big, but there were more significant research facilities at some of the larger operating companies, including Brown & Williamson in the United States, and BAT Germany's operating company in Hamburg. The companies all shared research. If incriminating smoking and health research documents were discovered by the public or a plaintiff in Australia, not only would the documents have been shared with the rest of the BAT Group companies, it probably came from one of the other BAT Group companies. As a result, a failure by Wills to safeguard sensitive documents in Australia, would threaten BAT operating companies across the globe. It was for this reason that the Document Retention Policy received such attention.

Id. at 6:4-24, 9:24-10:16.

3972. Andrew Foyle reiterated this concern to Gulson in both conversations and in the Foyle Memorandum. Foyle told Gulson that

> the importance of having and strictly adhering to the Document Retention Policy was to prevent potentially damaging documents from being discovered that could damage not only Wills, but also its parent and sister companies, in light of Will's possession and access to documents from Southampton and elsewhere in the BAT Group. There was a particular concern that Brown & Williamson would be vulnerable in litigation in the United States, and that the documents could be very damaging for it.

Id. at 26:12-17:1.

3973. This concern was echoed in a contemporaneous letter prepared by Gulson and sent to S.J. Walker, a lawyer at Allen Allen & Hemsley. At the time Gulson wrote about:

> the potential and substantial problem that would face our major shareholder in the event that any discovery made in Australia of BATCo's research could be used by future plaintiffs in other

jurisdictions especially in the USA.

Gulson WD, 44:23-45:5.

3974. Because scientific documents were shared throughout the BAT Group of companies, Cannar and Foyle had a "grave concern" that "if a document were discovered from Wills it could be used against BATCo or Brown & Williamson or another operating company." Id. at 45:5-13.

3975. The BAT document management program taught employees that "retained documents could have an effect on litigation, potentially the outcome of the litigation." Schechter WD, 53:7-10. The program encouraged employees to "limit the creation of documents" and to "avoid retaining any document longer than was needed for the operation of the business." Schechter WD, 53:11-14.

3976. In March, 1990, Brown & Williamson implemented a new document retention policy. See, e.g., (no bates) (JD 012743); (no bates) (JD 012744). The 1990 policy set forth, among other things, the requirement that departments follow retention schedules specifying the documents that needed to be retained, the period of retention, and the types of documents that could or should be discarded. (no bates) (JD 012743); (no bates) (JD 012744). When the 1990 policy was implemented, the decision was made to not discard any document dated earlier than 1988, regardless of subject matter and regardless of whether the document had any relation to smoking and health. (no bates) (JD 012743); (no bates) (JD 012744).

3977. Under the 1990 policy recipients were permitted to discard unaltered copies. (no bates) (JD 012743); (no bates) (JD 012744). Any documents that were otherwise scheduled to be discarded under the 1990 policy had to be retained if the Law Department placed a legal hold on

them. (no bates) (JD 011288 at 334004672). In addition, all R&D reports were scheduled for permanent retention. Honeycutt, United States Dep., 4/23/02, 24:3-25:14; (no bates) (JD 012743); (no bates) (JD 012744); (no bates) (JD 013217).

3978. In 1990, B&W mandated similar training sessions. 681000002-0002 (US 88651) (memorandum from B&W President Tommie Sandefur to all B&W employees telling them that "[d]uring the fourth quarter of 1990, employee meetings will be held to discuss records management at B&W and your role in the process.").

3979. The training materials used at the document handling sessions encouraged company employees to use oral rather than written communications. Wigand WD, 67:8-23; 503119213-9241 at 9216 (US 29646*) ("Another aspect is the 'sensitivity' of what we need to communicate. This is not just a matter of sensitivity from a legal point of view but there's also a matter of commercial sensitivity. Only put it on paper if you really need to. If you are in doubt, verbal communication is likely to be best.").

3980. As part of its efforts to conceal information and reduce its litigation exposure, BATCo sought to reduce the amount of documents its employees generated. As described in its "Records Management: Creation Retention" manual, BATCo repeatedly preached to its employees to use the "mental copy" rule. The "mental copy" rule asks employees to "imagine that the memo, note or letter you are about to write will be seen by the person that you would least like to read it." The employee is then to "send a 'mental copy' of your document to a newspaper, one of your competitors, a government agency, or potential plaintiff. Now: would you still write the memo? If so -- would you still write it the same way?" 325274431-4448 at 4434 (US 87012). That same document asked employees to "Think *before* you write," and to

question "does it *really* need to be in writing to do the job?" 325274431-4448 at 4434 (US 87012) (emphasis in original); see also 321667716-7716 (US 88345); 325274431-4448 at 4433 (US 87012) ("Memos and notes can be barriers to effective communications and often need additional verbal explanation. Talking to someone face-to-face or on the phone is often the better way."); 325274431-4448 at 4435 (US 87012) ("Remember that verbal communication is best if you are dealing with a sensitive subject."); see also 503119213-9241 at 9230 (US 29646*) ("In order to help your [sic] decided how to write something, having decided it really needs to be a writing, we suggest that you use what we call the 'mental copy rule.' Imagine that what you are about to write will be seen by the person you would least like to see it. Send a mental copy (not to the real one of course!) of your record to the newspaper, to Philip Morris, to the Government or to a potential opponent in a court case.").

3981. In a 1990 B&W records management video, Tommy Sandefur states that before writing a memorandum or letter, an employee should ask "is it necessary," "where will that piece of paper end up? Would you feel comfortable if a competitor, the government or the news media saw a copy of your document?" and "does it really need to be in writing? A phone call or face-to-face meeting is usually more effective." "Verbal communication is also the best way to share sensitive or confidential information." 632150212-0222 at 0214-0215 (US 87019).

3982. At a January 1990, meeting in New York City of representatives from various BAT Group components, including B&W and BATCo, participants were encouraged to establish document retention policies that would purge company files of any documents not currently subject to a document request in ongoing litigation because of the "[d]ifficulties faced by author company in explaining documents in a foreign court. . . ." Each company was expected to

"[t]ighten the document retention policy . . . to the extent permitted by current litigation/discovery requests." 202347085-7086 (US 22032); 536489722-9722 (US 79172).

3983. On June 29, 1992, Sharon (Blackie) Boyse, a BATCo scientist, sent a facsimile to Jorge Basso Dastugue, a manager at BATCo's Argentine company Nobleza-Piccardo. The facsimile included a price quote from Healthy Buildings International ("HBI") to prepare information and materials for a public relations program on Indoor Air Quality in Buenos Aires. In the facsimile cover sheet, Boyse instructed Dastugue to keep HBI's involvement in the project quiet:

> Please also note, more importantly, that this an extremely sensitive document! HBI are [sic] currently under a considerable amount of investigation in the US about their connections with the industry. All references to companies in the quote has [sic] therefore been removed. **Please do not copy or circulate this in any way and please destroy this fax cover sheet after reading!** I know this sounds a little like James Bond, but this is an extremely serious issue for HBI.

304058260-8263 at 8260 (US 85632) (emphasis in original).

3984. In the summer of 1992, Simon Potter, an attorney with the law firm Ogilvy Renault in Montreal, which represented BAT's Canadian affiliate, Imperial Tobacco Limited, sent a letter to Stuart Chalfen, Solicitor of BAT Industries [the equivalent of General Counsel]; David Schechter, General Counsel of BATUS, which was B&W's immediate holding company; and John Meltzer, a lawyer at BAT's outside counsel Lovell, White, Durrant. The letter indicates that unless he received instructions to the contrary, Imperial Tobacco Limited planned to destroy sixty documents, including scientific studies. The letter includes a list of documents to be destroyed, including one document with the notation "not destroyed because never received by

Imperial." 202313423-3425 (US 20377); Schechter WD, 60:9-62:14; 202313418-3421 (US 92072).

3985. In an August 7, 1992 letter to Chalfen, Schechter, and Meltzer, Simon Potter confirmed that "the documents mentioned in my letter of July 30 have indeed been destroyed." 202313429-3429 (US 20378); Schechter WD, 62:15-63:15.

3986. David Schechter believed that Imperial Tobacco destroyed scientific documents in part to protect B&W in litigation, and the Court credits his statement on this point. 202313423-3425 (US 20377); 202313429-3429 (US 20378).

3987. In 1992, Graham Read, Head of Research and Development at BATCo, reported to Peter Clarke, BATCo's Solicitor, on "Imperial's access to R&D reports." Read stated that "[w]hether a requested report is faxed or couriered [from BATCo to Imperial], we attach an accompanying form seeking confirmation that it has been destroyed after use." 600232153-2154 (US 53322); Read PD, United States v. Philip Morris, 6/13/02, 59:14-67:11.

3988. The effort to sanitize the research files within the BAT Group of companies in 1990 was not limited to Wills in Australia. In 1990, Nick Cannar instructed Allison Kay Kinnard to create a program to administer document management policies at BATCo in the United States. Though he was uncertain about the destruction of research documents resulting from this program, Cannar stated that it probably occurred because ". . . that was the path we went down." Cannar TT, 6/21/04, 340:35-341:4, 356:77-358:27, 360:1-364:6.

3989. Starting in 1991, David Schechter was sent to Australia on many occasions at the request of BAT Industries's General Counsel to manage document issues in Australia. Schechter WD, 39:9-43:4. The trips were paid for by BATCo, who also paid for lawyers from Shook,

Hardy & Bacon to accompany Schechter to Australia. Id.

3990. As part of his role managing the Australia litigation, Schechter had discussions with Wills's General Counsel regarding whether Wills's documents -- including smoking and health documents Wills received from other BAT Group companies -- could be destroyed during or after trial. Id. at 42:15-43:4. Schechter played an important role in monitoring Wills's document retention policy on behalf of B&W and other BAT Group entities. Gulson WD, 49:23-4, 50:17-51:15. He communicated regularly with BAT Group executives regarding document management issues. 202215750-5750 (US 89404).

3991. From 1990 to 1996, a number of plaintiffs brought proceedings against Wills, the last one being Phyllis Cremona in 1996. In conjunction with that litigation, Wills undertook a review of its scientific documents in 1996 that led to the creation of a database of scientific documents known as the "Cremona database." McCabe at ¶¶ 59, 116. In 1996, Graham Maher, an attorney with the Australian law firm Mallesons, representing BATAS, began "to review documents which might become relevant in any future litigation. . . . Together with others, he summarized documents and had them scanned." Id. at ¶ 109; (no bates) (US 16226 at ¶ 2). As part of the effort to create the Cremona database, virtually all of the 30,000 documents identified by Wills as being potentially responsive to the Cremona litigation were imaged on computer discs, indexed, and summarized. McCabe at ¶ 112; (no bates) (US 16226 at ¶ 11). The document review also included ratings by the attorneys of each document, on a scale of one to five, according to how damaging it was likely to be to the company in any litigation, with a rating of five meaning the document was a "knockout" blow against the company. McCabe at ¶ 114.

3992. After Cremona and Harrison (another pending case) were settled in March 1998,

an existing litigation hold order requiring the preservation of documents was revoked. Id. at ¶ 128; see also 1226-1249 (US 16217); 1066-1066 (US 16218); 1294-1294 (US 16219); 1296-1296 (US 16220). Following the revocation of the hold order, Cannar concluded that "now is a good opportunity to dispose of documents if we no longer need to keep them. That should be done outside the legal department." McCabe at ¶ 128; (no bates) (US 16225 at ¶ 36). Cannar instructed longtime Wills employee Mal Nicholson to take the position of Records Manager and entrusted him with the responsibility for implementing the destruction policy. McCabe at ¶ 128; (no bates) (US 16225 at ¶ 36).

> For the next three months, Nicholson was engaged in the implementation process. The process did, in fact, involve lawyers, but they were lawyers from Mallesons, who reviewed all documents which had been collected for Cremona and Harrison, and once they confirmed that documents had passed the retention dates then they were destroyed.

McCabe at ¶ 129.

3993. During this time, Robyn Chalmers, outside counsel for Wills with the firm Mallesons, advised Wills:

> I confirm that there is no specific obligation on you to retain documents for the purposes of legal proceedings where no such proceedings have been commenced. You are entitled to destroy any documents subject to the legislative requirements but as you have been advised previously, the court may draw an adverse inference from the destruction of such documents, depending on the circumstances of the destruction. Moreover, you may be required to produce any copies retained where originals are destroyed or to give oral evidence regarding the nature and content of the original documents. Arguments in your defence where records have been destroyed would include compliance with the legislative retention periods and a necessity to maintain your archives within responsible limits, given the administrative and storage costs of keeping a large quantity of data.

McCabe at ¶ 137; PMV0010213-0214 (US 88753). Despite Chalmers's advice, the document destruction went forward. McCabe at ¶ 139.

3994. Testifying in McCabe, Maher admitted that the effect of the policy was not only to destroy the documents but to obliterate knowledge of the fact of their prior existence. McCabe at ¶ 160. Maher's testimony confirmed that "[t]here was a sense of urgency" and that "the department managers were told they had to confirm compliance with the policy by 15 April 1998." Id. at ¶ 154; 1066-1066 (US 16218); 1296-1296 (US 16220). "The process of destruction of documents in which the defendant engaged included destruction of CD Roms on which they were all imaged." McCabe at ¶ 160. Chalmers confirmed that "the only copies of the Cremona database (one held at Wills and one at Mallesons) were destroyed." McCabe at ¶ 163.

3995. It is patently clear from the extensive Findings of Fact set forth herein, that, in the words of Frederick Gulson, Wills's in-house counsel, the 1985 Document Retention Policy which was drafted for Wills, but in fact protected all BAT Group affiliates, subsidiaries, sister and parent corporations,

> was a contrivance designed to eliminate potentially damaging documents while claiming an innocent "housekeeping" intent. . . . The whole purpose was to keep evidence out of the courts.

Gulson WD, 19:18-21. Moreover, it is also patently clear that the Foyle Memorandum, which purported to re-examine the effectiveness of that 1985 Policy, was intentionally drafted to further its purposes and to ensure that it was adapted to the demands of an ever-more threatening litigation environment.

3996. Finally, members of the BAT Group, in furtherance of the Policy's purposes,

destroyed documents, routed them from one country or BAT facility to another, erased a useful litigation database as well as the fact that the documents it contained had ever existed as soon as the pre-existing judicial hold was lifted, and constantly exhorted their many employees to avoid putting anything in writing. All these activities were taken for one overriding purpose -- to prevent disclosure of evidence in litigation.

**b. R.J. Reynolds**

3997. At times, RJR attempted to and did destroy documents to protect its position in litigation. In 1969, RJR's research department confirmed to the legal department that it did

> not foresee any difficulty in the event a decision is reached to remove certain reports from Research files. Once it becomes clear that such action is necessary for the successful defense of our present and future suits, we will promptly remove all such reports from our files.

500284499-4499 (US 21677).

3998. The document, titled "Invalidation of Some Reports in the Research Department," also states:

> As to reports which you are recommending be invalidated, we can cite misinterpreting of data as reason for invalidation. A further reason is that many of these are needless repetitions and are being removed to alleviate overcrowding of our files.
>
> As an alternative to invalidation, we can have the authors rewrite those sections of the reports which appear objectionable.

500284499-4499 (US 21677).

3999. In 1991, at the same time or shortly before the FTC initiated proceedings against RJR's Joe Camel advertising campaign, RJR persuaded employees of the advertising agency of Young & Rubicam to destroy documents concerning the Joe Camel advertising campaign with

the intent to prevent the documents from being available for use in the FTC's proceedings. This plan was confirmed in a November 1, 1991 facsimile cover sheet and letter sent from Mark Morrissey of Young & Rubicam to RJR stating, "[a]s we discussed . . . [t]his is what I'm going to destroy. . . . Also, under our current scrutiny, a wise move to rid ourselves of developmental work!!" The letter set forth a list of documents related to the Joe Camel campaign that were destroyed. 507647971-7975 at 7971 (US 51232*). Edmund Leary, the recipient of this document, confirmed that this memorandum related to the destruction of materials that were not going to be pursued in brand marketing. Leary, United States Dep., 5/2/02, 75:16-20.

### 3. Improper use of Attorney-Client and Work Product Privileges

4000. At various times during which litigation and federal regulatory activities were pending, Defendants improperly sought to conceal research material behind the attorney-client privilege and the work product doctrine in order to avoid discovery. To accomplish that purpose, Defendants' lawyers exercised extensive control over joint industry and individual company scientific research and often vetted scientific documents.

4001. For example, correspondence with an institute or an individual regarding CTR special projects was not turned over to CTR, but was instead kept at the law firm generating the letters. Moreover, Don Hoel of Shook, Hardy & Bacon believed that such correspondence was never even provided to CTR nor produced in any litigation. Hoel PD, United States v. Philip Morris, 06/27/02, 81:10-82:9.

#### a. BAT Group

4002. Beginning in at least 1965, B&W and BATCo began their efforts to keep scientific research from disclosure. These efforts included sending smoking and health

documents outside the United States to foreign affiliates to prevent their disclosure in U.S. litigation and in regulatory proceedings. 107443680-3689 at 3682 (US 34839). B&W and BATCo also attempted to create improper attorney-client privilege or work product protection over documents through various means, including routing them through lawyers, maintaining scientific materials in lawyers' files, and indiscriminately marking them as "privileged and confidential" or with other similar designations.

4003. In a January 17, 1985 memorandum, titled "Document Retention," Kendrick Wells directed members of the Research & Development Center to collect certain documents he identified on an attached list relating to the behavioral and biological studies area for shipment to BATCo. Wells directed Earl Kohnhorst, Vice President of Research, Development, and Engineering, to tell the research personnel that the removal of the documents "was part of an effort to remove deadwood from the files and that neither he nor anyone else in the department should make notes, memos, or lists." Wells specifically explained to Kohnhorst that "the 'B' series are 'Janus' series studies [a program of biological research on the effects of smoking, which showed tumor growth in animals] and should also be considered as deadwood." 680530888-0890 at 0888-0889 (US 21772); see also Wells WD, 40:1-41:15. Despite the instructions, it appears that these documents were not actually destroyed. Wells TT, 2/3/05, 12057:23-12058:18; Appleton WD, 38:3-39:13.

4004. On February 17, 1986, Wells sent a memorandum to Ernest Pepples, B&W's General Counsel. The memorandum established procedures to limit records relating to health and science research conducted by B&W's sister companies from entering the country even though the BAT Group operating companies, including Defendants B&W and BATCo, were part

of a cost-sharing agreement that funded the research. The established policy limited the documentation sent to the United States to "concise reports, estimated to be about one-half page in length, twice each year. . . . [T]he brevity of the reports will reduce the potential for receipt by B&W of information useful to a plaintiff. . . . " This memorandum indicated that the B&W lawyers did a detailed analysis of each of the projects and ultimately either approved or disapproved of receipt of information related to each project. 680582253-2257 at 2253 (US 21004). Again, it appears that this plan was never implemented. Wells TT, 2/3/05, 12059:20-12060:10.

4005. At the same time that Wells was attempting to limit the entry of sensitive BAT research materials into the United States, BATCo lawyers Anne Johnson and Nick Cannar were reporting on the same sensitive issues to BATCo executive Eric Bruell. In a February 26, 1986 memorandum to Bruell, Johnson and Cannar noted the “fundamental differences between BATCo and B&W” arising out of both (1) “differences in the legal situation” and (2) “differences in their operating responsibilities.” Cannar stated that B&W was urging BATCo to adopt the position that "decisions to undertake research should be managerial decisions not scientific decisions"; that "smoking and health research should not be undertaken"; and that "information/document management distribution should be kept to a minimum to avoid documents becoming available to [a] plaintiff in litigation." 109870594-0596 at 0594-0595 (US 34873); see also 682003345-3360 (US 88344*).

4006. As part of the effort to avoid documents being made available in litigation, BAT lawyers vetted scientific documents. On September 21, 1994, BATCo attorney H.A. Morini sent a note to Dr. Lionel Blackman, then Director of Research at BATCo, regarding a conversation

with Ernest Pepples about the procedure for communications between B&W and the BATCo research department. Morini instructed Blackman that "'[c]ontentious' items emanating from GR&DC, particularly in regard to biological activity should be given legal clearance before dissemination" and that "transmission to B&W should be through me to Pepples thus maintaining the legal privilege -- 'attorney work product.'" Morini also advised that "[n]on 'contentious' issues can be sent direct from GR&DC to B&W care of Gil Esterle." Esterle was a B&W scientist. 503114322-4322 (US 21695).

4007. Graham Read, employed by BATCo in its research area since 1976 and head of research and development at BATCo from 1992 to 1998, confirmed that, at least twice during his tenure with the company, scientists were required to clear their documents through the legal department before the documents could be circulated or distributed. According to Read, the reason for the clearance process was the "clearly very substantial legal environment, legal issues occurring in the US." Read PD, United States v. Philip Morris, 07/25/03, 82:19-88:2, 93:21-95:1, 103:9-106:4, 107:20-108:10; 109870722-0723 (US 34874); 516003171-3171 (US 20872); 516003172-3172 (US 21732); 516003173-3174 (US 22076).

4008. Additionally, BAT lawyers protected sensitive documents with improper use of privilege. For example, in 1975, BATCo Secretary P.J. Ricketts issued a document encouraging employees to give documents and information to attorneys in an attempt to create privilege where none existed. Ricketts advised:

> In most cases information which has been given and papers and documents which have been physically handed over to the Company Solicitor will be privileged: a result of which he will not be forced to disclose any documents etc., to these authorities unless in exceptional circumstances, he is required to do so by Court

> Order. Privilege extends only to the documents, papers etc., actually in the possession of the Solicitor and not to any copies.
>
> * * *
>
> Legal Department should, therefore, be informed and all relevant papers handed over to the Company Solicitor immediately if interest is shown by an outside authority in any matter which has been the subject of these special procedures.

Documents subject to these "special procedures" included "questions of product liability." 107468159-8160 (US 34847) (emphasis in original).

4009. In the late 1970s, B&W developed a mechanism to prevent smoking and health documents generated by its research facility in Southampton, England from becoming discoverable in litigation in the United States. The mechanism involved utilizing a blanket designation that all scientific documents were created "for defense of potential litigation"; maintaining control of the documents by the legal department; and disseminating the documents to scientists only after prior approval by the legal department. In a June 1979 memorandum, B&W Assistant General Counsel for Product Litigation Kendrick Wells stated that

> [c]ontinued Law Department control is essential for the best argument for privilege. . . . The general policy should be clearly stated that access to the documents and storage of the documents is under control of the Law Department and access is granted only upon approval of request.

680585391-5392 (US 21526).

4010. At the time this memorandum was written, a scientist at B&W by the name of Jim Rosene was already holding "sensitive" materials in his office rather than sharing them with other scientists at B&W. Among the materials sequestered by Rosene were the Janus studies, which demonstrated tumor growth in animals as a result of exposure to cigarette condensate. Id.; Wells

WD, 8:18-10:13.

4011. Wells wrote a second memorandum in November 1979 outlining a plan to "afford protection against discovery" of scientific documents that demonstrated a link between smoking and health problems by falsely designating them as work product prepared in anticipation of litigation. In that memorandum to Ernest Pepples, B&W's Vice President of Law, Wells outlined a plan for routing all scientific documents from BATCo through a B&W scientist designated as an agent of the General Counsel. The scientist would "separate reports which were relevant to smoking and health, or otherwise sensitive for special handling" and the documents "designated as sensitive" would be "sequestered." Moreover, the plan specifically provided that "in the operational context BAT would send documents without attempting to distinguish which were and which were not litigation documents." 521016231-6232 (US 20886); 680585389-5392 (US 21008). Ernest Pepples, B&W Vice President for Law, responded to Wells's memorandum by writing the word "agreed" on the memorandum along with his initials ("E.P.") and the date ("11-19-79"). 521016231-6232 (US 20886); Wells WD, 13:15-14:4.

4012. In January 1985, at the request of Pepples, BATCo instituted a new policy which required that BATCo send "contentious" research and development reports to Robert Maddox, an attorney in private practice in Louisville, Kentucky, where B&W's headquarters is located, rather than to scientists at B&W. The instructions stated that "[t]he recipient list must not contain the name of any B&W person, nor that of Maddox or of his company." 107444869-4869 (US 34840); 107444871-4871 (US 20002); 107620309-0310 (US 34853); 503128498-8499 (US 50315); 109745204-5206 at 5206 (US 26342); 109745207-5207 (US 26343); 109745208-5208 (US 26344); 109745211-5212 (US 26345); 109745213-5213 (US 26346); 109745214-5215 (US

26347); Brookes PD, United States v. Philip Morris, 05/02/02, 120:12-121:7; Wells WD, 38:10-39:22; 685092972-2974 (US 31031); 521015673-5675 (US 52687).

4013. In a handwritten letter attributed to Richard Binns, the former Manager of BATCo's Group Research & Development Centre at Southampton, he discusses BATCo's practice of routing scientific research to B&W through attorney Robert Maddox: "Report -- stopped sending direct to B&W in Jan. Maddox farce. B&W withdrawn from circulation lists (but get 2 copies)." 109878083-8089 (US 21767); Read PD, United States v. Philip Morris, 07/25/03, 181:22-184:11, 186:8-189:21; Read WD, 57:3-11; Read TT, 03/22/05, 16442:22-16443:17, 16445:13-16447:2, 16448:11-16453:1. Another document -- from a Research & Development file used by Binns at the Southampton facility -- addresses document circulation relating to B&W, and states that:

> Generally, during the Barclay investigation some years ago we sent all correspondence to E. Pepples marked 'Attorney privileged'" Today, we seem to have a "mail drop" which is only slightly less obvious than Russians leaving microdots in matchboxes on Hampstead Heath. Why not continue the "Attorney privileged" route.

102880241-0259 at 0253, 0255-0259 (US 26242). No evidence was presented as to whether B&W ever claimed attorney-client or work product privilege over those documents routed through Maddox.

4014. On March 21, 1988, Andrew Foyle, with BATCo's outside counsel Lovell, wrote to Ray Thornton, head of research at BATCo, regarding a collection of scientific evidence related to Buerger's disease. In an attempt to create lawyer-client privilege, Foyle wrote that

> [b]ecause correspondence on the subject of Buerger's disease exchanged between you and your colleagues in other companies

> might not be privileged, it is important that the contact between the scientists should be routed through the lawyers.

300517039-7040 (US 16025); 300517039-7040 (US 16118). Foyle admitted that, in fact, ". . . if Ray Thornton wanted information from another company, . . . that he would tell us, and Lovell would make the necessary enquiries." Foyle TT, 04/27/04, 89:2-8, 100:8-105:7. According to Cannar, this seemed "to be a perfectly normal way to gather evidence for a piece of litigation and to help prepare a defence to litigation." Cannar TT, 06/23/04, 526:20-527:23.

**b. R.J. Reynolds**

4015. Defendant RJR also improperly used the attorney-client privilege for its research documents.

4016. For example, in an attempt to create attorney-client privilege over records received by RJR from CTR in the normal course of its business, in 1983, RJR decided to "remove CTR related smoking and health materials from our premises for legal reasons." They were sent to the law firm of Jacob, Medinger & Finnegan via a former RJR scientist Frank Colby, who was leaving the company to work at the law firm. Horrigan PD, United States v. Philip Morris, 10/25/01, 36:11-40:13; Long PD, United States v. Philip Morris, 10/18/01, 46:6-47:19; 506050931-0935 (US 77438).

**c. Liggett**

4017. Liggett also created mechanisms by which improper and unwarranted attorney-client privilege or work product protections were invoked for documents that it believed would likely be sought in litigation and would provide information to the public on the adverse impact of smoking on health.

4018. In 1978, despite the scientific nature of Project XA, Joseph H. Greer, Liggett's General Counsel, ordered that all documents related to it be sent to him or a legal department staff member. The project was put under the control of the Legal Department. In 1979, Liggett Vice President, R.B. Seidensticker, followed up on Greer's earlier directive related to Project XA. By this time, the project had become formally known as the "Law Department's XA Project." Seidensticker asked Greer to

> please issue a memorandum to those concerned requesting that any materials which have not already been turned over to the Law Department related to XA, be it financial, scientific, production or marketing, should be transferred to the Law Department no later than Thursday, June 28.

LG2005942-5942 (US 21527).

4019. During the 1990s, Liggett scientists were directed to label their work as privileged and confidential in order to prevent its discovery in civil litigation. As stated by Liggett's Manager of Science Issues,

> we had become sensitized to labeling a lot of documents privileged and confidence [sic] without thinking[,] it was kind of just a matter of fact thing to do. . . . [M]ost of the documents that we put out, I think, are always subject to discovery. And not knowing exactly where -- where this was gonna go, it was just considered almost standard practice to do that.

Dietz PD, United States v. Philip Morris, 07/01/02, 150:3-155:12; see, e.g., LWDOJ9290576-0582 at 0576 (US 21217); see also Dietz PD, United States v. Philip Morris, 05/29/03, 96:24-107:16.

**d. Findings by Other Courts**

4020. Several courts, and the Special Master in this case, have ruled that Defendants

have attempted to designate documents as privileged despite there being no valid basis for assertion of the privilege, or that the claimed privilege was inapplicable due to the crime-fraud exception, or that the claimed privilege was lost as a result of its abuse.

4021. Earlier in this case, the Court adopted in its entirety the findings of Report & Recommendation #146, in which the Special Master found that "Brown & Williamson made efforts not to physically receive smoking and health research of which it was otherwise aware in order not to have to disclose such information and threaten its litigation." United States v. Philip Morris, No. 1:99-cv-2496 (D.D.C. Feb. 23, 2004) (order #499 adopting Report & Rec. #146). The Special Master further noted that BATCo's participation in this fraud was engineered by routing documents to B&W through outside attorneys rather than to B&W itself. United States v. Philip Morris, No. 1:99-cv-2496 (D.D.C. Feb. 5, 2004) (Report & Rec. #146 at 79, adopted by order #499).

4022. Again in this case, the Special Master, in Report & Recommendation #155, concluded that:

> legal advice was sought ("Foyle . . . wrote a memorandum about the Document Retention Policy describing what he found, and effectively inviting Clayton Utz to go back to the drawing board and destroy more documents"), legal advice was given ("Wilson . . . proposed a strategy for handling the documents issue . . . its purpose was to get rid of all the sensitive documents, but do so under the guise of an innocent house keeping arrangement . . ."), and legal advice was followed ("Cannar ordered that Wills adopt the strategy proposed by Wilson").

United States v. Philip Morris, No. 1:99-cv-2496 (D.D.C. April 14, 2004) (Report & Rec. #155 at 40-41, quoting Gulson Aff. at ¶¶ 20, 21, 27). The Special Master further concluded that there was

> credible evidence to show that counsel was consulted with the intent "to destroy, create privilege over, or remove from the company's control, documents belonging to [Wills's] overseas affiliates" in order "to get rid of everything that was damaging in a way that would not rebound on the company or the BAT group as a whole."

Id. at 41 (quoting Gulson Aff. at ¶¶ 24, 25).

4023. In April 1997, the Florida Circuit Court upheld a special master's ruling that lawyers for Defendants American, Reynolds, B&W, BATCo, Philip Morris, Liggett, Lorillard, CTR, and the Tobacco Institute "undertook to misuse the attorney/client relationship to keep secret research and other activities related to the true health dangers of smoking." Florida v. American Tobacco, Civ. Action No. CL 95-1466 AH (Palm Beach Cty. Fla., filed Feb. 21, 1995).

4024. In Minnesota v. Philip Morris, the court struck claims of attorney-client privilege as a result of continued and blatant disregard of court orders, the authority of the court, and the judicial process by B&W and American. State of Minnesota v. Philip Morris, No. C1-94-8565, 1998 WL 257214, at *9 (Minn. Dist. Ct. Mar. 7, 1998), mandamus denied sub nom., State by Humphrey v. Philip Morris, No. CX-98-414 (Minn. App. Mar. 17, 1998), petitions for further review denied sub nom., State v. Philip Morris, Nos. CX-98-414, CX-98-431, 1998 WL 154543 (Minn. Mar. 27, 1998), stay denied, 523 U.S. 1056 (1998) ("Minnesota v. Philip Morris").

4025. In adopting the Report and Recommendation of the Minnesota Special Master, Judge Kenneth J. Fitzpatrick ruled that BATCo and B&W (among other defendants)

> have been found to have committed numerous abuses of privilege and certain violations of Court Orders and the Rules of Court. . . . The record supports the factual findings of the Special Master. Application of the law of privilege, and the crime-fraud exception were properly applied by the Special Master.

Minnesota v. Philip Morris, No. C1-94-8565 (Minn. Dist. Ct. Dec. 30, 1997).

4026. In Minnesota v. Philip Morris, the court found that Defendants Philip Morris, RJR, B&W, BATCo, American, Lorillard, CTR, and the Tobacco Institute "claimed privilege for documents which are clearly and inarguably not entitled to protections of privilege;" "that many documents examined contained nothing of a privileged nature, establishing a pattern of abuse;" and that these Defendants "have been found to have committed numerous abuses of privilege." Based upon the "intentional and repeated misuse of claims of privilege [which are] intolerable in a court of law," the court found that "an appropriate sanction for such abuse is release of all documents for which privilege is improperly claimed." The court also adopted the special master's findings that for several categories of documents, including scientific reports, the crime-fraud exception to the attorney-client privilege applied. Minnesota, 1998 WL 257214 at *9.

4027. In Washington v. American Tobacco, the court issued several rulings in which it determined that numerous documents for which Defendants American, B&W, Liggett, Lorillard, Philip Morris, Reynolds, CTR, and the Tobacco Institute had asserted privilege were subject to the crime-fraud exception and were therefore "de-privileged." The bases for the findings included "that defendants attempted to misuse legal privileges to hide research documents;" "that attorneys controlled corporate research and/or supported the results of research regarding smoking and health;" "that the industry, contrary to its public statements, was suppressing information about smoking and health;" and "that Special Account #4 was used to conceal problematic research." Washington v. American Tobacco, No. 96-2-15056-8 SEA (King Cty. Sup. Ct. 1998).

4028. In Sackman v. Liggett Group, the court found that attempts by Liggett, Philip

Morris, B&W, Reynolds, Lorillard, and CTR to designate CTR Special Project documents as privileged was inappropriate. 173 F.R.D. 358, 362-64 (E.D.N.Y. 1997). The court concluded that, despite lawyer involvement in Special Projects, the documents were not privileged because they were prepared to further the public relations position of the tobacco manufacturers and that any usefulness in litigation "was merely an incidental benefit." Sackman, 173 F.R.D. at 363.

4029. The court in Burton v. R.J. Reynolds found that numerous documents identified as privileged by Reynolds and American were in fact not privileged, including memoranda relating to research and development, letters from outside counsel on scientific research, literature reviews prepared by scientists at the direction of counsel, minutes of research-related meeting, and notes made by employees at industry meetings on smoking and health research. 170 F.R.D. 481, 490 (D. Kan. 1997); Burton v. R.J. Reynolds Tobacco, 167 F.R.D. 134, 142 (D. Kan. 1996).

4030. In Carter v. Brown & Williamson, the court found that even if a privilege existed, an issue that the court did not reach, the crime-fraud exception applied to certain B&W documents (the Merrell Williams documents). Carter v. Brown & Williamson, Case No. 95-00934 CA (Duval Cty. Cir. Ct., Fla., Tran. July 26, 1996, at 1329-32).

4031. In Haines v. Liggett Group, 140 F.R.D. 681, 689 (D.N.J. 1992), vacated on procedural grounds, 975 F.2d 81 (3rd Cir. 1992), the court, following an in camera review of 1,500 documents, confirmed "plaintiff's contentions of the explicit and pervasive nature of the alleged fraud by defendants [Liggett, Lorillard, Reynolds, Philip Morris, and the Tobacco Institute] and defendants' abuse of the attorney-client privilege as a means of effectuating that fraud." Specifically, the court found "that the attorney-client privilege was intentionally employed to guard against . . . unwanted disclosure." Haines, 140 F.R.D. at 684. Finally, the

court stated that defendants and their lawyers "abused the attorney-client privilege in their efforts to effectuate their allegedly fraudulent schemes." Id. at 695.

4032. In (Re Mowbray) Brambles Australia Ltd. v. British American Tobacco Australia Services Ltd. [2006] NSWDDT 15, at Par. 56, 57, the Dust Diseases Tribunal of New South Wales concluded, after considering evidence that included the trial testimony of Frederick Gulson in the present litigation, that "BATAS in 1985 drafted or adopted the Document Retention Policy for the purpose of a fraud. . . ."; that "[t]he terms of the policy would appear to be so contrived that BATAS may secure legal sanction for the stated policy, while nevertheless selectively destroying prejudicial documents"; and that BATAS' communications to its lawyers made for the purpose of obtaining advice about document destruction under the 1985 Document Retention Policy "were communications in furtherance of the commission of a fraud. . . ."

**4. Conclusions**

4033. The foregoing Findings of Fact demonstrate that, over the course of approximately fifty years, different Defendants, at different times, took the following actions in order to maintain their public positions on smoking and disease-related issues, nicotine addiction, nicotine manipulation, and low tar cigarettes, in order to protect themselves from smoking and health related claims in litigation, and in order to avoid regulation which they viewed as harmful: they suppressed, concealed, and terminated scientific research; they destroyed documents including scientific reports and studies; and they repeatedly and intentionally improperly asserted the attorney-client and work product privileges over many thousands of documents (not just pages) to thwart disclosure to plaintiffs in smoking and health related litigation and to federal regulatory agencies, and to shield those documents from the harsh light of day.

4034. While it is true that some of these efforts were unsuccessful and some of the elaborate document "retention" policies were either not fully implemented or not implemented at all, the fact remains that many were fully complied with. Consequently, we can never know the full extent of the evidence destroyed and lost to public view.

* * * *

## CONCLUSIONS OF LAW

## VII. DEFENDANTS HAVE VIOLATED 18 U.S.C. 1962(c)

### A. Introduction

The United States established by a preponderance of the evidence that Defendants and others comprised an association-in-fact enterprise ("Enterprise") and that each Defendant participated in the conduct, management, and operation of the Enterprise through a pattern of racketeering activity in violation of 18 U.S.C. § 1962(c); see, e.g., Sedima v. Imrex Co., 473 U.S. 479, 491 (1985); Yellow Bus Lines, Inc. v. Drivers, Chauffers & Helpers Local Union 639, 913 F.2d 948, 954 (D.C. Cir. 1990); United States v. Local 560, Int'l Bhd. of Teamsters, 780 F.2d 267, 280 n.12 (3d Cir. 1985). Section 1962(c) provides:

> It shall be unlawful for any person employed by or associated with any enterprise engaged in, or the activities of which affect, interstate or foreign commerce, to conduct or participate, directly or indirectly, in the conduct of such enterprise's affairs through a pattern of racketeering activity or collection of unlawful debt.

18 U.S.C. § 1962(c). The United States has proven this violation by establishing each of the following elements:

- The existence of an enterprise;
- The enterprise was engaged in, or its activities affected, interstate or foreign commerce;
- Each defendant was employed by or associated with the enterprise;
- Each defendant conducted or participated, directly or indirectly, in the conduct of the affairs of the enterprise;
- Each defendant committed at least two acts of racketeering within 10 years of one another; and
- The racketeering acts constitute a pattern of racketeering activity.

See, e.g., Sedima, S.P.R.L. v. Imrex Co., 473 U.S. 479, 496-97 (1985); United States v. Hoyle, 122 F.3d 48, 50 (D.C. Cir. 1997) (listing elements); United States v. Philip Morris USA, 316 F. Supp. 2d 13, 16 (D.D.C. 2004).

All the alleged predicate racketeering acts in this case involve mail or wire fraud offenses, in violation of 18 U.S.C. § 1341 or § 1343. The mail fraud statute, 18 U.S.C. § 1341, provides in relevant part:

> Whoever, having devised or intending to devise any scheme or artifice to defraud, or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises . . . for the purpose of executing such scheme or artifice or attempting so to do, [mails or causes the mailing of any matter] . . . shall be fined under this title or imprisoned not more than 20 years, or both.

To establish an offense under § 1341 (or § 1343), the plaintiff must prove by a preponderance of evidence the following elements:

- The defendant knowingly devised or intended to devise any scheme or artifice to defraud a victim of money or property, or the defendant knowingly devised or intended to devise any scheme for obtaining money or property by means of material false or fraudulent, representations, pretenses, or promises, and

- The defendant mailed any matter, or caused the mailing of any matter (or sent or caused to be send by interstate wire transmission), for the purpose of furthering or executing such scheme or artifice, and
- The defendant acted with the specific intent to defraud or deceive.

See Neder v. United States, 527 U.S. 1, 24-25 (1999); United States v. Philip Morris USA, 304 F. Supp. 2d 60, 69 (D.D.C. 2004). The extensive, detailed Findings of Fact set forth above, establish -- overwhelmingly -- that Defendants devised a scheme to defraud and used mailings and wire transmissions for the purpose of furthering it. The purpose of the scheme was to obtain, from smokers and potential smokers, money, i.e., the cost of cigarettes, to fill the coffers of the corporate Defendants. Put more colloquially, and less legalistically, over the course of more than 50 years, Defendants lied, misrepresented, and deceived the American public, including smokers and the young people they avidly sought as "replacement smokers," about the devastating health effects of smoking and environmental tobacco smoke, they suppressed research, they destroyed documents, they manipulated the use of nicotine so as to increase and perpetuate addiction, they distorted the truth about low tar and light cigarettes so as to discourage smokers from quitting, and they abused the legal system in order to achieve their goal -- to make money with little, if any, regard for individual illness and suffering, soaring health costs, or the integrity of the legal system.

### B. Defendants Engaged in a Scheme to Defraud Smokers and Potential Smokers

The Government has proven that the Enterprise knowingly and intentionally engaged in a scheme to defraud smokers and potential smokers, for purposes of financial gain, by making false and fraudulent statements, representations, and promises. Defendants participated in the Enterprise's overarching scheme to defraud smokers and potential smokers in order to maximize

their profits by preserving and enhancing the market for cigarettes, to avoid costly liability judgments, to derail attempts to make smoking socially unacceptable, and to sustain the cigarette industry.

In order to carry out this scheme, Defendants made the following false and fraudulent statements in a number of areas, including: (1) deceiving consumers into starting and continuing to buy and smoke cigarettes by misrepresenting and concealing the adverse health effects caused by smoking and exposure to environmental cigarette smoke, by maintaining that there was an "open question" as to whether smoking cigarettes causes disease and other adverse effects, despite the fact that Defendants knew otherwise, and by ensuring that their research, development, and marketing of cigarettes remained consistent with these core public positions (see Findings of Fact V(A)); (2) deceiving consumers into becoming or staying addicted to cigarettes by maintaining that neither smoking nor nicotine is addictive, despite the fact that Defendants knew these positions were false (see Findings of Fact V(B)); (3) deceiving consumers into becoming or staying addicted to cigarettes by manipulating the design of cigarettes and the delivery of nicotine to smokers, while at the same time denying that they engaged in such efforts (see Findings of Fact V(C)); (4) deceiving consumers, particularly parents and young people, by denying that they marketed to youth, while engaging in such marketing and advertising with the intent of addicting young people and enticing them to become lifelong smokers (see Findings of Fact V(F)); and (5) deceiving consumers through deceptive marketing and cigarette design modifications to exploit smokers' desire for less hazardous and "low tar" cigarettes which Defendants knew to be no safer than full-flavor cigarettes (see Findings of Fact V(G)).

The individual components must be viewed not independently but in context of the entire scheme to defraud. It is sufficient to prove by the totality of the circumstances that the defendant devised a scheme intended to defraud which included one or more of the individual component schemes alleged. See, e.g., Philip Morris, 304 F. Supp. 2d at 66-67; United States v. Godwin, 272 F.3d 659, 666-67 (4th Cir. 2001); United States v. O'Connell, 172 F.3d 921, 1998 WL 720696 (D.C. Cir. 1998) (table); United States v. Lemire, 720 F.2d 1327,1337 n. 12 (D.C. Cir. 1983); accord United States v. Clausen, 792 F.2d 102, 105 (8th Cir. 1986); United States v. Stull, 743 F.2d 439, 442 & n.2 (6th Cir. 1984) (collecting cases similarly holding); United States v. Halbert, 640 F.2d 1000, 1007 (9th Cir. 1981); United States v. Jordan, 626 F.2d 928, 931 (D.C. Cir. 1980); United States v. Amrep Corp., 560 F.2d 539, 546-47 (2d Cir. 1977).

The mail and wire fraud violations underlying the RICO violations cover any "scheme...to defraud, or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises." 18 U.S.C. §§ 1342, 1343. Defendants claim that their public statements do not constitute Racketeering Acts and were not in furtherance of a scheme to defraud because they were simply statements of opinion held in good faith. de Mango v. United States, 636 F.2d 714, 720 n.9 (D.C. Cir. 1980) ("[A] statement of opinion cannot constitute fraud"). This argument is unpersuasive.

First, in light of the overwhelming evidence of what the Enterprise as a whole and individual Defendants knew, it is absurd to believe that the highly-ranked representatives and agents of these corporations and entities had no knowledge that their public statements were false and fraudulent. The Findings of Fact are replete with examples of C.E.O.s, Vice-Presidents, and Directors of Research and Development, as well as the Defendants' lawyers, making statements

which were inconsistent with the internal knowledge and practice of the corporation itself. To call such statements "opinions," strains credulity.

Second, while federal courts have demonstrated a willingness to find vague statements or "rosy affirmations" by a company spokesman insufficient to hold a company liable for fraud, see In re Ford Motor Co. Secs. Litig., 381 F.3d 563, 571 (6th Cir. 2004) (quoting Shaw v. Digital Equip. Corp., 82 F.3d 1194, 1217 (1st Cir. 1996)) (finding that vague statements by corporate mangers and spokespersons are not actionable for securities fraud because no reasonable investor would have relied on them), that approach is not appropriate for statements whose falsity can be proved "through the orthodox evidentiary process," Va. Bankshares, Inc. v. Sandberg, 501 U.S. 1083, 1090, 1091-93 (1991). Indeed, where objective data is available to disprove a statement or demonstrate that it is misleading at the time it was made, a public statement of opinion by a company spokesperson can constitute actionable fraud. See City of Monroe Employees Retirement System v. Bridgestone Corp., 387 F.3d 468, 487-492 (6th Cir. 2004) (holding that even if a statement alluding to objective data was classified as opinion, it was specific enough to form the basis of an actionable securities claim).

In the context of securities fraud litigation, courts have found that a "statement of belief contains at least three implicit factual assertions: (1) that the statement is genuinely believed; (2) that there is [a] reasonable basis for that belief; and (3) that the speaker is not aware of any undisclosed facts tending to seriously undermine the accuracy of the statement. A projection or statement of belief may be actionable to the extent that one of these implied factual assertions is inaccurate." In re Apple Computer Sec. Litigation, 886 F.2d 1109, 1113 (9th Cir. 1989). Accordingly, even where a speaker may not be aware of undisclosed facts and issues an opinion

in supposed good faith, the statement will provide grounds for fraud where it can be proved that there is no reasonable basis for the speaker's belief. Were this not the case, companies would be able to shield themselves from liability by keeping their spokespersons in the dark about facts that are inconsistent with their public statements.

The analogy to securities fraud, though imperfect, is useful in this case. In securities fraud, a court tests the materiality of opinions issued by company spokespersons by determining whether a reasonable investor would have relied on the statement. Va. Bankshares, Inc. v. Sandberg, 501 U.S. at 1093-1094. In the case at bar, the materiality of public statements can be determined by assessing the public's reliance on those statements for their health and safety. When a spokesperson of a large, sophisticated corporation makes statements of what Defendants now characterize as "opinion," but which can be proved false by information that was available and known to the corporation at the time, and the public relies on those statements, the company cannot be permitted to escape liability merely because it declined to inform that individual spokesperson that his or her statement was misleading. As courts have recognized in the securities fraud context, failure to disclose or correct a misleading statement, even a statement which may be characterized as an opinion, is of particular concern where the public does not have other information with which they can evaluate the reliability of the opinion that was stated. See Helwig v. Vencor, Inc., 251 F.3d 540, 559-561 (6th Cir. 2001).

The totality of the evidence proves Defendants' wide reaching and pervasive scheme to defraud consumers and potential consumers of cigarettes. As established at trial and explained below, Defendants coordinated their public relations, research, cigarette design and marketing efforts in order to advance their overarching scheme to defraud by: (1) denying the adverse

health effects of active smoking; (2) denying the addictiveness of nicotine and cigarette smoking; (3) denying their manipulation of the nicotine content of cigarettes; (4) misrepresenting the health risks attached to light and low tar cigarettes; (5) denying their marketing to youth; (6) denying the adverse health effects of secondhand smoke; and (7) suppressing, concealing, and destroying information and documents related to the adverse health effects of smoking. The Court will address each area, seriatim.

**1. Defendants Falsely Denied the Adverse Health Effects of Smoking**

Smoking is a cause of significant disease and death. The evidence presented in this case demonstrates the extent of suffering by smokers and former smokers. Cigarette smoking and exposure to secondhand smoke kills 440,000 Americans every year, or more than 1,200 every single day. The annual number of deaths due to cigarette smoking is substantially greater than the combined annual number of deaths due to illegal drug use, alcohol consumption, automobile accidents, fires, homicides, suicides, and AIDS. Approximately one out of every five deaths that occur in the United States is caused by cigarette smoking. See Findings of Fact, V(A)(1).

Defendants' joint efforts to deny and distort the health effects of cigarette smoking consisted of making numerous widely disseminated public statements that denied or questioned smoking's harms; attacking legitimate scientific investigation; continually calling for more research; and, years after questions of causation were resolved in the public health community, repeatedly promising to determine through "objective" research by "independent" scientists, whether smoking was a cause of disease.

Defendants' efforts to deny and distort the scientific evidence of smoking's harms are demonstrated by not only decades of press releases, reports, booklets, newsletters, television and

radio appearances, and scientific symposia and publications, but also by evidence of their concerted, efforts to attack and undermine the studies in mainstream scientific publications such as the Reports of the Surgeon General. The intense public relations activity -- consisting of numerous press releases, advertisements, and other false statements -- before and particularly after publication of the 1964 Surgeon General's Report on Smoking and Health (the first to announce the consensus of the scientific and public health community that smoking caused disease and death), is but one example. See Findings of Fact Section V(A)(3)(c) and V(A)(5)(c). This continued despite widespread internal acknowledgment among Defendants' executives and scientists that smoking causes disease. See, e.g., Farone WD, 66:1-18 ("There was widespread acceptance that smoking caused disease. I never talked with a scientist at Philip Morris who said that smoking doesn't cause disease.").

Even after the 1964 Report, a February 26, 1972 Tobacco Institute press release asserted that the 1972 Surgeon General's Report, which announced the consensus of the scientific and public health community that smoking causes chronic obstructive bronchopulmonary disease (COPD) and other cardiovascular diseases, as well as cancer, "insults the scientific community" and that the report was "another example of 'press conference science' -- an absolute masterpiece of bureaucratic obfuscation." The press release also asserted that "the number one health problem is not cigarette smoking, but is the extent to which public health officials may knowingly mislead the American public." TIMN 0210602-03 at 0602 (US 21322).

Of paramount significance is that Defendants' internal documents openly acknowledge the purpose of their public relations strategy. For example, William Kloepfer, Vice President of Public Relations for the Tobacco Institute, wrote to Earle Clements, President of the Tobacco

Institute admitting his concern about the purpose: "Our basic position in the cigarette controversy is subject to the charge, and may be subject to a finding, that we are making false or misleading statements to promote the sale of cigarettes." TIMN0072354-56 at 2354 (US 63576). The Tobacco Institute's 1968 internal "Tobacco and Health Research Procedural Memo" advised: "The most important type of story is that which casts doubt on the cause and effect theory of disease and smoking. . . . [T]he headline should strongly call out the point – Controversy! Contradiction! Other factors! Unknowns!" TIMN0071488-91 at 1489 (US 21302). Similarly, an undated internal B&W document titled "Smoking and Health Proposal" explained: "Doubt is our product since it is the best means of competing with the 'body of fact' that exists in the mind of the general public. It is also the means of establishing a controversy." 690010951-0959 at 0959 (US 21040).

As another example, in a 1975 marketing document, B&W acknowledged the necessity of continuing the "open controversy" strategy:

> Smokers perceive cigarette smoking as dangerous for one's health. However, they continue to smoke. Thus, they are faced with the fact that they are behaving illogically. They respond by providing either a rationalization for smoking or by repressing their perceptions of the dangers involved. . . . The advertising must also cope with consumer attitudes about smoking, providing either a rationale or a means of repressing the health concern.

680113760-3763 at 3761-3762 (US 20987).

Defendants understood that most individuals, when starting to smoke, do not adequately appreciate the full risk associated with smoking to make an informed decision about whether or not to engage in smoking behavior. In fact, the evidence shows that most people's knowledge of the nature and consequences of diseases caused by smoking tends to be superficial. See Findings

of Fact Section V(B); Slovic WD, 18:14-20:5; Weinstein WD, 24:7-29:22.

Using the sophisticated and well-organized machinery created to serve their agenda, Defendants fraudulently denied the adverse health effects of smoking for at least 40 years in order to sustain the appearance of an open controversy about the link between smoking and disease, and thereby maintain and enhance the cigarette market and their collective revenues.

**2. Defendants Falsely Denied that Nicotine and Smoking Are Addictive**

Defendants have made and continue to make false and fraudulent statements about the addictiveness of nicotine and smoking. Fact and expert testimony, as well as Defendants' internal documents spanning five decades, firmly establish that Defendants have intended their statements about addiction to further the Enterprise's scheme to defraud by concealing what Defendants openly recognized internally – that smoking is an addiction driven primarily by the pharmacological effects of nicotine.

Defendants' internal research reflects their understanding that nicotine is the most important chemical delivered by cigarettes because it is what compels smokers to smoke. Their product research and development efforts had the overriding objective of harnessing and manipulating the power of nicotine and ensuring that their marketed products delivered enough nicotine to create and sustain addiction. [Indeed, to this day none of Defendant cigarette manufacturers publicly admit that nicotine is an addictive drug delivered in cigarettes. Defendants' current public statements on addiction avoid any mention of nicotine, let alone its role in addiction. See Findings of Fact Section V(B)(4)(j). Dr. Jack Henningfield and Dr. Michael Eriksen both testified that Defendants' current statements about addiction omit material information and are not fully consistent with the conclusions of the medical and scientific

communities. Henningfield WD, 104:23-109:22; Eriksen TT, 5/16/05, 21248:20-21249:15.]

By the early 1980s, the medical and scientific communities recognized that the results of clinical observations, laboratory research, and population studies together justified the conclusion that tobacco-delivered nicotine was addictive. Henningfield TT, 11/22/04, 6811:11- 6812:2.

In response to the emergence of a scientific consensus on this issue in the early 1980s, Defendants began making four types of public statements: (1) Smoking cigarettes is not addictive because some smokers can, and do, quit smoking on their own (e.g., "smoking is a truly personal choice which can be stopped if and when a person decides to do so" (no bates) (US 22727); (2) Smoking cigarettes is not addictive because it does not lead to physical "dependence" (e.g., "the claim that there is a physical dependence to smoking is simply a desperate attempt to find some way to differentiate smoking from other habits" (no bates) (US 85366); (3) Smoking cigarettes is not addictive because it does not induce "intoxication" (e.g., "Tobacco is not intoxicating, in direct contrast to any other substance that has been claimed to be addictive, from heroin and cocaine through to alcohol" (no bates) (US 23036); (4) Smoking cigarettes is not addictive because cigarettes are not like other addictive drugs -- rather, smoking is merely a pleasurable behavior (e.g., the "attachment" to smoking is in the same category as "tennis, jogging, candy, rock music, Coca-Cola, members of the opposite sex and hamburgers" (no bates) (US 65625) (CEO of Philip Morris analogized smoking to eating Gummi Bears saying "I don't like it when I don't eat my Gummi Bears, but I'm certainly not addicted to them," Morgan PD, Broin v. Philip Morris, et al., 4/17/97, 77:20-78:23).

As to the first category of statements, there is simply no evidence in the record to support the assertion that smoking is not addictive because a smoker can voluntarily quit. Not a single

defense witness could provide any support, scientific or otherwise, for this proposition. See Dawson WD, 49:5-20; Rowell TT, 16678:21-16679:4; Keane WD, 22:9-14.

As to the second and third categories of public statements, Defendants cited to characteristics of addictive drugs – physical dependence and intoxication – as essential markers of addiction when they knew they were not and had not been considered so by the scientific community for decades. See Findings of Fact Section V(B)(2)(b). In making these types of statements, Defendants sought to distort the terminology of addiction by relying on criteria which are no longer recognized by the scientific community. Additionally, Defendants' public statements directly contradicted their own internal recognition that smoking could actually cause intoxication. See, e.g., Farone WD, 72:19-74:3, 78:17- 80:14 (discussing basis for conclusion that Defendants understood smoking to be addictive and Philip Morris's knowledge of nicotine's role in smoking addiction). Defendants similarly understood that smokers experience withdrawal symptoms upon cessation. 1000348671-8751 at 8676, 8708 (US 20097) (1971 Philip Morris document stating that a realistic view of cessation would show "a restless, nervous, constipated husband bickering viciously with his bitchy wife who is nagging him about his slothful behavior and growing waistline").

Finally, as to the fourth category of statements, Defendants denied to the public what they recognized internally beginning as early as the 1950s: people smoke primarily because of the pharmacological effects of the drug nicotine. Defendants' own nicotine expert, Dr. Rowell, readily agreed that smoking cigarettes involves use of a drug and is not comparable to non-drug "habits" cited by Defendants in their public statements, such as jogging, playing tennis, or nailbiting. Rowell TT, 3/24/05, 16685:5-16687:19, 16633:24-1634:10. The Findings of Fact

recount at great length and in great detail that Defendants knew smoking was addictive because of nicotine. See generally Findings of Fact Section V(B)(3). Indeed, documents consistently reflect that Defendants considered themselves to be in the "nicotine business" because nicotine is the "sine qua non" of cigarettes. See, e.g., US 22848 at 7837-7839 (Philip Morris in 1969: "We have then as our first premise, that the primary motivation for smoking is to obtain the pharmacological effect of nicotine. . . . [N]one [of the psychological motives for smoking] are adequate to sustain the habit in the absence of nicotine."); US 20659 at 5684-5685 (R.J. Reynolds' researcher in 1972: "Tobacco products, uniquely, contain and deliver nicotine, a potent drug with a variety of physiological effects. . . . [T]he confirmed user of tobacco products is primarily seeking the physiological 'satisfaction' derived from nicotine.").

Moreover, internal documents and testimony from former company employees affirmed that within their corporate walls, Defendants openly recognized the addictiveness of cigarettes. Dr. Farone testified that during his time at Philip Morris there was "widespread acceptance internally throughout the company – among executives, scientists, and marketing people" that nicotine was primarily responsible for addiction to smoking. Farone WD, 72:21-73:1, 74:10-23.

Defendants have intentionally maintained and coordinated their fraudulent position on addiction and nicotine as an important part of their overall efforts to influence public opinion and persuade people that smoking is not dangerous. By the use of this fraud, Defendants have kept more smokers smoking, recruited more new smokers, and maintained or increased revenues.

#### 3. Defendants Falsely Denied that They Manipulated Cigarette Design and Composition so as to Assure Nicotine Delivery Levels Which Create and Sustain Addiction

Defendants recognized the relationship between nicotine delivery and continued cigarette

sales. See generally Findings of Fact Section V(C)(1)(c). By delivering the optimum amount of nicotine, Defendants could keep people smoking, keep those already addicted satisfied, and therefore maintain or increase cigarette sales revenue. Based on this understanding, Defendants actively tried to ensure that smokers would continue to receive sufficient nicotine from cigarettes that would deliver reduced tar and nicotine measurements under the FTC Method. See generally Findings of Fact Section V(C)(2).

Defendants dedicated substantial resources to devising techniques to modify and manipulate the amount of nicotine that their products deliver. Defendants have studied extensively how every characteristic of every component of cigarettes -- including the tobacco blend, the paper, the filter, additives, and the manufacturing process -- affects nicotine delivery. They have utilized that understanding in designing their cigarettes. Defendants have designed their cigarettes with a central overriding objective -- to ensure that smokers obtain enough nicotine to create and sustain addiction.

Nevertheless, Defendants have publicly and fraudulently denied that they manipulate nicotine delivery. The evidence establishes that Defendants' statements denying manipulation of nicotine have been intentionally deceptive, misleading, or otherwise fraudulent when made. Through these and other false statements, Defendants have furthered their common efforts to deceive the public and carry out their fraudulent scheme.

Defendants spent many millions of dollars and thousands of scientist hours over decades to ensure that smokers of all brands consumed sufficient nicotine to establish and maintain addiction. Defendants' own internal evidence shows that (a) they intended to manipulate the nicotine delivery of their cigarettes; (b) they employed numerous design techniques because they

intended and believed that those techniques allowed them to successfully control nicotine delivery; and (c) these efforts were driven by Defendants' widespread understanding that nicotine is an addictive drug and that cigarette smoking is a drug-driven addiction.

Nevertheless, at the same time they were pursuing these techniques, Defendants fraudulently denied both their efforts to manipulate nicotine and their knowledge of nicotine's addictiveness. Defendants have publicly and fraudulently denied that they manipulate nicotine and falsely asserted that the level of nicotine in a cigarette is inextricably linked to the cigarette's tar level, that nicotine delivery levels automatically follow tar delivery levels in cigarette smoke, that nicotine is an essential flavorant, and that because they do not add "extra" nicotine to cigarettes they are not engaged in manipulating the delivery of nicotine through the smoke. For example, on a March 27, 1994, airing of "Face the Nation," Brennan Dawson, Vice President of the Tobacco Institute, stated:

> The industry does take the position that . . . not only do they not add nicotine, but they don't manipulate nicotine. So Congress has been told formally by every cigarette manufacturer in the United States that this claim is without foundation.

TLT0730851-1975 (US 77012). Through these and other false statements, Defendants have furthered their common efforts to deceive the public regarding their control and manipulation of nicotine.

#### 4. Defendants Falsely Represented that Light and Low Tar Cigarettes Deliver Less Nicotine and Tar and, Therefore, Present Fewer Health Risks than Full-Flavor Cigarettes

The evidence establishes that the vast majority of people who smoke today want to quit due to health concerns. Defendants accurately perceive smokers' desire to quit as a significant

threat to their economic welfare and possibly their existence; obviously, if sufficient numbers of smokers who want to quit actually do so, it will greatly diminish Defendants' earnings. In 1978, a Tobacco Institute document offered the following chilling assessment of the threat to Defendants' businesses: "low tar cigarette smokers . . . are potential cigarette quitters. . . . And more of them than the average have tried to quit smoking. Since low tar smokers are an expanding share of the market, their greater desire to quit smoking poses a special problem for the cigarette industry." 501565967-6019 at 6008 (US 21866).

As part of a scheme to intercept potential quitters and dissuade them from giving up smoking, Defendants developed and introduced filtered and purportedly "low tar and nicotine" cigarettes. As their internal documents reveal, Defendants engaged in massive, sustained, and highly sophisticated marketing and promotional campaigns to portray their light brands as less harmful than regular cigarettes, and thus an acceptable alternative to quitting, while at the same time carefully avoiding any admission that their full-flavor cigarettes were harmful to smokers' health. Defendants knew that by providing worried smokers with health reassurance, they could keep them buying and smoking cigarettes.

Defendants' efforts have been successful. Even though low tar smokers have a greater desire to quit, their misconception that low tar cigarettes are less harmful dissuades them from doing so. Current research demonstrates that approximately 50% of all smokers of lower tar cigarettes chose such products because they perceive them to be a "healthier" cigarette and a potential step toward quitting. Weinstein WD, 53:3-54:20; Benowitz WD, 60:8-22.

Defendants were aware, however, that because of nicotine addiction, smokers would not smoke "health reassurance" cigarettes if they failed to supply enough nicotine to sustain their

addiction. Defendants therefore designed their low nicotine and low tar cigarettes with what they referred to as "elasticity" of delivery. This created the illusion that there would be less nicotine and less tar, but at the same time it would facilitate a smoker's ability to compensate for the reduced nicotine yield. As a result of smoker compensation, discussed in detail in the Findings of Facts, smokers inhale essentially the same amount of nicotine (and with it, tar) from low tar cigarettes as from regular cigarettes.

In short, Defendants have known for decades that filtered and low tar cigarettes do not offer a meaningful reduction of risk, and that their marketing which emphasized reductions in tar and nicotine was false and misleading. Defendants have known for decades that each smoker has a particular nicotine requirement that he or she must satisfy in order to sustain the addiction and, as a result, smokers will inhale the same amount of nicotine, and with it tar, from low tar cigarettes as they do from regular cigarettes. Benowitz WD, 55:11-22; 56:22-23; 57:5-9; 57:23-1; Benowitz TT, 11/2/04, 4762:23-24; 4763:14-16; Farone WD, 103:18-104:1; see also Findings of Fact Section V(E)(2).

Despite overwhelming evidence that Defendants intended to market low tar cigarettes in order to deter potential quitters, Defendants have consistently maintained publicly that "all of their marketing activities had one and only one purpose: to impact the brand choice of adults who had already chosen to smoke." In addition, "[t]he tobacco companies expressly stated they had no interest in either (1) increasing the likelihood of anyone's beginning to smoke or (2) decreasing the likelihood that a current smoker would quit." Dolan WD, 56:3-14.

These public statements are blatantly false. For instance, Carolyn Levy, former Philip Morris Director of Consumer Research and Senior Vice President for Marketing and Sales

Information, testified that at the same time Philip Morris was making public statements that it had no interest in intercepting quitters, she was conducting research on ways to deter smokers from quitting. Levy WD, 33:12-34:9, 34:23-35:2. Levy testified that Philip Morris was "studying the factors that influence quitting," including whether "people quit because of health concerns," so that Philip Morris could "design products or line extensions of existing brands that addressed those factors." Asked if the purpose was "[s]o that people would keep smoking Philip Morris cigarettes rather than quitting," Levy testified: "Yes, if Philip Morris could design new products to address those concerns." Levy WD, 31:9-22.

As part of the Enterprise's scheme to defraud smokers, Defendants withheld and suppressed their extensive knowledge and understanding of nicotine-driven smoker compensation. Farone WD, 112:23-113:10 (Defendants' superior knowledge of compensation was closely held within Philip Morris and the tobacco industry and there was an "effort on the part of [his] co-workers at Philip Morris, including [his] supervisors, to restrict any public acknowledgment on the part of Philip Morris of the phenomena of compensation"). For example, a 1978 BATCo memorandum about its internal research stated:

> In general, a majority of habitual smokers compensate for changed delivery, if they change to a lower delivery brand than their usual brand. . . . If they choose [a] lower delivery brand which has a higher tar to nicotine ratio than their usual brand (which is often the case with lower delivery products) the smokers will in fact increase the amounts of tar and gas phase that they take in, in order to take the same amount of nicotine.

105553905-3914 at 3905, 3907, 3913 (US 34799). In addition, there are lights of certain brands with higher tar levels than regulars of other brands from the same company, and there are also lights and regulars of the same brand that have the same FTC tar rating. For example, according

to the most recent FTC report of tar and nicotine yields, Philip Morris sells versions of Virginia Slims and Virginia Slims Lights that both deliver 15 mg of tar as measured by the FTC method.

Defendants acknowledge that, today, every major manufacturer continues to manufacture and sell low tar brands and brand extensions in both the "light" and "ultra light" categories. Ivey WD, 54:6-17; Bonhomme WD, 8:13-9:18. Defendants use these so-called brand descriptors such as "light," "medium," and "mild" to market their brand extensions as low in tar with full knowledge that a substantial number of smokers interpret these descriptors as indicating a less harmful cigarette. See Findings of Fact Section V(E)(3).

The misleading nature of Defendants' design and marketing of filtered and low tar cigarettes continues. See generally Burns WD, 30:9-12; 62:5-7; Farone WD, 3:12-22; 4:20-22; 72:13-18; 115:19-116:2; Henningfield WD, 55:13-56:7; 66:14-67:12; 82:16-19.

* * * *

### 7. Defendants Suppressed Documents, Information, and Research

Throughout the past fifty years, Defendants have engaged in parallel efforts to suppress, conceal, and destroy documents and information in furtherance of the Enterprise's goals of (1) preventing the public from learning the truth about smoking's adverse impact on health; (2) preventing the public from learning the truth about the addictiveness of nicotine; and (3) avoiding or, at a minimum, limiting liability for smoking and health related claims in litigation. These activities occurred despite declarations by Defendants that (a) they did not conceal, suppress or destroy evidence, and that (b) they shared with the American people all pertinent

information regarding the true health effects of smoking, including research findings related to smoking and health. See, e.g., Farone TT, 10/12/04, 2091:23-2092:14; Farone WD, 156:3-15 (Philip Morris wanted to bury "any research that was contrary to the company's position on smoking and health and addiction.").

Defendants' suppression of information was aimed, in large part, at protecting them from exposure in smoking and health litigation. Indeed, much of the documentary and testimonial evidence directly references their fear of litigation exposure from scientific data and reports in their possession. The testimony of leading scientists from both Brown & Williamson and Philip Morris reflect Defendants' concerns over scientific information becoming available to plaintiffs in smoking and health litigation. Kendrick Wells, B&W Assistant General Counsel for Product Litigation, confirmed that throughout his 30-year tenure at B&W, the company feared that documents created by other BAT Group companies and statements made by employees of other BAT Group companies could adversely affect B&W's litigation position in the United States. Wells WD, 5:15-6:18. The concern over the use of information against the Defendants in litigation was also expressed in documents that chronicle the Defendants' cooperative efforts to suppress and conceal information. See e.g., (no bates) (US 21203) (memorandum in which outside counsel warned the Committee of Counsel that "should the results of the survey prove unfavorable, they may be subpoenaed or otherwise fall into the hands of the FTC, a Congressional Committee, or a plaintiff in pending cancer litigation").

In some instances, Defendants destroyed documents to prevent their release. See, e.g., (no bates) (US 21677) (RJR scientists confirm they will remove documents from the research and development files if it becomes clear the documents will expose RJR in litigation); (no bates)

(US 34839) (in notes of a BATCo meeting in 1986 it was reported that research documents would be destroyed as part of "spring cleaning"). Defendants also employed lawyers to review and edit scientific documents to ensure that no damaging information was retained in company files. See, e.g., Findings of Fact Section V(H)(1). In addition, certain Defendants, including Philip Morris and Brown & Williamson, made arrangements to ship secret scientific information outside of the United States or to use foreign scientific laboratories to shield documents from disclosure in litigation. For example, Philip Morris bought a foreign research facility in Germany known as INBIFO and established company policies to prevent its research documents from entering or being retained in the United States. Farone WD, 21:16-22:9, 147:11-152:15; Farone TT, 10/07/04, 1938:2-1939:16. Defendants attempted to create attorney-client privilege where none properly existed. See Findings of Fact Section V(H)(3).

Many of the actions to suppress information were joint efforts by all of the Defendants through the Committee of Counsel, through other joint organizations, or through Defendants' law firms, including Covington & Burling and Shook, Hardy & Bacon, which often represented one or more of the Defendants.

### C. Defendants Established an Enterprise

#### 1. Applicable Legal Standards

Defendants formed a RICO Enterprise, comprised of a group of business entities and individuals associated-in-fact, including Defendants to this action, their agents and employees, and other organizations and individuals.

The RICO statute provides that an "'enterprise' includes any individual, partnership, corporation, association, or other legal entity, and any union or group of individuals associated in

fact although not a legal entity." 18 U.S.C. § 1961(4). The Supreme Court has held that an enterprise "is proved by evidence of an ongoing organization, formal or informal, and by evidence that the various associates function as a continuing unit." United States v. Turkette, 452 U.S. 576, 583 (1981). In accordance with Turkette, the Court of Appeals for this Circuit has consistently held that an association-in-fact "enterprise is established by (1) a common purpose among the participants, (2) organization, and (3) continuity," and that the enterprise need only involve "some structure, to distinguish an enterprise from a mere conspiracy." United States v. Richardson, 167 F.3d 621, 625 (D.C. Cir. 1999) (citations omitted); accord United States v. White, 116 F.3d 903, 924 & 925 n.7 (D.C. Cir. 1997); United States v. Perholtz, 842 F.2d 343, 362-63 (D.C. Cir. 1988). As our Circuit further explained: "It is not necessary that the enterprise . . . have any particular or formal structure but it must have sufficient organization that its members function and operated together in a coordinated manner in order to carry out the common purpose alleged." Perholtz, 842 F.2d at 364.

Establishing that the members of the enterprise operated together in a coordinated manner in furtherance of a common purpose may be proven by a wide variety of direct and circumstantial evidence including, but not limited to: inferences from the members' commission of similar racketeering acts in furtherance of a shared objective; financial ties; coordination of activities; a community of interests and objectives; the interlocking nature of the members' schemes; and the overlapping nature of the wrongful conduct. See, e.g., United States v. Owens, 167 F.3d 739, 751 (1st Cir. 1999) (members of drug trafficking enterprise provided other members with financial assistance and coordinated transportation of drugs); Richardson, 167 F.3d at 625 ("Additional evidence of [the enterprise's] organization and continuity comes from the robberies'

consistent pattern."); United States v. Davidson, 122 F.3d 531, 535 (8th Cir. 1997); Perholtz, 842 F.2d at 355 ("The interlocking nature of the schemes and the overlapping nature of the wrongdoing provides sufficient evidence for the jury to conclude that this was a single enterprise."); United States v. Qaoud, 777 F.2d 1105, 1116-17 (6th Cir. 1985) (jury could have inferred the existence of the alleged association-in-fact enterprise from the "coordinated nature of the defendants' activity" and that the defendants' racketeering acts were facilitated by their nexus to the enterprise); United States v. Griffin, 660 F.2d 996, 1000 (4th Cir. 1981); United States v. Elliott, 571 F.2d 880, 898 (5th Cir. 1978) (jury entitled to infer existence of enterprise from circumstantial evidence).

"It is not essential that each and every person named [as a member of the enterprise] be proven to be a part of the enterprise. The enterprise may exist even if its membership changes over time . . . or if certain defendants are found by the [fact finder] not to have been members at any time." Perholtz, 842 F.2d at 364. Likewise, it is not necessary to prove "that every member of the enterprise participated in or knew about all its activities." United States v. Cagnina, 697 F.2d 915, 922 (11th Cir. 1983); see also United States v. Rastelli, 870 F.2d 822, 827-28 (2d Cir. 1989).

This Court has already held, consistent with the law of this Circuit, that a RICO enterprise may consist of "a group of individual[s], partnerships, and corporations associated in fact," United States v. Philip Morris Inc., 116 F. Supp. 2d at 152 (quoting Perholtz, 842 F.2d at 351, n.12). In Perholtz itself, the D.C. Circuit held that RICO's definition of "enterprise" includes an association-in-fact of corporations, legal entities and individuals. 842 F.2d at 352-53.

**2. Defendants' Enterprise Had a Common Purpose**

The central shared objective of Defendants has been to maximize the profits of the cigarette company Defendants by acting in concert to preserve and enhance the market for cigarettes through an overarching scheme to defraud existing and potential smokers. Indeed, documents recounting the December 1953 meeting at the Plaza Hotel attended by the presidents of Defendants Philip Morris, RJR, B&W, Lorillard, and American -- a meeting called by American's president to discuss an "industry response" to research identifying cigarette smoking as a cause of lung cancer -- report that the executives agreed to jointly

> sponsor a public relations campaign which is positive in nature and is entirely "pro-cigarettes. . . ." [The executives] are also emphatic in saying that the entire activity is a long-term, continuing program, since they feel that the problem is one of promoting cigarettes and protecting them from these and other attacks that may be expected in the future. Each of the company presidents attending emphasized the fact that they consider the program to be a long-term one.

MTP0023548-3552 at 3549 (US 21411). See also Findings of Fact Section III(B). Defendants recognized that their competing companies would benefit from working together on certain common problems while continuing to compete against each other for the largest share of the cigarette market.

Over the next several decades, the common goal of preserving and enhancing the cigarette market, maximizing profits, avoiding costly liability judgments, and deterring or minimizing attempts to make smoking socially unacceptable remained central to the actions of Defendants. During that time, Defendants uniformly denied, both individually and collectively: that smoking had been proven as a cause of cancer and other serious diseases (while falsely promising that the industry was funding independent research to determine the health effects of

smoking); that secondhand smoke caused disease; that smoking was addictive; that the industry manipulated the levels of nicotine in its products; that light and low tar cigarettes were no less hazardous than full flavor cigarettes; and that the industry marketed its products to young people.

The United States has shown that the Defendant members of the Enterprise who were not physically present at the Plaza Hotel meeting -- including Liggett, Altria (which was formed in 1985 and had previously been known as Philip Morris Companies), BATCo, CTR (which was first created as the Tobacco Industry Research Committee in the wake of the December 1953 meeting), and the Tobacco Institute (which was formed in 1958) -- also shared the common goals of the Enterprise and acted in furtherance of those goals. See Findings of Fact Section III. Moreover, in furtherance of the central objectives of the Enterprise, Defendants attempted to, and at times did, conceal or suppress information and destroy documents. Their purpose in taking such action was to avoid adverse liability judgments in litigation involving smoking and health issues and to prevent discovery of evidence regarding the causal link between cigarettes, addiction, and disease. See Findings of Fact Section V(H).

### 3. The Enterprise operated through both formal and informal organization

Like an amoeba, the organization of the Enterprise changed its shape to fit its current needs, adding organizations when necessary and eliminating them when they became obsolete. Whatever the shape or composition of the Enterprise at any given time, again like an amoeba, its core purpose remained constant: survival of the industry. The participants in the Enterprise coordinated and strategized in order to preserve and enhance the cigarette market and, in turn, their individual revenues. The Enterprise created and used formal and informal entities, many

with overlapping participants and purposes, to serve Defendants' central mission.

For example, in terms of formal organization, TIRC/CTR and the Tobacco Institute were jointly formed and funded by other Defendant-members of the Enterprise to help the industry execute the strategy devised to achieve their shared goal. TIRC/CTR sponsored and funded research that attacked scientific studies demonstrating the harmful effects of smoking cigarettes but did not itself conduct research addressing the fundamental questions regarding the adverse health effects of smoking. Moreover, attorneys for Defendants initiated and oversaw CTR "Special Projects" -- research projects conceived and directed by industry representatives, including industry lawyers, to support scientists who had shown a willingness and ability to generate data, and provide testimony, that would bolster the industry's litigation position before courts and governmental bodies. See Findings of Fact Section III(E)(2). Altria executives served on the Board of Directors of CTR, and Altria had, and exercised, approval authority for CTR special projects. See, e.g., Parrish TT, 1/27/05, 11349:8-11352:23, 11355:1-11357:8; (no bates) US 87508; (no bates) US 20384.

Similarly, from 1958 to 1998, the Tobacco Institute actively designed, wrote, and caused to be published press releases, advertisements, pamphlets, and testimony that advanced Defendants' jointly-formulated positions on smoking and health issues, including denying that smoking cigarettes caused disease and was addictive, and supported the false claim that the link between smoking cigarettes and exposure to secondhand smoke and adverse health effects was an "open question." See Findings of Fact Section III(D)(3). The Tobacco Institute served as an effective conduit of information between members of the Enterprise both domestically and internationally through its various committees. See Findings of Fact Section III(D)(4). Altria

executives attended meetings of the TI Committee of Counsel and sat on the TI Executive Committee. Parrish TT, 1/27/05, 11352:24-11353:24; (no bates) (US 62461); (no bates) (US 88252); (no bates) (US 88308).

Defendants also used numerous other means -- including structures of varying degrees of formality such as CIAR, the Committee of Counsel, the ETS Advisory Committee, the Ad Hoc Committee, the Research Liaison Committee, the Industry Technical Committee, law firms, and direct communications between and among members of the Enterprise -- to coordinate their activities, ensure continued adherence to the joint strategy, and enable the Enterprise to respond as new threats to the industry arose. See Findings of Fact Section III(F).

Defendants' claim that the Enterprise no longer has any organization within the meaning of 18 U.S.C. § 1962(c) because all of the "all of the organizational vehicles for the 'enterprise' no longer exist" is unpersuasive. Defs.' Corrected Trial Brief at 29. While it is true that CTR and TI were dissolved pursuant to the terms of the MSA, all of the other organizations either still exist or can be readily re-activated. Moreover, the individuals and Defendant-companies participating in these organizations, who, incidentally, often overlapped, still exist. Most importantly, Defendants have an ongoing need to satisfy the same purposes which these organizations met. Put simply, these organizations can be resurrected, recreated, or reincarnated at any time as Defendants wish. For example, Philip Morris currently has PMERP (Philip Morris External Research Program) which operates out of CIAR's former headquarters, is directed by CIAR's former scientific director, Max Eisenberg, and continues to fund many former CIAR projects.

**4. The Enterprise Has Functioned as a Continuous Unit**

The evidence also convincingly demonstrates that the Enterprise has functioned as a continuous unit from at least December 1953, when the executives of five Defendants (Philip Morris, RJR, B&W, Lorillard and American) agreed to launch their long-term campaign to deceive and mislead American smokers and potential smokers announced in the Frank Statement. See Findings of Fact Section III(B). [For purposes of this lawsuit, the Enterprise was in existence as early as December 1953. No evidence was presented about the Enterprise prior to 1953.] For five decades, Defendants not only communicated directly and continuously with one another on matters relevant to the aims of the Enterprise, but also created, supported, and controlled a web of organizations, committees, and other bodies that facilitated coordinated behavior. For example, TIRC/CTR, which was created in 1954, existed until 1998, and the Tobacco Institute, which was created in 1958, existed until 2000. Jointly created and funded CIAR, which was created in 1988, existed through 1999. In addition, Defendants' participation in various other organizations, including many international organizations, continued for years. Defendants continue to participate in the TAC (formerly the TSMC and then the TRC) even today. Similarly, Defendants continue to participate in CORESTA, and the TDC (formerly ICOSI and then INFOTAB). See Findings of Fact Section III(I).

Over many years, Defendants, often used the Tobacco Institute to furnish advice, assistance, and even financial support to international industry-related groups and organizations as they worked on projects, publications, videos, conferences, briefing papers, and lobbying materials for the benefit of the Enterprise. See Findings of Fact Section III(D). For example, the Tobacco Institute funded and organized the College of Tobacco Knowledge, a series of annual seminars for employees of the tobacco industry and tobacco-related industries which addressed

issues facing the industry at that time and sought to ensure presentation of a unified and consistent public stance on smoking and health issues. See Findings of Fact Section III(D)(5). Defendants utilized their outside lawyers to further the goals of the Enterprise, including attorneys such as John Rupp at Covington & Burling, Donald Hoel at Shook, Hardy & Bacon, Andrew Foyle at Lovells, and others at Chadbourne & Parke and Jones Day.

Finally, Defendants have continued to adhere to many of the exact positions formulated at the very genesis of the Enterprise -- such as denial of the adverse health effects of smoking and exposure to secondhand smoke, denial of the addictive properties of nicotine, and denial that Defendants market to youth. See Findings of Fact Section V(A,B,F,G).

In sum, the Enterprise consisted of individual Defendants working together to coordinate significant activities for over 50 years through TIRC/CTR, the Tobacco Institute, and an array of other overlapping entities. Their activities were calculated to serve their shared objectives, including their primary goal of maximizing profits by preserving and expanding the market for cigarettes. See, e.g., United Healthcare Corp. v. Am. Trade Ins. Co., 88 F.3d 563, 570 (8th Cir. 1996); Securitron Magnalock Corp., 65 F.3d at 263-64; Perholtz, 842 F.2d at 355; Local 1804-1, 812 F. Supp. at 1310-15; Mitland Raleigh-Durham v. Myers, 807 F. Supp. 1025, 1055 (S.D.N.Y. 1992).

### D. The Enterprise Engaged in and Its Activities Affected Interstate and Foreign Commerce

There can simply be no denying that the Enterprise engaged in, and its activities affected, interstate or foreign commerce. This has been proven, in part, by the fact that each individual Defendant itself had an extensive nexus to interstate or foreign commerce. See, e.g., United

States v. Farmer, 924 F.2d 647, 651 (7th Cir. 1991); United States v. Norton, 867 F.2d 1354, 1359 (11th Cir. 1989) (collecting cases); United States v. Doherty, 867 F.2d 47, 68 (1st Cir. 1989); United States v. Bagnariol, 665 F.2d 877, 892-93 (9th Cir. 1981); United States v. Long, 651 F.2d 239, 241-42 (4th Cir. 1981); United States v. Stratton, 649 F.2d 1066, 1075 (5th Cir. 1981).

In fact, each of the cigarette company Defendants stipulated that from 1953 to the present it has been engaged in, and its activities affect, interstate and foreign commerce within the meaning of 18 U.S.C. § 1962(c) and (d). Similarly, Altria stipulated that it has engaged in interstate and foreign commerce since it was formed as Philip Morris Companies in 1985. See Order #280.

Between 1954 and 1998, Defendants CTR and TI (beginning in 1958), both incorporated in New York state, each received over $500 million in funding in interstate commerce via the interstate banking system from various cigarette company Defendants located in different states. See Findings of Fact Section IV(I,J). During that same time period, CTR funded millions of dollars of research projects, which were conducted by researchers and institutions in various states and abroad, the results of which were published in periodicals and books throughout the United States and in foreign countries. Similarly, TI issued thousands of press releases and public relations advertisements which were disseminated in interstate commerce throughout the United States in various newspapers, magazines, periodicals and books. See Findings of Fact Section III(C,D). Thus, CTR and TI were engaged in and their activities affected interstate commerce.

Because many of BATCo's Racketeering Acts took place outside the United States,

Defendants claim that they cannot be the basis of RICO violations. RICO may apply to conduct which occurs outside the United States as long as it has a substantial direct effect on the United States. Doe I v. Unocal, 395 F.3d 932 (9th Cir. 2002). RICO is an expansive statute, broadly construed to reach a wide array of activity. United States v. Pepe, 747 F.2d 632 (11th Cir. 1984). Generally, courts have concluded that this broad construction does not include international schemes largely unrelated to the United States. See e.g., Brink's Mat Limited v. Diamond, 906 F.2d 1519, 1524 (11th Cir. 1990) . In determining whether RICO applies extraterritorially, allegations must meet either the "conduct" test or the "effects" test. Under the "conduct" test, RICO applies where the conduct within the United States directly caused a foreign injury. North South Fin. Corp. v. Al-Turki, 100 F.3d 1051 (2d Cir. 1996). Under the "effects" test, RICO applies when the foreign conduct at issue has "substantial" effects within the United States. Consolidated Gold Fields PLC v. Minorco, S.A., 871 F.2d 252, 261-62 (2nd Cir. 1989). This test is met when the domestic effect is a "direct and foreseeable result of the conduct outside of the United States." Id. at 262. At all times, the primary consideration is whether the scheme to defraud or artifice has a tangential or direct effect on the United States. See e.g., Butte Min. PLC v. Smith, 876 F. Supp. 1153 (D. Mont. 1995); United States v. Noriega, 746 F. Supp. 1506, 1516-1517 (S.D. Fla. 1990); Consolidated Gold Fields PLC v. Minorco S.A., 871 F.2d 252, 261-62 (2d Cir.1989).

While it is true that many of BATCo's activities and statements took place outside of the United States, they nevertheless had substantial direct effects on the United States. First, many of BATCo's statements and policies at issue in this case concerned US subsidiary/affiliate Brown & Williamson and potential litigation in the United States. Second, and most importantly,

BATCo's activities and statements furthered the Enterprise's overall scheme to defraud, which had a tremendous impact on the United States, as demonstrated in the Findings of Fact.

Finally, the evidence that all Defendants taken together have bought and sold literally over one trillion dollars of goods and services in interstate and foreign commerce since 1954 conclusively establishes the requisite effect on interstate commerce.

### E. Each Defendant Was Associated with, but Distinct from, the Enterprise

#### 1. Each Defendant Is Associated with the Enterprise

To prove a defendant's association with an association-in-fact enterprise, it is not necessary to prove that the defendant had a formal position in the enterprise, participated in all the activities of the enterprise, "had full knowledge of all the details of" its activities, or even knew about the participation of all the other members in the enterprise. Rather, it is sufficient that the defendant "know the general nature of the enterprise and know that the enterprise extends beyond his individual role." United States v. Rastelli, 870 F.2d 822, 828 (2d Cir. 1989) (collecting cases); see also United States v. Marino, 277 F.3d 11, 33 (1st Cir. 2002) ("Association may be by means of an informal or loose relationship. To associate has its plain meaning. . . . 'Associated' means to be joined, often in a loose relationship, as a partner, fellow worker, colleague, friend, companion or ally. Thus, although a person's role in the enterprise may be very minor, a person will still be associated with the enterprise if he knowingly joins with a group of individuals associated in fact who constitute the enterprise."); United States v. Zichetello, 208 F.3d 72, 99 (2d Cir. 2000); United States v. Tocco, 200 F.3d 401, 425 (6th Cir. 2000); United States v. Console, 13 F.3d 641, 653 (3d Cir. 1993); United States v. Martino, 648 F.2d 367, 394 (5th Cir. 1981).

Moreover, "[a] defendant is considered to have 'associated with' a RICO enterprise if he engages in the predicate act violations with other members of the enterprise, even if he is not an actual 'insider' of the enterprise," Blue Cross & Blue Shield of N.J., Inc. v, Philip Morris, Inc.,113 F. Supp. 2d 345, 366 (E.D.N.Y. 2000), or otherwise commits racketeering acts in the conduct of the enterprise's affairs. See, e.g., United States v. Watchmaker, 761 F.2d 1459, 1476 (11th Cir. 1985); United States v. Swiderski, 593 F.2d 1246, 1248-49 (D.C. Cir. 1978). In addition, a defendant "associates with" an enterprise when he conducts business with or through the enterprise, or otherwise has an effect on its activities, including its unlawful activities. United States v. Mokol, 957 F.2d 1410, 1417 (7th Cir. 1992).

The extensive Findings of Fact establish that not only did each Defendant know the general nature and purpose of the Enterprise, and that it extended beyond any one Defendant's individual role, but each Defendant also knew that all the other Defendants were participating in the Enterprise to achieve their shared objective. Defendants formed numerous entities -- both formal and informal -- to achieve their shared objective, as summarized above and set forth in great detail in the Findings of Fact. For example, decades after they had internally recognized that smoking caused disease, all Defendants publicly maintained that the link between smoking and disease remained an "open question." See Findings of Fact Section V(A)(5)(c).

Defendants Liggett and Altria were also associated with the Enterprise. Liggett shared and supported the common objectives of TIRC/CTR with the other Defendants. See generally Findings of Fact Section III. Defendant Altria also shared and supported the common objective of CTR. Altria employees not only knew about the activities of CTR, but were involved in them as well, attending CTR Board of Director meetings and CTR Annual Member meetings and

participating in the approval and funding decisions related to CTR Special Projects. Pollice WD, 6:1-12:12; Pollice TT, 10/04/04, 1526:22-1527:14, 1528:19-1529:1. See Findings of Fact Section III(C). Similarly, Defendant BATCo shared and supported the common objectives of TIRC/CTR. Communications and contact between high level smoking and health research scientists at BATCo and scientists affiliated with TIRC/CTR were frequent and direct. TIRC/CTR employees also traveled to England to attend meetings with BATCo employees and other members of international tobacco organizations. BATCo was a critical participant in worldwide efforts to deny or distort the health risks of ETS exposure, though organizations such as IEMC, INFOTAB, CORESTA, the Verband der Cigaretteindustrie (VdC) (the German trade association of cigarette manufacturers including German and Austrian manufacturers as well as Philip Morris, R.J. Reynolds, and BATCo), and others, and its participation included coordination with CIAR. See Findings of Fact Section III(I).

Throughout the life of the Enterprise, Defendants have coordinated their fraudulent activities through other formal entities, such as TI, CTR, CIAR, and ICOSI as well. See Findings of Fact Section III (C, D, H, I). In addition, Defendants' use of informal organizations such as the Ad Hoc Committee (which was comprised of tobacco industry lawyers and advised Defendants on matters affecting the tobacco industry), the Research Liaison Committee (which was also comprised of lawyers who reviewed, directed and coordinated joint research activity by Defendants), the ETS Advisory Committee (which dealt with issues related to environmental tobacco smoke and led to the formation of CIAR), and the Industry Technical Committee (which was comprised of the scientific directors of the cigarette company Defendants and assisted TIRC/CTR on technical issues related to cigarette design and other matters), allowed the

Enterprise to direct the conduct of its members by providing mechanisms for quickly responding to areas of common concern and develop coordinated strategies for responding to them. See Findings of Fact Sections III(F) and V(G)(a).

The documentary and testimonial evidence of direct communications among Defendants -- phone calls, meetings, and correspondence at the highest levels of their respective corporate, scientific, and legal hierarchies -- is overwhelming. This evidence establishes that each Defendant knew that (and in innumerable instances, knew how) other Defendants were acting to further the common purpose of the Enterprise. See generally Findings of Fact. Moreover, all Defendants maintained their association with all the formal and informal activities comprising the Enterprise through periodic meetings, scientific symposia, correspondence and conversations regarding, inter alia, research projects, public statements, and advertising. Again, all these efforts were designed to advance the primary objective of the Enterprise: to maximize profits by acting in concert to preserve and enhance the market for cigarettes, to avoid legal liability that could result in large damage awards and increase public recognition of the harmful effects of smoking and its addictiveness, and to deflect efforts to make smoking socially unacceptable. In addition, as discussed in Section VII(G)(3)(a), infra, all of the Defendants committed racketeering acts in furtherance of the shared objectives of the Enterprise.

Thus, each Defendant has been proven to be associated with the Enterprise and its ongoing activities.

**2. Each Defendant is Distinct from the Enterprise**

This Court has already held:

> Regardless of how the enterprise is defined (if at all), the

> Government has proven the distinctness element in this case. This Court has already held that an "association-in-fact" enterprise can be a group of corporations. See Philip Morris, 116 F. Supp. 2d at 152-53. Moreover, there is no dispute that each individual Defendant is a separate legal entity. Thus, if this Court should find an enterprise comprised of at least two of the Defendants, the individual Defendants will be distinct from the enterprise itself.

United States v. Philip Morris USA, 327 F. Supp. 2d 13, 18 (D.D.C. 2004).

### F. Each Defendant Participated in the Conduct of the Enterprise

Section 1962(c) requires proof that each defendant "conduct[ed] or participate[d], directly or indirectly, in the conduct of [the] enterprise's affairs." Addressing this element, the Supreme Court held that a defendant is not liable for a substantive RICO violation under 18 U.S.C. § 1962(c) unless the defendant "participate[s] in the operation or management of the enterprise itself." Reves v. Ernst & Young, 507 U.S. 170, 185 (1993). The Court explained:

> Once we understand the word "conduct" to require some degree of direction and the word "participate" to require some part in that direction, the meaning of § 1962(c) comes into focus. In order to "participate, directly or indirectly, in the conduct of such enterprise's affairs," one must have some part in directing those affairs.

Id. at 179. A defendant may satisfy this test even if he did not have significant control over the enterprise's affairs. As the Court pointed out in Reves, "RICO liability is not limited to those with primary responsibility for the enterprise's affairs" and it specifically "disagree[d] with the suggestion of the Court of Appeals for the District of Columbia Circuit that § 1962(c) requires '**significant control** over or within an enterprise.'" Id. at 179 & n.4 (quoting Yellow Bus Lines, Inc. v. Drivers, Chauffeurs & Helpers Local Union 639, 913 F.2d 948, 954 (D.C. Cir. 1990) (en banc) (emphasis in Reves)).

The Supreme Court recognized that:

> We agree that liability under § 1962(c) is not limited to upper management, but we disagree that the "operation or management" test is inconsistent with this proposition. An enterprise is "operated" not just by upper management but also by lower rung participants in the enterprise who are under the direction of upper management. An enterprise also might be "operated" or "managed" by others "associated with" the enterprise who exert control over it as, for example, by bribery.

Id. at 184.

Following Reves, the federal courts of appeals have made it clear that a defendant need not be among the enterprise's "control group" in order to be held liable for a substantive RICO violation; rather, a defendant need only intentionally perform acts that are related to, and further, its operation or management. As the First Circuit explained: "The terms 'conduct' and 'participate' in the conduct of the affairs of the enterprise include the intentional and deliberate performance of acts, functions, or duties which are related to the operation or management of the enterprise." United States v. Weiner, 3 F.3d 17, 24 (1st Cir. 1993) (quoting Reves). Numerous courts have held that Reves is satisfied by evidence that lower-rung members of an enterprise implemented decisions directed by those higher up the ladder in the enterprise or committed racketeering acts which furthered the basic goals of the enterprise at the direction of other members of the enterprise. See, e.g., United States v. Parise, 159 F.3d 790, 796 (3d Cir. 1998); United States v. Shifman, 124 F.3d 31, 35-36 (1st Cir. 1997); United States v. Starrett, 55 F.3d 1525, 1548 (11th Cir. 1995).

In this case, high-level employees of each Defendant not only participated in the operation and management of the Enterprise, but also each Defendant, acting through these

employees, played a significant role in making and implementing decisions in furtherance of the Enterprise's activities and purposes. See generally Findings of Fact.

For example, the member companies, as well as the Tobacco Institute and Altria, participated in the Committee of Counsel to further the Enterprise's objective. The Committee of Counsel made key decisions regarding the Enterprise's activities in many areas including, but not limited to, joint research, litigation defense and public relations. See Findings of Fact Section III(D)(4)(a). In a presentation to the Committee of Counsel in the early 1980s, Ernest Pepples, B&W General Counsel, reported that "[t]he products liability environment is growing more hostile with dramatic speed. . . . A mistake -- any concession -- by a defendant will be costly." Complaining of certain health claims in a Philip Morris advertisement that suggested that certain cigarettes were unsafe, Pepples noted that:

> The frightening mathematics of smoking and health products liability actions is that a verdict against one company will soon result in verdicts against the others. Consequently, the primary function of this Committee of Counsel has been to circle the wagons, to coordinate not only the defense of active cases, but also to coordinate the advice which the General Counsels give to ongoing operations of their companies pertaining to products liability risks.

(no bates) (US 20874).

In addition, each Defendant had some part in directing the affairs of the Enterprise by coordinating and causing the public dissemination of false, misleading or deceptive statements denying the link between smoking cigarettes and adverse health effects, denying the addictiveness of smoking, and by committing related racketeering acts, all in furtherance of the primary, shared objective of the Enterprise. See Findings of Fact V(A, B).

Defendant Altria (f/k/a Philip Morris Companies) argues that, as a parent company to Philip Morris, it did not participate in the affairs of the Enterprise. The Court concludes, however, that Altria did participate in the Enterprise both directly, by joining many of the Enterprise's organizations and by supporting its objective, and indirectly, by controlling the policies and public positions of Philip Morris, the only subsidiary of Altria which manufactures cigarettes. Altria participated directly in the operation and management of the Enterprise through, for example, the Scientific Research Review Committee ("SRRC"), which had responsibility for overseeing "all scientific studies, related to tobacco, smoke and/or smoking, conducted or funded by Philip Morris Companies or any of its subsidiaries around the world" with authority to review and approve all funding of scientific studies related to those topics. SRRC was represented on the following entities which conducted jointly-funded research with other tobacco companies: CIAR; VDC; Association Suisse des Fabricants de Cigarettes; Centre de Cooperation pour Les Rechereches Scientifiques Relatives au Tabac – CORESTA (France); Tobacco Manufacturing Association (TMA), formerly Tobacco Advisory Council (TAC) and Tobacco Research Council (TRC) (UK); and Australian Cigarette Association. Reif PD, U.S. v. Philip Morris, 7/30/03, 49:1- 49:12. After the MSA-mandated dissolution of CTR and CIAR, the SRRC continued to approve research projects funded by Philip Morris through its "External Research Program" which was created in 2000 to take over the function of funding third-party research and eventually took the place of the SRRC. Id. at 194:15-195:13.

Altria also conducted and participated in the conduct of the Enterprise by controlling the positions of Defendant Philip Morris USA. Although Philip Morris has its own communications department, Altria controls its communications on sensitive issues such as litigation against

Philip Morris, Philip Morris's opposition to federal excise taxes on cigarettes, and Philip Morris's support for FDA regulation of tobacco products -- even when those issues affect Philip Morris alone among Altria's many subsidiary companies. John Hoel PD, U.S. v. Philip Morris, 5/30/03, 60:12-63:7, 67:3-22, 166:17-167:14; see also (no bates) (US 44422) (1999 memo from Philip Morris Companies to Philip Morris outlining the company's position and strategy on a proposed federal excise tax increase for cigarettes); US 45675 (2001 memo outlining Philip Morris' position on FDA regulation of cigarettes). As another example, Altria, through its subsidiaries, controls the use of the Marlboro trademark both in the United States and abroad. Myers TT, 5/19/05, 21719:8-21720:13. Altria also established Worldwide Scientific Affairs ("WSA"), an internal working group which coordinates scientific research and science policy, including smoking and health issues, across all of the Altria companies. WSA was organized in regions covering various operating company subsidiaries, including Philip Morris, Philip Morris International, and their subsidiaries, in various parts of the world; scientific policy of Altria subsidiaries was coordinated across these regions in which subsidiaries did business. Reif PD, U.S.. v. Philip Morris, 3/30/04, 316:17-318:7; (no bates) (US 89153); (no bates) (US 89155). Altria also established a department of Worldwide Regulatory Affairs (WRA), to coordinate and ensure consistency in regulatory policy statements and responses across all of the Altria companies. See, e.g., Keane TT, 1/19/05, 10484:19-10489:3; (no bates) (US 41574); Reif PD, U.S. v. Philip Morris, 3/30/04, 344:14-345:11. [Altria argues that there is no legal justification for piercing its corporate veil. However, Defendant's argument misses the point. The United States does not seek to pierce Altria's corporate veil or to hold Altria liable under some form of agency theory. Rather, the Court holds that Altria is liable for its own violations of RICO and its

participation in the Enterprise, in part due to its control of Philip Morris policies, research, and public statements and, in part, due to its own individual actions. Altria is itself party to the scheme to defraud consumers by denying the health effects of smoking, the addictiveness of nicotine, the manipulation of nicotine delivery from cigarettes, the hazards of secondhand smoke, and marketing to youth.]

In addition, the volume and frequency of correspondence between and among Defendants, and the consistent participation of their representatives in regular meetings, demonstrates the degree to which all Defendants directed and coordinated activities in furtherance of the affairs of the Enterprise. See generally Findings of Fact Sections III and V(G). Similarly, most Defendants endeavored to conceal or suppress information and documents and/or to destroy records which may have been detrimental to the interests of the members of the Enterprise, including information which could be discoverable in tobacco and health-related liability cases against Defendants, and provide evidence of the link between smoking cigarettes and adverse health consequences and addictiveness. See Findings of Fact Section V(H).

Accordingly, the evidence establishes that each Defendant participated, directly and indirectly, in the conduct of the Enterprise. Reves, at 179.

### G. Each Defendant Carried Out Its Participation in the Conduct of the Enterprise by Engaging in a Pattern of Racketeering Activity

#### 1. The Government Has Proven that Defendants Caused Mailings and Wire Transmissions, in Furtherance of the Scheme to Defraud, in Violation of 18 U.S.C. § § 1341 and/or 1343

The Supreme Court has ruled that one "'causes' the mails to be used" when "one does an act with knowledge that the use of the mails will follow in the ordinary course of business, or

where such use can reasonably be foreseen, even though not actually intended. . . ." Pereira v. United States, 347 U.S. 1, 8-9 (1954); see also Maze, 414 U.S. at 399-400; United States v. Serang, 156 F.3d 910, 914 (9th Cir. 1998); Sawyer, 85 F.3d at 723 n.6; United States v. Alexander, 135 F.3d 470, 474-75 (7th Cir. 1998); United States v. McClelland, 868 F.2d 704, 707 (5th Cir. 1989); United States v. Haimowitz, 725 F.2d 1561, 1571 (11th Cir. 1984); United States v. Diggs, 613 F.2d 988, 998 (D.C. Cir. 1979).

The "causing" requirement does not impose an onerous burden. United States v. Weisman, 83 F.2d 470, 474 (2d Cir. 1936) (interpreting 18 U.S.C. § 338, the former mail fraud statute). In Weisman, the defendant, who operated a fraudulent property purchase scheme, responded to a series of advertisements placed by individuals seeking to sell properties. The court of appeals noted that "Weisman, so far as possible, abstained from using the mails in connection with his fraudulent transactions." Id. at 472. However, with regard to one customer, Lewis, the defendant dictated a typewritten response to Lewis' advertisement, and the defendant's agent delivered the response to the newspaper by hand delivery. Id.

Unbeknownst to Weisman, Lewis had left instructions for the newspaper that any responses be forwarded to him by mail, and the newspaper followed these directions by sending Weisman's fraudulent response to Lewis. Id. Therefore, "[i]n spite of [Weisman's] general efforts on his part to avoid the use of the mails, they undoubtedly were used for the purpose of executing the schemes to defraud" his victims. Id. Moreover, despite the fact that Weisman had not himself used the mails, and neither intended -- nor even knew of -- Lewis' instructions to the newspaper to forward Weisman's response, he in fact "caused" the letter to be mailed:

When Weisman had a letter delivered to the [New York] Times

> office in New York, there was every chance that the Times would forward it to its customer by mail. It has long been settled that a defendant may cause a letter to be sent or delivered by mail though such a mode of transmission was neither known nor intended, provided mailing or delivery by post might reasonably have been foreseen.

Id. at 473.

To counter the overwhelming circumstantial evidence showing the likelihood that Defendants would use mailings and wire transmissions to conduct the affairs of the Enterprise, Defendants rely on a Fifth Circuit case which held that "the use of circumstantial evidence does not relieve the Government of its burden of establishing use of the mails 'beyond a mere likelihood or probability.'" United States v. Massey, 827 F.2d 995, 999 (5th Cir. 1987). In Massey, the Fifth Circuit held that "[c]ircumstantial evidence 'such as testimony regarding office practice' is sufficient only 'so long as the circumstances proven directly support the inference and exclude all reasonable doubt to the extent of overcoming the presumption of innocence." Id. However, in that criminal case, evidence was presented which suggested it was just as likely that the mails weren't used as it was that they were. Thus, in Massey, a criminal case, unlike here, there was reasonable doubt as to whether the mails were used. In this case, the United States has proven by a preponderance of the evidence, and even beyond a reasonable doubt, that the mails and wires were used to transmit Defendants' fraudulent statements. Indeed, Defendants could not have carried out the Enterprise's scheme to defraud without mailings and wire transmissions of their fraudulent statements.

To establish a charge of mail or wire fraud under 18 U.S.C. §§ 1341 and 1343, the matter or communication sent via the mails or wires need not itself contain false or misleading

information or evidence fraud. Rather, "'innocent' mailings -- ones that contain no false information -- may supply the mailing element." Schmuck v. United States, 489 U.S. 705, 715 (1989) (citing Parr v. United States, 363 U.S. 370, 390 (1960)); see also Philip Morris, 304 F. Supp. 2d at 70.

The D.C. Circuit has long held that 18 U.S.C. § 1341 does not require that any mailing utilized to establish a mail fraud prosecution be false: "Under the mail fraud statute it is not necessary that the individual mailing relied upon by the prosecution be shown to be in any way false or inaccurate, if the matter mailed is utilized in furtherance of or pursuant to the scheme to defraud." United States v. Reid, 533 F.2d 1255, 1263 (D.C. Cir. 1976) (footnote omitted); see also Deaver v. United States, 155 F.2d 740, 744 (D.C. Cir 1946) ("a 'scheme' may be fraudulent though no misrepresentation is made"); Tabas v. Tabas, 47 F.3d 1280, 1294 n.18 (7th Cir. 1995); Kehr Packages, Inc. v. Fidelcor, Inc., 926 F.2d 1406, 1413-14 (7th Cir. 1991) ("The actual violation is the mailing, although the mailing must relate to the underlying fraudulent scheme. . . . The mailing need not contain any misrepresentations. Rather 'innocent' mailings – ones that contain no false information – may supply the mailing element."). Moreover, "it does not matter that some of these mailings contained no false or misleading information, and individually contained no pecuniary loss; routine and innocent mailings can also supply an element of the offense of mail fraud." United States v. Hickok, 77 F.3d 992, 1004 (7th Cir. 1996) (citing United States v. Brocksmith, 991 F.2d 1363, 1368 (7th Cir. 1993)).

Moreover, the mailing or wire transmission need not be essential to the scheme or succeed in deceiving; rather it need only be "for the purpose of executing the scheme." United States v. Maze, 414 U.S. 395, 400 (1974); see also United States v. Coyle, 63 F.3d 1239, 1244

(3d Cir. 1995); United States v. Waymer, 55 F.3d 564, 569 (11th Cir. 1995); Kehr Packages, 926 F.2d at 1413; United States v. Haimowitz, 725 F.2d 1561, 1571 (11th Cir. 1984); United States v. Garner, 663 F.2d 834, 838 (9th Cir. 1981); Reid, 533 F.2d at 1264. "The relevant question at all times is whether the mailing is part of the execution of the scheme as conceived by the perpetrator at the time, regardless of whether the mailing later, through hindsight, may prove to have been counterproductive . . . ." Schmuck, 489 U.S. at 715. In this case, Defendants caused the mailings and wire transmissions in order to communicate their fraudulent statements to the American public. See generally, Findings of Fact.

It should be noted that courts have taken a flexible approach to the "in furtherance" requirement, holding that it is sufficient that the mailing or wire transmission was "incident to an essential part of the scheme. . . or a step in [the] plot." Schmuck, at 711 (quoting Badders v. United States, 240 U.S. 391, 394 (1916)); see also United States v. Sun-Diamond Growers, 138 F.3d 961, 972 (D.C. Cir. 1998), aff'd, 526 U.S. 398 (1999); Coyle, 63 F.3d at 1244; United States v. Waymer, 55 F.3d 564, 569 (11th Cir. 1995); United States v. Hollis, 971 F.2d 1441, 1448 (10th Cir. 1992); United States v. Wormick, 709 F.2d 454, 462 (7th Cir. 1983) ("mailings made to promote the scheme . . . or which facilitate the concealment of the scheme"); United States v. McClelland, 868 F.2d 704, 707-09 (5th Cir. 1989) (mailings which tended to further the scheme).

In this case, all of the Racketeering Acts promoted and furthered Defendants' execution of their fraudulent scheme to maximize their profits, to avoid costly verdicts, and to derail attempts to make smoking socially unacceptable by perpetrating the deceptions which have already been enumerated and described in great detail in the Findings of Fact.

The evidence shows that it was the Defendant's routine or standard business practice -- which one would expect of any major corporation -- to send or receive matters via the mails or wire transmission. Moreover, Defendants spoke or wrote their fraudulent statements with the knowledge that the use of the mails and wires "c[ould] reasonably be foreseen." Pereira, 347 U.S. at 8-9. Finally, each of the alleged mailings and wire transmissions was in furtherance of the overarching scheme to defraud. Accordingly, the United States has proven that Defendants "caused" the mailings and wire transmissions underlying the Racketeering Acts in an effort to further the scheme to defraud.

**a. Defendants' Routine Mailing Practices**

The evidence is undisputed that Defendants employed the following routine mailing practices.

**(1) Philip Morris**

All of Philip Morris' incoming mail flows either to its Richmond, Virginia, or New York City, New York mail room facilities. Approximately 80% of its United States mail would have flowed through Philip Morris' central Richmond facilities prior to September 11, 2001. Since September 11, 2001, approximately 85% of the incoming correspondence and packages arriving at Philip Morris' Richmond mail room was sent by U.S. Mail. Philip Morris estimated that as of July 1, 2002, about three-quarters of items arriving in its New York mail room were sent by U.S. Mail. Since September 11, 2001, 75% of the mails and materials Philip Morris has sent have been transmitted by U.S. Mail. Philip Morris did not begin using private courier or commercial carriers, e.g. Fedex (formerly Federal Express), DHL, Airborne Express, and United Parcel Service, to send correspondence or packages any earlier than 1967. Philip Morris now uses fax

machines, an Internet web site, and e-mail, as well as United States Mail, to transmit documents. Dale Frazier Dep., 33:20-34:10, 20:12-20:17, 12:12-13:17, 22:6-18, 42:19-43:17, 23:10-23:15, 42:19-43:17.

**(2) Lorillard**

Since 1994, seventy-five percent of the total mailings to and from Lorillard have been made via U.S. Mail. Lorillard generally sends its public statements and press releases electronically to the news organizations. Becky Wright Dep., 6/27/02, 14:11-14:25.

**(3) Liggett**

Liggett sends correspondence by U.S. Mail and commercial carriers. Liggett did not transmit documents by facsimile until the mid-1980s.

**(4) R.J. Reynolds**

In 1968, U.S. Mail was generally R.J. Reynolds' only means of transmitting documents. During the 1970s, most of R.J. Reynolds' correspondence was transmitted by U.S. Mail. Gwendowlyn Beck Joyner Dep., 6/28/02, 14:18-15:22.

**(5) The Tobacco Institute**

The Tobacco Institute transmitted its booklet, "Helping Youth Decide," by U.S. Mail when single copies were requested. U.S. Mail was the Tobacco Institute's most frequent mode of sending correspondence. Approximately 90% of its incoming mail was delivered by U.S. mail and 90% of its press releases were sent by U.S. Mail. William Adams Dep. 6/19/02, 448:02-11, 454:19-455:01, 479:20-480:04.

**(6) Council For Tobacco Research**

The Council For Tobacco Research ("CTR") sent its annual reports through mailing

houses. Individual requests for the annual reports were answered with U.S. Mail packages. More often than not, CTR used the U.S. Mail to send award letters, checks, and routine correspondence to grantees. It used U.S. Mail to send correspondence and funds to special projects recipients, and the recipients' affiliated institutions, as well as to send minutes of board of directors meetings and annual meetings. CTR used U.S. Mail to send agenda books containing applications for review by its Scientific Advisory Board. CTR did not acquire a fax machine until 1989 or 1990. Harmon McAllister Dep, 5/24/02, 65:11-66:19, 67:07-18.

**b. Prior Stipulations and Admissions Establish the Mailings and Wire Transmissions Underlying 79 of the Alleged 145 Racketeering Acts**

Defendants' stipulations and admissions proved that they "caused" the mailings and wire transmissions underlying the following 79 Racketeering Acts: 3, 4, 5, 6, 7, 8, 10, 11, 12, 17, 18, 21, 23, 24, 25, 26, 27, 30, 31, 32, 33, 34, 35, 38, 42, 44, 45, 46, 49, 50, 51, 52, 53, 54, 57, 60, 63, 66, 67, 68, 70, 73, 77, 79, 81, 82, 86, 87, 88, 89, 90, 94, 96, 98, 99, 103, 104, 105, 106, 108, 109, 110, 114, 115, 116, 117, 118, 121, 122, 124, 125, 127, 129, 132, 133, 143, 144, 145, and 146. See United States Proposed Findings of Fact, Section IV, Paragraphs 1-5; see also United States Final Proposed Conclusions of Law (vol. 1), (I)(G)(5)(d).

**c. The Mailings and Wire Transmissions Underlying the Alleged Racketeering Acts Which Involve Defendants' Press Releases and Advertisements Were Disseminated to the Public Via the United States Mails and Wire Transmissions**

The United States established that Defendants' issued their advertisements and press releases in various newspapers and magazines, that were thereafter disseminated to the public via the United States Mails. For example, the "Frank Statement to Cigarette Smokers", which

underlies Racketeering Act 1, was published on January 4, 1954 in 448 newspapers throughout the United States.

The Court has already taken judicial notice that since 1954, the following newspapers have been routinely sent to subscribers via U.S. Mail, and that this practice was reasonably foreseeable as to each Defendant: Atlanta Constitution*;* Atlanta Journal*;* Boston Globe*;* Charlotte Observer*;* Chicago Tribune*;* Los Angeles Times*;* Miami Herald*;* New York Times*;* San Diego Union-Tribune*;* Washington Post. Order #616. In addition, the Court has already taken judicial notice that the following newspapers have been routinely sent to subscribers via United States Mail beginning in the years noted, and that this practice was reasonably foreseeable as to each Defendant: Atlanta Journal-Constitution - 2001*;* New York Post - 1993*;* Philadelphia Inquirer - 1970*;* Village Voice - 1959. Id.

The Court has taken judicial notice that since 1954, the following magazines have been routinely sent to subscribers via U.S. Mail, and that this practice was reasonably foreseeable as to each Defendant: Car Craft*;* 4-Wheel & Off-Road*;* Glamour*;* Hot Rod*;* Mademoiselle (through 2001); Motorcyclist*;* Playboy*;* Vogue. Id. The Court has taken judicial notice that the following magazines have been routinely sent to subscribers via U.S. Mail beginning in the years noted, and that this practice was reasonably foreseeable as to each Defendant: Allure - 1991; ESPN The Magazine - 1998; GQ-Gentlemen's Quarterly - 1957; Maxim - 1997. Id. Accordingly, Defendants caused the Racketeering Acts by publishing press releases and advertisements in the listed newspapers or magazines.

Moreover, when a Defendant sends press releases and advertisements to newspapers and magazines for dissemination, it is obviously reasonably foreseeable that the newspapers and

magazines will use the U.S. Mail to send such matter to their subscribers, and therefore, that such Defendant "caused" the use of the mails within the meaning of the mail fraud statute. See, e.g., Carpenter, 484 U.S. at 28 ("[U]sing the wires and the mail to print and send the [Wall Street] Journal to its customers" containing the column at issue "was not only anticipated but an essential part of the scheme."); Atlas Pile Driving Co. v. DiCon Financial Co., 886 F.2d 986, 992 (8th Cir. 1989) ("[I]t was almost certain that notice of [foreclosure sales] would be mailed to other claimants or that notice would be published in newspapers and copies of the notice distributed through the mails."); United States v. Bowers, 644 F.2d 320 (4th Cir. 1981) (holding that it was reasonably foreseeable that newspapers would be mailed to some subscribers containing the advertisements the defendant placed in the newspaper); United States v. Shepherd, 587 F.2d 943, 944 (8th Cir. 1978); United States v. Buchanan, 544 F.2d 1322, 1324-25 (5th Cir. 1977); Pritchard v. United States, 386 F.2d 760, 764 (8th Cir. 1967) (same for advertisements in magazines as well as newspapers); Atkinson v. United States, 344 F.2d 97, 98-99 (8th Cir. 1965) (same for advertisements in newspapers); Weisman, 83 F.2d at 473 (holding that it was reasonably foreseeable to the defendant that the letter he hand-delivered to a newspaper in response to an advertisement would be sent by the newspaper to its customer via the U.S. mails).

For the foregoing reasons, it is clear beyond any question that Defendants caused the mailings and wire transmissions underlying the 30 Racketeering Acts involving the news media's dissemination of Defendants' press releases and advertisements to their subscribers.

**d. Defendants Caused Wire, Radio, and Television Transmissions Underlying the Racketeering Acts**

Defendants caused the Racketeering Acts which involved wire, radio, and television

transmissions. As Pereira noted, "Where one does an act with knowledge that the use of the mails [or wires] will follow in the ordinary course of business, or where such use can reasonably be foreseen, even though not actually intended, then he 'causes' the mails to be used." 347 U.S. at 8-9 (1954). Here, too, there can be no question that it was reasonably foreseeable that Defendants' representatives' statements would be broadcast to the public via the wire, radio, and television transmissions. Indeed, 18 U.S.C. § 1343 explicitly provides that it applies when a person "causes to be transmitted by means of . . . television communication in interstate or foreign commerce" a communication to execute a scheme to defraud.

For instance, various statements from Defendants' internet websites are or were published on the worldwide web, a global network of computers which employs telephone, fiberoptic, and other wire and wireless infrastructures. Similarly, telephone communications, telexes, cable letters, telegrams, e-mails, facsimile transmissions, and television and radio involve the use of wire and radio/television signals in interstate and/or foreign commerce. Therefore, Racketeering Acts 103-116, 130, 134, 137, and 143-147 were transmitted by use of the wires, radio, and television signals in interstate and/or foreign commerce. 689033421-3421 (US 31045); 508293416-3416 (US 21514); 1002605545-5564 (US 35622); 680273641-3643 (US 20998); 504331775-1776 (US 22738); 301030943-0944 (US 46577); 2029200293-0294 (US 21537); 450010016-0019 (US 21539); 690149518-9531 at 9520 (US 21046); 690149518-9531 (US 78732); TLT0770044-0049 (US 86656); TLT0770095-0128 (US 72410).

**e. The Mailings and Wire Transmissions Involving Communications Were Sent or Received by Defendants or their Representatives**

Defendants caused the mailings and wire transmissions, which involve communications

sent or received by Defendants and their representatives, that underlie the remaining Racketeering Acts. It was Defendants' routine or standard business practice to send or receive matters via the mails or wire transmissions. Therefore, it was reasonably foreseeable that the mails would be used by a Defendant or by a third-party as a result of a Defendant's actions in the ordinary course of business. Moreover, 33 of the 41Racketeering Acts which Defendants challenge involve correspondence mailed from one city to another. They are Racketeering Acts 2, 3, 6, 7, 9, 10, 12, 13, 14, 15, 16, 19, 20, 21, 22, 27, 33, 40, 41, 58, 62, 69, 71, 72, 74, 75, 79, 80, 81, 85, 117, 132 and 133.

In addition, Defendants "caused" the mailings of matters which they had sent or received in response to correspondence that they sent. See, e.g., United States v. Hollis, 971 F.2d 1441, 1448 (10th Cir. 1992); McClelland, 868 F.2d at 707; Diggs, 613 F.2d at 998-99; United States v. United Medical & Surgical Supply Corp., 989 F.2d 1390, 1404 (4th Cir. 1993) (defendant's broker mailed fraudulent reports); United States v. Bortnovsky, 879 F.2d 30, 36-37 (2d Cir. 1989) (defendant's agent sent the mailings); United States v. Tiller, 302 F.3d 98, 103 (3d Cir. 2002) (defendant's employer). For purposes of Section 1341, when a defendant sets a course of events in motion, and then receives a mailing in response to his action, he is deemed to have "caused" the use of the mails. See, e.g., United States v. Toliver, 541 F.2d 958, 966-67 (2d Cir. 1976) (where defendants made fraudulent representations to state unemployment office, which then mailed unemployment checks to defendants, defendants "caused" the mailings); United States v. Otto, 742 F.2d 104, 109 (3d Cir. 1984) (letter written by investor-victim was responsive to defendant's failure to fulfill terms of earlier agreement); United States v. Weisman, 83 F.2d 470, 472-73 (2d Cir. 1936). [Furthermore, it is important to note that 18 U.S.C. § 1341

proscribes not only sending the communication in furtherance of the scheme to defraud, but also receiving the communication. See, e.g., United States v. Coyle, 943 F.2d 424, 425 (4th Cir. 1991). For instance, as detailed in Racketeering Act 17, CTR mailed a communication to Liggett, Philip Morris, Reynolds, Brown & Williamson, and Lorillard. In addition to the cigarette company Defendants' "causing" CTR to send the mailing, they (as members of the scheme to defraud) are liable for receiving it.]

In light of Defendants' routine mailing practices, Defendants "caused" the mailings and wire transmissions of correspondence they sent or received which furthered the Enterprise's scheme to defraud.

**f. The Cigarette Company Defendants Are Liable for the Mailings and Wire Transmissions Underlying the Racketeering Acts Committed By Defendants CTR and TI**

All Defendant cigarette companies who were members of or involved in CTR and TI are liable for the mailings and wire transmissions caused by these organizations under the predicate provisions of 18 U.S.C. §§ 1341 and 1343, the mail and wire fraud statutes, respectively.

Each of the six cigarette company Defendants participated in the creation, funding, and support of TIRC/CTR and TI. See Findings of Fact Sections III(B, C, D). They formed, funded, and staffed these entities in order that they would further the Enterprise's scheme to defraud. Specifically, these entities funded research supporting Defendants' position on smoking and health issues and served as a forum to issue public statements on smoking and health and related matters. See id. The cigarette company Defendants provided directors and officers of the organizations; reviewed, approved or recommended approval of various research proposals and

public statements (including research reports and press releases); and provided many other forms of advice and assistance which both enabled and encouraged the mailings and wire transmissions at issue. See id. Indeed, Defendants' essential purpose in forming CTR and TI was to use them to issue advertisements, press releases, and research reports.

There can be no question that the cigarette company Defendants are liable for the Racketeering Acts committed by CTR and TI under the mail and wire fraud statutes. As has already been noted, to establish a violation of the mail fraud statute it is not necessary to show that the defendant itself actually mailed anything; it is sufficient instead to prove that it caused a mailing or that use of the mails was reasonably foreseeable from its actions. The mailings and wire transmissions of CTR and TI were reasonably foreseeable or otherwise "caused" by the six cigarette company Defendants, given the involvement of those Defendants in their creation, funding, and on-going activities. Therefore, the Defendant tobacco companies must be held liable for the mailings of CTR and TI. United States v. Rodgers, 624 F.2d 1303, 1308-1309 (5th Cir. 1980) ("co-schemers" liable for mail fraud); United States v. Craig, 573 F.2d 455 (7th Cir. 1977); Maxwell, 920 F.2d at 1036 ("All that is required is that appellant have knowingly and willingly participated in the scheme; she need not have performed every key act herself"); Amrep Corp., 560 F.2d at 545 ("So long as a transaction is within the general scope of a scheme on which all defendants had embarked, a defendant not directly connected with a particular fraudulent act is nonetheless responsible therefor if it was of the kind as to which all parties had agreed."); United States v. Stapleton, 293 F.3d 1111, 1115-16 (9th Cir. 2002); United States v. Joyce, 499 F.2d 9, 16 (7th Cir. 1974) ("As a member of a mail fraud scheme, [the defendant] was responsible for any letter which any other member of the scheme caused to be mailed in

execution of the scheme”).

### 2. The First Amendment Does Not Protect Defendants’ False and Misleading Public Statements

Defendants argue that all of their public statements denying nicotine manipulation, the addictiveness of cigarettes, and youth marketing are statements of opinion, made in the course of petitioning the government, and, therefore, deserve the full protection of the First Amendment. Defs.’ Corrected Post-Trial Brief at 82, 87. Specifically, Defendants rely upon the Noerr-Pennington doctrine to immunize all of their public statements under the First Amendment. Id. Defendants also allege that the Government must prove by "a heightened 'clear and convincing' standard of proof," rather than a "preponderance of the evidence" standard, that all their statements were intentionally fraudulent. Id.

The Court finds that only those statements Defendants made directly to legislative bodies merit Noerr-Pennington immunity. However, to be clear, it must be remembered that the vast majority of Defendants' statements were made with the primary purpose of influencing smokers, potential smokers, and the general public and are, therefore, not protected by the Noerr-Pennington doctrine. As to the latter category, the Court finds that the Government has met its burden of proof to show that those statements were fraudulent.

#### a. Noerr-Pennington Protects Only Those Defendants’ Statements Made in the Course of Petitioning the Legislature; It Does Not Immunize Statements Made with the Purpose of Influencing Smokers, Potential Smokers, and the General Public

The Noerr-Pennington doctrine was developed as a direct application of the Petition Clause of the First Amendment. See Falise v. American Tobacco Co., 94 F. Supp. 2d 316, 350

(E.D.N.Y. 2000) (quoting Kottle v. Northwest Kidney Centers, 146 F.3d 1056, 1059) (9th Cir. 1998)). The doctrine holds that "the Sherman Act does not prohibit . . . persons from associating together in an attempt to persuade the legislature or the executive to take particular action with respect to a law that would produce a restraint or a monopoly." E. R.R. Presidents Conference v. Noerr Motor Freight, Inc., 365 U.S. 127, 136 (1961); accord United Mine Workers v. Pennington, 381 U.S. 657 (1965).

Clearly, not every public relations campaign qualifies under Noerr-Pennington as "petitioning the government;" if that were the case, the Noerr-Pennington doctrine would extend to virtually all activities. [See Falise, 94 F. Supp. 2d at 351-352, where plaintiffs alleged that defendant tobacco manufacturers had historically invested RICO racketeering funds in a "scorched earth litigation strategy" designed to intimidate them into not suing defendants. Defendants had argued that the Noerr-Pennington doctrine immunized their earlier litigation strategies.] Here, the majority of the racketeering acts alleged as part of the addiction and manipulation sub-schemes do not constitute petitioning activity before the Congress, or the executive branch. On the contrary, most of those acts are simply press releases or advertisements aimed at influencing smokers, potential smokers, and the public, and do not constitute "attempt[s] to persuade the legislature or the executive to take particular action," Noerr Motor Freight, 365 U.S. at 136. See e.g., Racketeering Acts Nos. 15, 25, 37, 39, 53, 56, 58, 60, 63, 71, 72, 74, 75, 79, 81, 103, 104, 116, 132, and 133. Consequently, these acts do not fall under the protective umbrella of the Noerr-Pennington doctrine.

Six Racketeering Acts remain. They are comprised of the CEOs' testimony before the Waxman Subcommittee and the letter from Philip Morris to Rep. Waxman and fall into a

different category. Unlike Defendants' many statements that target smokers, potential smokers, and the general public, the remaining six acts constitute direct attempts to persuade government officials. The Court finds that these six acts merit Noerr-Pennington immunity as "petitioning activity" and are therefore not actionable.

**b. The Government Has Met the Necessary Standard of Proof to Show that Defendants' Actions Are Fraudulent**

"[T]he First Amendment does not shield fraud." Moreover, as the Supreme Court has recently ruled, "simply labeling an action one for 'fraud' . . . will not carry the day." Illinois ex rel. Madigan v. Telemarketing Assocs., 538 U.S. 600, 612, 617 (2003). Generally, a plaintiff must prove five elements by "clear and convincing evidence" to prevail on a fraud claim. See e.g., Armstrong v Accrediting Council Continuing Educ. & Training, Inc., 961 F. Supp. 305, 309 (D.D.C. 1997). They are: (1) a false representation, (2) in reference to a material fact, (3) made with the knowledge of its falsity, (4) with the intent to deceive, and (5) on which action is taken in reliance upon the representation. Id.

The Government claims that a "clear and convincing" standard of proof does not apply here, arguing that "fraudulent representations are judged by the same standard of proof -- preponderance of the evidence – applicable to the United States' civil RICO and RICO conspiracy claims." Defendants, on the other hand, cite a number of Supreme Court opinions, such as Madigan, for the proposition that a clear and convincing standard of proof is required. Defs.' Corrected Post-Trial Brief at 27.

Defendants are correct that Madigan provides at least some support for a clear and convincing standard of proof requirement in cases of fraudulent representation involving speech. See 538 U.S. at 619-21. Madigan held that "[a]s restated in Illinois case law, to prove a

defendant liable for fraud, the complainant must [show that defendant's actions satisfy the five requirements for fraud and] these showings must be made by clear and convincing evidence." Id. at 620 (emphasis added) (citations omitted). Moreover, "[e]xacting proof requirements of this order . . . have been held to provide sufficient breathing room for protected speech." Id. at 620-21 (citing New York Times Co. v. Sullivan, 376 U.S. 254, 279-80 (1964)); Bose Corp. v. Consumers Union of United States, Inc., 466 U.S. 485, 502 (1984)). This Court has previously noted that because Madigan was applying Illinois state law, which did mandate the use of a clear and convincing standard of proof, that the Supreme Court did not hold that that standard was necessarily mandated in all federal cases involving fraud. See Mem. Op. to Order # 624 at 3.

In this case, the evidence of Defendants' fraud is so overwhelming that it easily meets the clear and convincing standard of proof. The Findings of Fact lay out in exhaustive detail the myriad ways in which Defendants made public statements, often directly to consumers, which were flatly contradicted by their internal correspondence, knowledge, and understanding. Thus, whichever standard of proof is required to show fraud, the Court finds that the Government has met its burden.

### 3. Defendants Engaged in a Pattern of Racketeering Activity in Furtherance of the Scheme to Defraud

#### a. Each Defendant Committed at Least Two Racketeering Acts, the Last One of Which Occurred Within Ten Years from the Commission of the Prior Racketeering Act

To establish the commission of a pattern of racketeering activity, 18 U.S.C. §§ 1961(5) and 1962(c) require that each defendant commit at least two acts of racketeering, "the last of which occurred within ten years . . . after the commission of a prior" racketeering act. H.J. Inc. v. Northwestern Bell Tel. Co., 492 U.S. 229, 237 (1989). Because each Defendant has committed

two or more Racketeering Acts within ten years of each other, that standard is clearly met in this case. See generally Findings of Fact.

Defendants assert, without citing any authority or offering any analysis, that the United States must prove that each Defendant committed two or more racketeering acts within ten years of each other as to each aspect of the over-arching scheme to defraud. Defs.' Corrected Trial Brief at 114. Defendants are wrong. The requirement of two racketeering acts pertains to the pattern of racketeering activity, which in this case is the overall scheme to defraud itself, and not the hundreds of individual discrete predicate activities that comprise it.

18 U.S.C. § 1961(5) establishes that a "pattern of racketeering activity requires at least two acts of racketeering activity, one of which occurred after October 15, 1970 (the date on which the RICO statute was enacted) and the last of which occurred within ten years (excluding any period of imprisonment) after the commission of a prior act of racketeering activity." The Supreme Court has concluded that in light of the "very relaxed limits of the pattern concept fixed in § 1961(5) . . . Congress intended to take a flexible approach, and envisaged that a pattern might be demonstrated by reference to a range of different ordering principles or relationships between predicates," H.J., Inc. v. Nw. Bell Tel. Co., 492 U.S. 229, 239 (1989); see also Sedima, S.P.R.L. v. Imrex Co., 473 U.S. 479, 486-490 (1985). Furthermore, the Court explained that "RICO's legislative history reveals Congress' intent that to prove a pattern of racketeering activity a plaintiff or prosecutor must show that the racketeering predicates are related, and that they amount to or pose a threat of continued criminality." Id.

The Supreme Court has explained that "criminal conduct forms a pattern if it embraces criminal acts that have the same or similar purposes, results, participants, victims, or methods of

commission, or otherwise are interrelated by distinguishing characteristics and are not isolated events. . . . We find no support . . . that predicate acts of racketeering may form a pattern only when they are part of separate illegal schemes." H.J., Inc. at 236. Under this reasoning, it is clear that the predicate acts of racketeering need not relate to separate illegal schemes, nor must they relate to each aspect of the over-arching scheme to defraud. Rather, the evidence cited in the Findings of Fact demonstrates that each Defendant has therefore committed more than two Racketeering Acts with respect to the Enterprise's overall scheme to defraud.

**b. The Racketeering Acts Are Related and Continuous**

The Supreme Court has stated that "to prove a pattern of racketeering activity a plaintiff or prosecutor must show that the racketeering predicates are related," and that they either extended over "a substantial period of time," "or pose a threat of continued criminal activity." H.J. Inc. v. Northwestern Bell Tel. Co., 492 U.S. 229, 239, 242 (1989). This requirement is commonly referred to as the "continuity plus relationship test." Defendants' activities easily meet the test for "a pattern of racketeering activity" articulated by the Supreme Court.

**(1) The Racketeering Acts Are Related**

As already noted, the requisite relationship is established when the racketeering acts "have the same or similar purposes, results, participants, victims, or methods of commission, or otherwise are interrelated by distinguishing characteristics and are not isolated events." Id. at 240. "Congress intended to take a flexible approach, and envisaged that a pattern might be demonstrated by reference to a range of different ordering principles or relationships between predicates, within the expansive bounds set." Id. at 238.

The federal courts of appeals have repeatedly held that the predicate racketeering acts

under RICO need not be similar or directly related to each other. Rather, it is sufficient that the racketeering acts be related in some way to the affairs of the Enterprise, including furthering its goals or benefitting it in some way. See, e.g., United States v. Polanco, 145 F.3d 536, 541 (2d Cir. 1998); United States v. White, 116 F.3d 903, 925 n.7 (D.C. Cir. 1997) (stating in jury instructions that in order to show a pattern of racketeering activity, the government must prove that "the racketeering acts had the same or similar purposes, results, participants, victims or methods of commission or were otherwise interrelated by distinguishing characteristics and were not isolated events"); United States v. Eufrasio, 935 F.2d 553, 566 (3d Cir. 1991); United States v. Gonzalez, 921 F.2d 1530, 1540 (11th Cir. 1991); United States v. Angiulo, 897 F.2d 1169, 1180 (1st Cir. 1990); United States v. Indelicato, 865 F.2d 1370, 1382-84 (2d Cir. 1989) (en banc); United States v. Qaoud, 777 F.2d 1105, 1115 (6th Cir. 1985); United States v. Provenzano, 688 F.2d 194, 200 (3d Cir. 1982); United States v. Lee Stoller Enter., Inc., 652 F.2d 1313, 1319 (7th Cir. 1981); United States v. Elliott, 571 F.2d 880, 899 (5th Cir. 1978).

Defendants' Racketeering Acts are related. While Defendants argue that a "multiplicity of mailings does not necessarily translate into a 'pattern' of racketeering activity," Lipin Enters., Inc. v. Lee, 803 F.2d 322, 325 (7th Cir. 1986) (Cudahy, J., concurring), the evidence in this case demonstrates far more than a mere multiplicity of mailings. All the Racketeering Acts have the same or similar purposes and methods of commission: they each involve mailings or wire transmissions by Defendants to carry out the Enterprise's overarching scheme to defraud consumers and potential consumers of cigarettes. Moreover, all the predicate Racketeering Acts furthered the goals and purposes of the Enterprise to sustain and maximize profits, to avoid costly liability judgments, and to frustrate attempts to make smoking socially unacceptable.

### (2) The Racketeering Acts Have Been Continuous

Many forms of proof may establish the required "continuity." H.J. Inc., 492 U.S. at 240-43. By way of illustration, the Supreme Court approved several alternative methods for meeting the "continuity" requirement, stating:

> [1] A party alleging a RICO violation may demonstrate continuity over a closed period by proving a series of related predicates extending over a substantial period of time.
> . . .
>
> [2] A RICO pattern may surely be established if the related predicates themselves involve a distinct threat of long-term racketeering activity, either implicit or explicit.
>
> . . .
>
> [3] The continuity requirement is likewise satisfied where it is shown that the predicates are a regular way of conducting defendant's ongoing legitimate business (in the sense that it is not a business that exists for criminal purposes), or of conducting or participating in an ongoing and legitimate RICO "enterprise."

Id. at 242-243. Following H.J. Inc., our Circuit has also adopted a flexible approach to determine whether "continuity" has been proven. United States v. Richardson, 167 F.3d 621, 626 (D.C. Cir. 1999).

In addition, as the Supreme Court, the D.C. Circuit and other courts have ruled, the requisite continuity may be shown by the overall nature of the Enterprise and its members, considered in their entirety, including uncharged unlawful activities. H.J. Inc., 492 U.S. at 242-43; Richardson, 167 F.3d at 626.

Here, Defendants' 145 racketeering acts occurred over a period of 45 years, which surely constitutes a "substantial period" of time. Moreover, these racketeering acts "are a regular way of conducting defendant's ongoing legitimate business," H.J. Inc., 492 U.S. at 243. Because

Defendants are in a position to continue their fraudulent activity, "the racketeering acts themselves include a specific threat of repetition extending indefinitely into the future." Id. at 242. Thus, the requisite pattern of racketeering activity has been established.

**4. Defendants Acted with the Specific Intent to Defraud or Deceive**

Mail and wire fraud are specific intent crimes. United States v. Walker, 191 F.3d 326, 334 (2d. Cir. 1999). The D.C. Circuit has stated that specific intent "requires more than a mere general intent to engage in certain conduct and to do certain acts." United States v. Rhone, 864 F.2d 832, 834 (D.C. Cir 1989). Rather, specific intent requires a showing that a person "knowingly does an act which the law forbids, intending with bad purpose either to disobey or disregard the law." Id. In committing the racketeering acts that are at issue in this case, each Defendant acted with the requisite specific intent to defraud.

Liability for mail and wire fraud attaches if, under the totality of the circumstances, the defendant intentionally devised or participated in a scheme reasonably calculated to deceive with the purpose of either obtaining or depriving another of money or property. See, e.g., McEvoy Travel Bureau, Inc. v. Heritage Travel, Inc., 904 F.2d 786, 791-93 (1st Cir. 1990); United States v. Cronic, 900 F.2d 1511, 1513-14 (10th Cir. 1990); Atlas Pile Driving, 886 F.2d at 991; Blachly v. United States, 380 F.2d 665, 671 (5th Cir. 1967); Silverman v. United States, 213 F.2d 405, 406 (5th Cir. 1954); Deaver, 155 F.2d at 743. Each individual racketeering act does not have to independently satisfy all of the elements of the mail and wire fraud statutes; the thing mailed or transmitted need only be intended to further the scheme in some way. Schmuck v. United States, 489 U.S. 705, 715 (1989); see also Philip Morris, 304 F. Supp. 2d at 70.

A mail or wire fraud offense does not necessarily require proof of any misrepresentation

of fact or affirmative false statement, although such would be highly probative of a scheme to defraud. Philip Morris, 304 F. Supp. 2d at 70; United States v. Halbert, 640 F.2d 1000, 1007 (9th Cir. 1981). The mail fraud statute covers all fraudulent and deceptive statements, including statements that are literally true but deceptive in the context in which they are made. See, e.g., Emery v. Am. Gen. Fin., Inc., 71 F.3d 1343, 1348 (7th Cir. 1995) ("A half truth, or what is usually the same thing a misleading omission, is actionable as fraud, including mail fraud if the mails are used to further it, if it is intended to induce a false belief and resulting action to the advantage of the misleader and the disadvantage of the misled"); United States v. Townley, 665 F.2d 579, 585 (5th Cir. 1982) (holding that misleading newspaper ads and letters which were mailed "need not be false or fraudulent on their face, and the accused need not misrepresent any fact" since "it is just as unlawful to speak 'half truths' or to omit to state facts necessary to make the statements made, in light of the circumstances under which they were made, not misleading"); United States v. Allen, 554 F.2d 398, 410 (10th Cir. 1977).

The United States has proven that Defendants have acted willfully and intentionally to further the Enterprise's scheme to defraud by making statements which were directly contrary to the internal, collective knowledge of each individual Defendant and the Enterprise as a whole. Accordingly, the Government has met its burden to show that Defendants acted with the specific intent to defraud or deceive.

#### a. Defendants Are Liable for the Acts of Their Officers, Employees, and Agents

Each Defendant is liable for the acts of its officers, employees, and agents. Because a corporation can act only through its agents, it may be held liable for the acts of its officers, employees, and other agents in certain circumstances. Meyer v. Holly, 537 U.S. 280, 285 (2003);

Burlington Indus., Inc. v. Ellerth, 524 U.S. 724, 756 (1998); New York Central & Hudson R.R. v. United States, 212 U.S. 481, 494 (1909) (holding that "a corporation is held responsible for acts not within the agent's corporate powers strictly construed, but which the agent has assumed to perform for the corporation when employing the corporate powers actually authorized, and in such cases there need be no written authority under seal or vote of the corporation in order to constitute the agency or to authorize the act"); R.R. Co. v. Hanning, 82 U.S. 649, 657 (1872) (finding that "the principal is liable for the acts and negligence of the agent in the course of his employment, although he did not authorize or did not know of the acts complained of"); Restatement (Second) of Agency § 219, et seq. (1958). Specifically, under the theory of respondeat superior, a corporation may be held liable for the statements or wrongful acts of its agents or employees when they are acting within the scope of their authority or the course of their employment so long as the action is motivated, at least in part, to benefit the corporation. Sun-Diamond Growers, 138 F.3d at 970, aff'd, 526 U.S. 398 (1999); Local 1814, Int'l Longshoremen's Ass'n v. NLRB, 735 F.2d 1384, 1395 (D.C. Cir. 1984); Restatement (Second) of Agency § 236.

Furthermore, if a corporate agent exercises the authority conferred upon him and performs an act within the course of his employment, the corporation is liable even if the act was unlawful or was done contrary to instructions or policies, as long as the agent acted with an intent to benefit the corporation. United States v. Automated Med. Labs, 770 F.2d 399, 407 (4th Cir. 1985); United States v. Beusch, 596 F.2d 871, 877 (9th Cir. 1979); United States v. Hilton Hotels Corp., 467 F.2d 1000, 1004 (9th Cir. 1972); United States v. Harry L. Young & Sons, Inc., 464 F.2d 1295, 1296-97 (10th Cir. 1972); United States v. American Radiator & Standard Sanitary

Corp., 433 F.2d at 204-05; Egan v. United States, 137 F.2d 369 (8th Cir. 1943).

While the federal courts of appeals have not reached a consensus about how the theory of respondeat superior applies specifically in RICO cases brought under § 1962(c), the Third, Sixth, and Eleventh Circuits have all found that where, as here, the defendant corporation is not the Enterprise itself, the corporation is liable for the acts of its officers. Cox v. Administrator United States Steel & Carnegie, 17 F.3d 1386, 1405 (11th Cir. 1994) (citing Petro-Tech, Inc. V. Western Co., 824 F.2d 1349, 1361-62 (3rd Cir. 1987)) (finding that "theories of respondeat superior . . . are not out of place" where the defendants named are not the section 1962(c) enterprise); Davis v. Mutual Life Ins. Co., 6 F.3d 367,379 (6th Cir. 1998) (holding that "[n]o . . . prohibition . . . prevents the imposition of liability vicariously on corporate 'persons' on account of the acts of their agents, particularly where the corporation benefitted by those acts."). Similarly, the Ninth Circuit has held that "an employer that is benefitted by its employee or agent's violations of section 1962(c) may be held liable under the doctrines of respondeat superior and agency when the employer is distinct from the enterprise." Brady v. Dairy Fresh Products Co., 974 F.2d 1149, 1154 (9th Cir. 1992); compare with Miranda v. Ponce Federal Bank, 948 F.2d 41, 45 (1st Cir. 1991) (declining to apply "corporate liability on the enterprise's part under a theory of respondeat superior") see also Luthi v. Tonka Corp., 815 F.2d 1229, 1230 (8th Cir. 1987) (declining to apply respondeat superior where doing so would violate Congress's intent to separate the enterprise and the criminal "person").

There are strong public policy grounds supporting this approach. Applying respondeat superior "will encourage employers to monitor more closely the activities of their employees and agents to ensure that these agents are not involved in racketeering activities. Thus, respondeat

superior and agency liability furthers both the compensatory and deterrent goals of the RICO statute." Brady, 974 F.2d at 1155. Likewise, the Sixth Circuit has held that a prohibition, if it existed, against imposing liability vicariously "would prevent corporate 'persons' from ever being found liable under RICO, since corporate principals may only act through their agents. Such a rule would be manifestly contrary to the intent of Congress." Davis v. Mutual Life Ins. Co. of New York, 6 F.3d 367, 379 (6th Cir. 1993). Similarly, in this vein, the Supreme Court has recognized that there is "no good reason why corporations may not be held responsible for and charged with the knowledge and purposes of their agents, acting within the authority conferred upon them. . . . If it were not so, many offenses might go unpunished and acts be committed in violation of the law, where [as here] the statute requires all persons, corporate or private, to refrain from certain practices forbidden in the interest of public policy." New York Central, 212 U.S. at 495.

**b. Defendants Are Deemed to Possess the Collective Knowledge of Their Officers, Employees, and Agents**

Corporations are liable for the collective knowledge of all employees and agents within (and acting on behalf of) the corporation. United States v. Bank of New England, N.A., 821 F.2d 844, 855-56 (1st Cir. 1987). In that case, the Bank of New England was convicted of violating the Currency Transaction Reporting Act for failing to report various financial transactions. At trial, the district court instructed the jury to consider the bank "as an institution" whose "knowledge is the sum of the knowledge of all the employees. That is, the bank's knowledge is the totality of what all of the employees know within the scope of their employment." Id. at 855. As to intent, the Court instructed: "If you find that the Government has proven with respect to any transaction either that an employee within the scope of his employment willfully failed to file

a required report or that the bank was flagrantly indifferent to its obligations, then you may find that the bank has willfully failed to file the required reports." Id.

On appeal, the bank challenged the trial court's instructions regarding its knowledge and intent. The bank contended that "it is error to find that a corporation possesses a particular item of knowledge if one part of the corporation has half the information making up the item, and another part of the entity has the other half." Id. at 856. The First Circuit rejected the bank's argument, finding the instructions correct as to both knowledge and intent. It's reasoning, which the Court finds highly persuasive, was that "[a] collective knowledge instruction is entirely appropriate in the context of corporate criminal liability. . . . [T]he knowledge obtained by corporate employees acting within the scope of their employment is imputed to the corporation." Id. at 856. In addition, the court stressed that it would be unjust to allow a corporation to avoid liability merely because it chose to divide its knowledge, thus allowing it to "plead innocence." Id. (citations omitted). As the Eleventh Circuit emphasized in First Alabama Bank, N.A. v. First State Insurance Co., 899 F.2d 1045, 1060 n.8 (11th Cir. 1990), the reason that courts impose constructive knowledge upon the principal "is to avoid the injustice which would result if the principal could have an agent conduct business for him and at the same time shield himself from the consequences which would ensue from knowledge of conditions or notice of the rights and interests of others had the principal transacted his own business in person."

In cases decided after Bank of New England, courts have continued to allow the knowledge of agents and employees to be aggregated and imputed to the corporation. See, e.g., Sun-Diamond Growers, 964 F. Supp. at 491 n.10 (D.D.C. 1997) (noting that the defendant "makes much of the fact that purportedly no other corporate officials knew about Mr. Douglas'

activities. However, knowledge obtained by a corporate agent acting within the scope of his employment is imputed to the corporation"), reversed on other grounds, 138 F.3d 961 (D.C. Cir. 1998), aff'd, 526 U.S. 398 (1999). In In re Worldcom, Inc. Securities Litigation, for example, the court considered a challenge to certifications by accounting firm Arthur Andersen under the fraud provision of the Securities Exchange Act of 1934. That statute, like the mail and wire fraud statutes, requires proof of "an intent to deceive, manipulate, or defraud." 352 F. Supp. 2d 472 (S.D.N.Y. 2005). Relying on Bank of New England, the District Court held that "plaintiffs in securities fraud cases need not prove that any one individual employee of a corporate defendant also acted with scienter. Proof of a corporation's collective knowledge and intent is sufficient." Id. at 497.

Thus,"the knowledge of the employee is the knowledge of the corporation." Apex Oil Co. v. United States, 530 F.2d 1291, 1295 (8th Cir. 1976); see also United States v. Josleyn, 206 F.3d 144, 159 (1st Cir. 2000); United States v. Inv. Enters., 10 F.3d 263, 266 (5th Cir. 1993); Eitel v. Schmidlapp, 459 F.2d 609, 615 (4th Cir. 1972) (where defendant's agent fraudulently conveyed property to defendant, agent's knowledge of fraud would be imputed to principal even where there was no evidence of actual knowledge on part of principal: "the principal cannot claim the fruits of the agent's acts and still repudiate what the agent knew."); Duplex Envelope Co. v. Denominational Envelope Co., 80 F.2d 179, 182 (4th Cir. 1935).

Moreover, a principal is held responsible for the knowledge acquired by its agent even if the information is never communicated to it, see, e.g., N.Y. Univ. v. First Fin. Ins. Co., 322 F.3d 750, n.2 (2d Cir. 2003), and even after termination of the services of that officer, employee, or agent, see Acme Precision Prods., Inc. v. Am. Alloys Corp., 422 F.2d 1395, 1398 (8th Cir. 1970).

In a much earlier case, dealing with somewhat different issues, the Supreme Court set forth its persuasive rationale for the collective knowledge doctrine:

> [w]e see no valid objection in law, and every reason in public policy, why the corporation, which profits by the transaction, and can only act through its agents and officers, shall be held punishable by fine because of the knowledge and intent of its agents to whom it has entrusted authority to act in the subject-matter of making and fixing rates of transportation, and whose knowledge and purposes may well be attributed to the corporation for which the agents act.

New York Cent. & Hudson River R.R. Co. v. United States, 212 U.S. 481, 495 (1909).

Thus, the applicable case law makes clear that the knowledge, conduct, and statements of Defendants' agents and employees may be attributed to Defendants as corporate-principals.

#### c. Specific Intent May Be Established by the Collective Knowledge of Each Defendant and of the Enterprise as a Whole

In light of the extensive Findings of Fact describing what each Defendant company knew as well as the totality of the circumstances, the Court concludes that Defendants' fraudulent statements designated as Racketeering Acts evidence a specific intent to defraud. The Findings of Fact are replete with examples of representatives of each cigarette company Defendant, of CTR, and of the Tobacco Institute, either willfully stating something which they knew to be untrue or recklessly disregarding the falsity of their statements. A particularly egregious example is the use of hundreds of documents demonstrating Defendants' intent to offer smokers health reassurances with Light/Low Tar cigarettes even though Defendants knew that such cigarettes offer no meaningful reduction in disease risk. See Findings of Fact Section V(E)(5).

Many of the fraudulent, deceptive, and misleading statements were issued as press releases, paid newspaper statements, pamphlets, and similar documents in the name of the

corporate Defendants themselves. For example, the Tobacco Institute's 1974 version of its pamphlet titled "The Cigarette Controversy" (no bates) (US 23020), was attributed to the Tobacco Institute itself, rather than any named individual. Likewise, the 1994 advertisement in the New York Times containing misleading and deceptive statements on nicotine and addiction titled, "Facts You Should Know," (no bates) (US 65446), was issued by Philip Morris itself. In those instances, where such statements directly contradicted the internal knowledge of the company, specific intent to defraud is easily established. The overwhelming evidence that Defendants, collectively, possessed knowledge demonstrating the fraudulent nature of their public statements on, inter alia, the health effects of smoking and exposure to secondhand smoke, the addictiveness of smoking and nicotine, and their marketing to youth is set forth in the Findings of Fact.

Regarding those statements made by individuals rather than a Defendant company itself, which are clearly attributable to the Defendant company, those statements also demonstrate the requisite intent to defraud on the part of the company.

As discussed in detail above, the courts, including our Circuit, have established and affirmed the collective knowledge doctrine. However, the courts, including our Circuit, have uniformly rejected the theory of collective intent that the Government advocates -- i.e., that aggregation of different states of minds of various corporate actors is sufficient to demonstrate specific intent in cases where individuals within a corporation make fraudulent statements. Our Court of Appeals has stated that in Bank of New England, "corporate knowledge of certain facts was accumulated from the knowledge of various individuals, but the proscribed intent (willfulness) depended on the wrongful intent of specific employees." Saba v. Compagnie

Nationale Air France, 78 F.3d 664, 670 n.6 (D.C. Cir. 1996) (finding that "[i]ndividual acts of negligence on the part of employees -- without more -- cannot . . . be combined to create a wrongful corporate intent."); see also United States v. L.B.S. Bank-NewYork, Inc., 757 F.Supp. 496, 501 n.7 (E.D. Pa. 1990) ("although knowledge possessed by employees is aggregated so that a corporate defendant is considered to have acquired the collective knowledge of its employees, specific intent cannot be aggregated similarly) (citations omitted); First Equity Corp. v. Standard & Poors Corp., 690 F.Supp. 256, 259-260 (S.D.N.Y. 1988) (holding that corporation cannot be deemed to have the requisite intent by mere inconsistences in knowledge of various employees).

At the same time, the courts, including our Circuit, have also rejected the theory of specific intent which Defendants advocate, i.e. requiring that a corporate state of mind can only be established by looking at each individual corporate agent at the time s/he acted. To do so would create an insurmountable burden for a plaintiff in corporate mail and wire fraud cases and frustrate the purposes of the statute.

While courts have not clearly articulated exactly what degree of proof is required, it is both appropriate and equitable to conclude that a company's fraudulent intent may be inferred from all of the circumstantial evidence including the company's collective knowledge. Saba, 78 F.3d at 668 ("the actor's intent may be inferred from indirect evidence and the reckless nature of his acts"); see also, Dana Corp. v. Blue Cross & Blue Shield Mutual of Northern Ohio, 900 F.2d 882, 886 n.2 (6th Cir. 1990); L.B.S. Bank-New York, 757 F. Supp. at 501 n.7.

Moreover, the public policy reasons which support the doctrine of collective knowledge apply equally here. There is "every reason in public policy" why a corporation, which can only act through its agents and officers, and which profits by their actions, should be held liable when

the totality of circumstances demonstrate that such corporation collectively knew what it was doing or saying was false, but did it or said it nevertheless, even if it is impossible to determine the state of mind of the individual agent or officer at the time. Indeed, if it were otherwise, Defendants could avoid liability by simply dividing up duties to ensure that fraudulent statements were only made by or uninformed employees.

Specific intent of individual Defendants and their employees can be inferred from the collective knowledge of each Defendant company itself and the reckless disregard of that knowledge evidenced in statements made by, and on behalf of, each Defendant company. Evidence establishing reckless disregard for the truth or falsity of a statement, as well as willful blindness, satisfies the intent standard. United States v. Munoz, 233 F.3d 1117, 1136 (9th Cir. 2000) ("reckless indifference to the truth or falsity of a statement satisfies the specific intent requirement in a mail fraud case"); In re Korean Airlines Disaster of September 1, 1983, 704 F. Supp. 1135, 1136 (D.D.C. 1988), aff'd in relevant part, 932 F.2d 1475 (D.C. Cir. 1991); United States v. Prows, 118 F.3d 686, 692 (10th Cir. 1997); United States v. Coyle, 63 F.3d 1239, 1243 (3rd Cir. 1995). In addition, "[f]raudulent intent may be inferred from the modus operandi of the scheme." United States v. Reid, 533 F.2d 1255, 1264 (D.C. Cir. 1976). Fraudulent intent may also be proven by inference from the totality of the circumstances, including by indirect or circumstantial evidence. See, e.g., United States v. Alston, 609 F.2d 531, 538 (D.C. Cir. 1979) (totality of the circumstances); United States v. Sawyer, 85 F.3d 713, 733 (1st Cir. 1996) (indirect and circumstantial evidence).

In this case, evidence of the existence and methods of the Enterprise's overall scheme to defraud and Defendants' individual roles in that Enterprise – including each Defendant's

purposeful and conscious actions taken in light of its collective knowledge – reveals a "cumulative pattern" of decisions, actions, and inaction that is powerful circumstantial evidence of specific fraudulent intent. See In re WorldCom, Inc. Sec. Litig., 352 F. Supp. 2d at 499. The Findings of Fact overwhelmingly demonstrate that Defendants took deliberate steps to protect, execute, and further the fraudulent scheme by making statements that they knew were not true. Again, to give but one example, the members of the Tobacco Institute Executive Committee, comprised of cigarette company Defendants' executives, approved TI communications directed to the public that promoted the fraudulent position that there was an "open question" regarding whether smoking or nicotine is addictive. At the same time, each of those executives' companies had knowledge both that smoking and nicotine are addictive and that smoking causes disease. See Findings of Fact Section V(B)(3). In the majority of instances, the authors of the fraudulent statements alleged as Racketeering Acts were executives, including high level scientists – CEOs, Vice Presidents, Heads of Research & Development, not entry level employees -- at each of the Defendant companies who would reasonably be expected to have knowledge of the company's internal research, public positions, and long term strategies.

In addition, Defendants' representatives' reckless disregard for the truth of their public statements about the health effects of smoking, smoking and nicotine addiction, and other smoking and health issues similarly establishes specific intent to defraud. Numerous documents from the 1950s forward show Defendants' recognition that their internal understanding of smoking's adverse health effects and the addictiveness of nicotine contradicted the position they took with smokers, potential smokers, and the American public. See, e.g., (no bates) (US 21794) (internal memo of Philip Morris nicotine researcher acknowledging that nicotine is a drug while

noting Philip Morris's policy that "we must be officially heedless of the drug properties of nicotine"). Time after time, Defendants' executives and policy-makers chose courses of action intended to preserve the chasm between internally recorded facts and knowledge and externally professed ignorance and denial. Further, there is substantial evidence in the record that over the years, numerous executives and scientists of Defendants participated actively in the oversight and control of industry activities that were calculated to advance their fraudulent scheme. For instance, the Chief Executive Officers of Philip Morris, Reynolds, B&W, Lorillard, American, and Liggett, served on the Board of Directors and/or the Executive Committee of the Tobacco Institute. The General Counsels of the Cigarette Company Defendants were members of the Committee of Counsel. The Boards of Directors of CTR and CIAR were comprised of employees of Defendants. Furthermore, Defendants actively supported, both with funding and manpower, the numerous other bodies whose structures, functions, and activities are described throughout the Findings of Fact.

Accordingly, the specific intent required for liability under 18 U.S.C. §§ 1341 and 1343 is demonstrated by each Defendant's public statements and representations, its collective knowledge and the collective knowledge of the Enterprise of which it was a part, and its willful disregard of that knowledge.

#### 5. Defendants' False and Fraudulent Statements, Representations, and Promises Were Material

Materiality is a fundamental element of common law fraud. See Neder v. United States, 527 U.S. 1, 22 (1999). A matter is material if:

> (a) a reasonable [person] would attach importance to its existence or nonexistence in determining his [or her] choice of action in the transaction in question; or

> (b) the maker of the representation knows or has reason to know that its recipient regards or is likely to regard the matter as important in determining his [or her] choice of action, although a reasonable [person] would not so regard it.

Restatement (Second) of Torts, § 538(2)(a)-(b) (1977). [It is noteworthy that cases involving the FTC's determinations of materiality are consistent with the Court's finding here, even though such cases are brought pursuant to the FTC Act rather than the RICO statute. As a general rule, deceptive advertising or claims permit an inference "that the deception will constitute a material factor in a purchaser's decision to buy." FTC v. Colgate-Palmolive Co., 380 U.S. 374, 391-92 (1965); see also FTC v. Brown & Williamson Tobacco Corp., 778 F.2d 35, 40-43 (D.C. Cir. 1985) (holding that deceptive advertising touting Defendants' low tar cigarettes created an "inherent tendency to deceive" consumers and was material); FTC v. Wilcox, 926 F. Supp. 1091, 1098 (S.D. Fla. 1995) ("Express claims or deliberately-made implied claims used to induce the purchase of a particular product or service are presumed to be material"). Moreover, materiality is presumed for matters that "significantly involve health, safety, or other areas with which the reasonable consumer would be concerned." Novartis Corp. v. FTC, 223 F.3d 783, 786 (D.C. Cir. 2000) (quoting Deception Statement, 103 FTC at 182); see also Kraft, Inc. v. FTC, 970 F.2d 311, 322 (7th Cir. 1992).]

With respect to the second prong of the Restatement's definition of materiality, the D.C. Circuit has explained that a fraudulent scheme can exist even when "no reasonable [prudent] person would have believed [the defendant's] misrepresentations . . . [or] where [people] unreasonably believed the representations made to them." United Stated v. Maxwell, 920 F.2d 1028, 1036 (D.C. Cir. 1990). Instead, "the only issue is whether there is a plan, scheme or artifice intended to defraud." Id. at 1036 (quoting United States v. Brien, 617 F.2d 299, 311 (1st

Cir. 1980)).

Although this Circuit emphasizes the second clause of the Restatement definition, this Court concludes that Defendants' statements qualify as material under both clauses. First, Defendants' assertion that no reasonably prudent consumer would have relied upon or believed their fraudulent misrepresentations, because of contrary information available in the public domain, strains credulity. For much of the period during which the alleged racketeering acts took place, Defendants were the primary source of information regarding cigarette smoking and tobacco addiction. See e.g., Findings of Fact at Section V(B)(2)(b). The public health community had a far less sophisticated understanding of the health hazards associated with smoking and for fewer resources to disseminate the information it did have. See id. It would have been reasonable, therefore, for consumers to believe that Defendants' statements accurately reflected current knowledge about the dangers of smoking.

In addition, one can only wonder just why Defendants were spending millions upon millions of dollars in advertising every year if they thought no one -- smoker, potential smoker, or member of the public -- was going to believe it and rely on it. The question answers itself. Moreover, Defendants knew, as their many internal documents reveal, just how badly ordinary smokers addicted to nicotine did not want to believe, in the early days, that smoking was disastrous for their health and then as the evidence mounted, wanted to believe that they could smoke low tar light cigarettes and not sacrifice their health. For Defendants to now deny that the "disinformation" they were spending millions on to deceive the public would not have been of import to a reasonable person in determining his or her choice of action is the height of disingenuousness. Thus, Defendants' statements were material under the "reasonable person"

standard of the Restatement's definition of materiality.

Second, the Government has produced ample and convincing evidence to show that Defendants' statements were material under the second clause of the Restatement definition as well. Many of Defendants' statements were made with the intention to mislead the public. See generally Findings of Fact. For example, shortly after issuance of the Surgeon General's Report on secondhand smoke, Philip Morris advertisements featured smokers "talking" to the reader and asserting, "Please don't tell me my cigarette smoke is harmful to you. There's just no convincing proof that it is," and "I know there's no proof my smoke can hurt you." (no bates) (US 20554). Defendants' internal documents demonstrate that they expressly recognized that their customers were "likely to regard [these fraudulent misrepresentations] as important in determining [their] choice of action," Restatement (Second) of Torts, § 538(2)(b). See id. at 67-69 & n.4; Order # 235, Mem. Op. at 2. Defendants' conduct is, therefore, material under the second prong of the Restatement definition because Defendants knew that consumers would rely on their advertising and marketing when determining whether to smoke cigarettes.

Defendants attempt to show that their statements were not material by defining a "material statement" as one that "must 'be of importance to a reasonable person in making a decision about a particular matter or transaction.'" Defs.' Corrected Post-Trial Brief at 23 (citing United States v. Winstead, 74 F.3d 1313, 1320 (D.C. Cir. 1996). Under that definition, Defendants claim, that their statements could only be material if they were "of that type that reasonable consumers would take into account in purchasing cigarettes." Id. at 73. Applying their narrow definition of materiality, Defendants allege, first, that the Government cannot show that consumers relied on Defendants' statements when considering to purchase cigarettes, see id.

at 68, and, second, that the public had reached a "saturation" level of awareness about smoking and "universally disbelieved" statements by Defendants. See id. at 74.

As the Government notes in its brief, however, Defendants' definition of materiality, which focuses solely on the "reasonable person" standard, is insufficient. See Govt Post-Trial Brief at 11. Defendants' liability does not hinge solely upon whether their statements "[were of the type that] reasonable consumers would take into account," Defs.' Corrected Post-Trial Brief at 73, but also on whether "[Defendants'] "knew or [had] reason to know that [consumers of tobacco products] regard[ed] or [were] likely to regard [Defendants' statements] as important in [their decision to smoke cigarettes]," Restatement (Second) of Torts § 538 (2)(b). Contrary to Defendants' assertions, the evidence here demonstrates that their statements are material under both the Restatement tests.

Defendants' attempts to prove that consumers disregarded or disbelieved their statements about the safety hazards associated with smoking are not to be believed. See Defs.' Corrected Post-Trial Brief at 68, 74. The clear weight of the evidence shows that Defendants took advantage of and exploited their customers' lack of knowledge concerning cigarette use and nicotine addiction. Thus, Defendants' statements were material to consumers of tobacco products and to others, such as the recipients of secondhand smoke, who were affected by Defendants' products.

For all the foregoing reasons, the Court concludes that Defendants are liable for violations of 18 U.S.C. § 1962(D).

## VIII. DEFENDANTS HAVE VIOLATED 18 U.S.C. §1962(d)

18 U.S.C. § 1962(d) provides in part: "It shall be unlawful for any person to conspire to

violate any of the provisions of . . . Subsection (c) of this Section."

### A. Applicable Case Law

To establish a conspiracy violation of 18 U.S.C. § 1962(d), the United States must prove each of the following elements:

1. The existence of an enterprise;

2. That the enterprise was engaged in, or its activities affected, interstate or foreign commerce; and

3. That each defendant knowingly agreed to the commission of a violation of 18 U.S.C. 1962(c).

See, e.g., Salinas v. United States, 522 U.S. 52, 62-65 (1997); United States v. Philip Morris Inc., 130 F. Supp. 2d 96, 100 (D.D.C. 2001); United States v. Posada-Rios, 158 F.3d 832, 857 (5th Cir. 1998); United States v. To, 144 F.3d 737, 744 (11th Cir. 1998); Jones v. Meridian Towers Apartments, Inc., 816 F. Supp. 762, 772-73 (D.D.C. 1993).

Although a substantive RICO offense under § 1962(c), requires proof that each defendant committed at least two racketeering acts, a RICO conspiracy charge does not require proof of the actual commission of any racketeering act or any overt act. See, e.g., Salinas, 522 U.S. at 63; United States v. Zauber, 857 F.2d 137, 148 (3d Cir. 1988); United States v. Caporale, 806 F.2d 1487, 1515 (11th Cir. 1986); United States v. Teitler, 802 F.2d 606, 612-13 (2d Cir. 1986) (collecting cases); United States v. Neapolitan, 791 F.2d 489, 498 (7th Cir. 1986); United States v. Adams, 759 F.2d 1099, 1116 (3d Cir. 1985); United States v. Brooklier, 685 F.2d 1208, 1222-23 (9th Cir. 1982); United States v. Corrado, 286 F.3d 934, 937 (6th Cir. 2002); Glecier, 923 F.2d at 500; Gonzalez, 921 F.2d at 1547-48; United States v. Torres Lopez, 851 F.2d 520, 525 (1st Cir. 1988); United States v. Persico, 832 F.2d 705, 713 (2d Cir. 1987).

As the Supreme Court explained in Salinas, "[t]he RICO conspiracy provision, then, is even more comprehensive than the general conspiracy offense in [18 U.S.C.] § 371." 522 U.S. at 63. As in the case of conventional conspiracy offenses, each co-conspirator is liable for the acts of all other conspirators undertaken in furtherance of the conspiracy both prior to and subsequent to the co-conspirator's joining the conspiracy. See, e.g., Salinas, 522 U.S. at 63-64; P & B Autobody, 43 F.3d at 1562; Pungitore, 910 F. 2d at 1145-48; United States v. Bridgeman, 523 F.2d 1099, 1108 (D.C. Cir. 1975).

Moreover, the existence of a conspiracy is not disproved merely because its membership changes over time or some defendants cease to participate in it. See, e.g., United States v. Garcia, 785 F.2d 214, 225 (8th Cir. 1986) ("An agreement may include the performance of many transactions, and new parties may join or old parties terminate their relationship with the conspiracy at any time."); United States v. Warner, 690 F.2d 545, 549 n.7 (6th Cir. 1982); United States v. Varelli, 407 F.2d 735, 742 (7th Cir. 1969); United States v. Boyd, 595 F.2d 120, 123 (3d Cir. 1978); United States v. Klein, 515 F.2d 751 (3d Cir. 1975); United States v. Bates, 600 F.2d 505, 509 (5th Cir. 1979) ("Nor does a single conspiracy become several merely because of personnel changes."); United States v. Michel, 588 F.2d 986 (5th Cir. 1979); United States v. Lemm, 680 F.2d 1193, 1199 (8th Cir. 1982) (for RICO conspiracy, continuity may be met even with changes in personnel or even when different individuals manage the affairs of the enterprise); United States v. Tillett, 763 F.2d 628, 631-32 (4th Cir. 1985) (personnel change does not prevent RICO conspiracy); United States v. Bello-Perez, 977 F.2d 664, 668 (1st Cir. 1992) ("What was essential is that the criminal 'goal or overall plan' have persisted without fundamental alteration, notwithstanding variations in personnel and their roles."); United States

v. Kelley, 849 F.2d 999, 1003 (6th Cir. 1988) (single conspiracy can be found even where "the cast of characters changed over the course of the enterprise"); United States v. Nasse, 432 F.2d 1293, 1297 (7th Cir. 1970); United States v. Sepulvedam, 15 F.3d 1161, 1191 (1st Cir. 1993) ("in a unitary conspiracy it is not necessary that the membership remain static") (citing United States v. Perholtz, 842 F.2d 343, 364 (D.C. Cir. 1988)); United States v. Bryant, 364 F.2d 598, 603 (4th Cir. 1966) ("The addition of new members to a conspiracy or the withdrawal of old ones from it does not change the status of the other conspirators.") (quoting Poliafico v. United States, 237 F.2d 97, 104 (6th Cir. 1956)); United States v. Shorter, 54 F.3d 1248 (7th Cir. 1995).

In addition, even if one conspirator did not participate in, or was unaware of, acts undertaken by co-conspirators in furtherance of the conspiracy, it is nevertheless liable for such acts, including those that occur prior to its joining the conspiracy. See, e.g., Salinas v. United States, 522 U.S. 52, 63-64 (1997); Pinkerton v. United States, 328 U.S. 640, 646-47 (1996); United States v. Starrett, 55 F.3d 1525, 1544 (11th Cir. 1995); Aetna Cas. Sur. Co. v. P & B Autobody, 43 F.3d 1546, 1562 (1st Cir. 1994); United States v. Rosenthal, 793 F.2d 1214, 1228 (11th Cir. 1986); United States v. Pungitore, 910 F. 2d 1084, 1145-48 (3d Cir. 1990); United States v. Bridgeman, 523 F.2d 1099, 1108 (D.C. Cir. 1975). Such liability remains even if the defendant has ceased his participation in the conspiracy. See, e.g., United States v. Thomas, 114 F.3d 228, 267-68 (D.C. Cir. 1997); In Re Corrugated Container Antitrust Litig., 662 F.2d 875, 886 (D.C. Cir. 1981); United States v. Nava-Salazar, 30 F.3d 780, 799 (7th Cir. 1994); United States v. Loya, 807 F. 2d 1483, 1493 (9th Cir. 1987); United States v. Read, 658 F.2d 1225, 1239-40 (7th Cir. 1981).

### B. Each Defendant Is Liable for the RICO Conspiracy Charge Because Each Entered into the Requisite Conspiratorial Agreement

"In order to be guilty of a RICO conspiracy, a defendant must either agree to [individually] commit two predicate acts or agree to participate in the conduct of the enterprise with the knowledge and intent that other members of the conspiracy would commit at least two predicate acts in furtherance of the enterprise." United States v. Nguyen, 255 F.3d 1335, 1341 (11th Cir. 2001); see also United States v. Abbell, 271 F.3d 1286, 1299 (11th Cir. 2001); Brouwer v. Raffensperger, Hughes & Co., 199 F.3d 961, 964 (7th Cir. 2000); To, 144 F.3d at 744; United States v. Brazel, 102 F.3d 1120, 1138 (11th Cir. 1997); United States v. Shenberg, 89 F.3d 1461, 1471 (11th Cir. 1996). Defendants are liable for a RICO conspiracy under either test.

First, each Defendant individually agreed to commit at least two Racketeering Acts. The overwhelming evidence demonstrates that each Defendant personally committed numerous Racketeering Acts in furtherance of the affairs of the Enterprise. See Findings of Fact Section VII(G)(3)(a), supra. "Where, as here, the evidence establishes that each defendant, over a period of years, committed several acts of racketeering activity in furtherance of the enterprise's affairs, the inference of an agreement to do so is unmistakable." Elliott, 571 F.2d at 903; see also United States v. Ashman, 979 F.2d 469, 492 (7th Cir. 1992); United States v. Crockett, 979 F.2d 1204, 1218 (7th Cir. 1991); United States v. Carlock, 806 F.2d at 547 (5th Cir. 1986); United States v. Melton, 689 F.2d 679, 683 (7th Cir. 1982); United States v. Sutherland, 656 F.2d 1181, 1187 n.4 (5th Cir. 1981).

Second, each Defendant agreed to participate in the conduct of the Enterprise with the knowledge and intent that other members of the conspiracy would also commit at least two

predicate acts in furtherance of the Enterprise. A RICO conspiracy may exist even if a conspirator does not agree to commit or facilitate each and every part of the substantive offense. See United States v. Socony-Vacuum Oil Co., 310 U.S. 150, 253-254 (1940). As the Supreme Court explained in reference to RICO:

> A conspirator must intend to further an endeavor which, if completed, would satisfy all of the elements of a substantive criminal offense, but it suffices that he adopt the goal of furthering or facilitating the criminal endeavor. He may do so in any number of ways short of agreeing to undertake all of the acts necessary for the crime's completion. One can be a conspirator by agreeing to facilitate only some of the acts leading to the substantive offense. It is elementary that a conspiracy may exist and be punished whether or not the substantive crime ensues. . . .
>
> * * *
>
> It makes no difference that the substantive offense under § 1962(c) requires two or more predicate acts. The interplay between subsections (c) and (d) does not permit us to excuse from the reach of the conspiracy provision an actor who does not himself commit or agree to commit the two or more predicate acts requisite to the underlying offense.

Salinas, 522 U.S. at 63-65.

Thus, to prove a RICO conspiracy,

> [t]he focus is on the agreement to participate in the enterprise through the pattern of racketeering activity, not on the agreement to commit the individual predicate acts. . . . The government can prove [such] an agreement on an overall objective by circumstantial evidence showing that each defendant must necessarily have known that others were also conspiring to participate in the same enterprise through a pattern of racketeering activity.

Starrett, 55 F.3d at 1543-44 (internal quotations and citations omitted); Accord Posada-Rios, 158 F.3d at 857; To, 144 F.3d at 744. It is sufficient "that the defendant agree to the commission

of [at least] two predicate acts [by any conspirator] on behalf of the conspiracy." MCM Partners, Inc. v. Andrews-Bartlett & Assocs., 62 F.3d 967, 980 (7th Cir. 1995) (quoting United States v. Neapolitan, 791 F.2d 489, 498 (7th Cir. 1986)). Accord Brouwer, 199 F.3d at 964; United States v. Quintanilla, 2 F.3d 1469, 1484 (7th Cir. 1993) (quoting Neapolitan).

Defendants' conspiracy was in existence as of December 1953, when several of the cigarette company Defendants met in New York City to create CTR and to discuss and outline the Enterprise's future strategy. Each Defendant agreed to commit a substantive RICO offense with the knowledge that other members of the Enterprise were also conspiring to commit racketeering activity. All Defendants coordinated significant aspects of their public relations, scientific, legal, and marketing activity in furtherance of the shared objective -- to use mail and wire transmissions to maximize industry profits by preserving and expanding the market for cigarettes through a scheme to deceive the public. Defendants executed the scheme by using several different strategies including: (1) denying that there were adverse health effects from smoking; (2) making false, misleading, and deceptive public statements designed to maintain doubt about whether smoking and exposure to secondhand smoke cause disease; (3) denying the addictiveness of smoking cigarettes and the role of nicotine therein; (4) disseminating advertising for light and low tar cigarettes suggesting they were less harmful than full flavor ones; and (5) undertaking a publicly announced duty to conduct and publicize disinterested and independent research into the health effects of smoking upon which the public could rely. See Findings of Fact Sections III and V.

Moreover, the cigarette company Defendants jointly participated at various times and to various degrees in creating, funding, directing and controlling Defendants CTR, TI and other

entities and causing Defendants CTR and TI to commit numerous racketeering acts to further those shared objectives. Furthermore, the frequent oral and written communications between and among Defendants illustrate their joint efforts to pursue their shared objectives. Significantly, Defendants worked together continuously, in many different venues and through many different entities, to disseminate their agreed upon deceptive public position denying the link between smoking cigarettes and adverse health effects, denying the addictiveness of smoking cigarettes and nicotine, and denying their marketing of cigarettes to young people. See Findings of Fact Sections V(A, B, F).

In addition, each Defendant also agreed to facilitate the substantive RICO violation by concealing or suppressing information and documents which may have been detrimental to the interests of the members of the Enterprise. Such information might well have been discoverable in smoking and health liability cases against Defendants and therefore could have constituted, or led to, evidence of the link between smoking cigarettes, addiction, and adverse health effects. See Findings of Fact Section V(H).

Thus, each Defendant knew the goals of the Enterprise, the general nature of the conspiracy, and that other members of the conspiracy would commit at least two Racketeering Acts in furtherance of the Enterprise's scheme to defraud. Indeed, each Defendant took substantial steps to facilitate the scheme to defraud that was the central purpose of the conspiracy, including committing numerous Racketeering Acts in furtherance of the Enterprise's affairs. Hence, each Defendant entered into the requisite conspiratorial agreement. Accord Salinas, 522 U.S. at 66 ("[E]ven if Salinas did not accept or agree to accept two bribes, there was ample evidence that he conspired to violate subsection (c). The evidence showed that [Salinas'

conspirator] committed at least two acts of racketeering activity when he accepted numerous bribes and that Salinas knew about and agreed to facilitate the scheme. This is sufficient to support a conviction under § 1962(d).”).

While there is much explicit evidence of actual agreement between Defendants in the Findings of Fact, RICO liability does not require such an explicit agreement. “Regardless of the method used to prove the agreement, the government does not have to establish that each conspirator explicitly agreed with every other conspirator to commit the substantive RICO crime described in the indictment, or knew his fellow conspirators, or was aware of all the details of the conspiracy.” Starrett, 55 F.3d at 1544 (internal quotations and citations deleted).

Even though the criminal activities may differ, they must still be linked to allow the inference of an agreement. United States v. Boylan, 898 F.2d 230, 242 (1st Cir. 1990) (RICO conspiracy conviction upheld where “the defendants and their activities were nothing short of striking: each defendant was a detective assigned to work nights in District 4 at some time during the indictment period; each received things of value, usually cash, from restaurant or nightclub owners in exchange for services not officially sanctioned; the targeted establishments were all in District 4 and all under the Board’s aegis. Moreover, there was a significant degree of interconnectedness. The defendants often cooperated with one another in collecting payments and in providing their specialized services. These common characteristics are precisely the kind of factors which can permissibly lead to the inference of a single conspiracy.“); Ashman, 979 F.2d at 492 (in investment scheme, evidence sufficient for RICO conspiracy where defendants served as “bag men” for each other, used similar procedures for covering losses, and “were well aware that they were part of an ongoing and flexible agreement to commit fraud as the need -- or

perhaps the opportunity -- arose"); see also United States v. Zichettello, 208 F.3d 72, 100 (2d Cir. 2000); To, 144 F.3d at 744; United States v. Ruiz, 905 F.2d 499, 505 (1st Cir. 1990); Rastelli, 870 F.2d at 828 (collecting cases); United States v. Rosenthal, 793 F.2d 1214, 1228 (11th Cir. 1986); United States v. De Peri, 778 F.2d 963, 975 (3d Cir. 1985); Elliott, 571 F.2d at 902-03.

To establish sufficient knowledge, it is only required that the defendant "know the general nature of the conspiracy and that the conspiracy extends beyond his individual role." Rastelli, 870 F.2d at 828 (collecting cases). Accord Zichettello, 208 F.3d at 100; Brazel, 102 F.3d at 1138; Eufrasio, 935 F.2d at 577 n.29; Rosenthal, 793 F.2d at 1228; De Peri, 778 F.2d at 975; Elliott, 571 F.2d at 903-04. Furthermore, "[b]ecause conspirators normally attempt to conceal their conduct, the elements of a conspiracy offense may be established solely by circumstantial evidence. . . . The agreement, a defendant's guilty knowledge and a defendant's participation in the conspiracy all may be inferred from the development and collocation of circumstances." Posada-Rios, 158 F.3d at 857 (citations and internal quotations omitted).

For all the foregoing reasons, the Court concludes that Defendants are liable for conspiracy under 18 U.S.C. § 1962(d) of RICO because they both explicitly and implicitly agreed to violate 18 U.S.C. § 1962(c) of RICO.

**C. Liggett Withdrew from the Conspiracy**

Where an alleged conspirator communicates his abandonment in a manner reasonably calculated to reach co-conspirators, the conspirator is deemed to have withdrawn from the conspiracy. United States v. Thomas, 114 F.3d 228, 267-9 (D.C. Cir.), cert. denied, 522 U.S. 1033 (1997) (collecting cases); see also United States v. United States Gypsum Co., 438 U.S. 422, 463-64 (1978); In re Brand Name Prescription Drugs Antitrust Litig., 123 F.3d 599, 616

(7th Cir. 1978); In re Corrugated Container Antitrust Litig., 662 F.2d 875, 886 (D.C. Cir. 1981). Although there is clear and convincing evidence that Liggett participated in the RICO Enterprise and conspiracy during its formative years, the Court finds that it withdrew from the conspiracy in 1997.

In 1996, Liggett broke ranks with the tobacco industry when it cooperated with states' Attorneys General in the prosecution of certain claims against itself and other tobacco company Defendants, and made historic statements concerning the health and addiction risks of smoking. See Findings of Fact Section VIII(C). Liggett's invaluable cooperation with government authorities and public health officials was well-publicized. Id. The states' Attorneys General, as well as numerous other government and public health officials, publicly acknowledged that Liggett's conduct and cooperation was a key element in achieving important settlements with other major tobacco companies, including the Master Settlement Agreement.

There were several ways in which Liggett provided cooperation and assistance to the states' Attorneys General in their continuing lawsuits against the major tobacco companies. Liggett agreed to waive attorney-client privilege and work product protection with respect to internal Liggett-only privileged documents relevant to smoking and health issues and produced such documents to the states. As to joint defense privileged documents in Liggett's possession, Liggett produced many of those documents to courts around the country for in camera reviews and Liggett's outside counsel participated in efforts to have such documents de-privileged. These productions resulted in the first judicial decisions compelling the major tobacco companies to release privileged documents. Liggett also agreed to make its scientists and executives available for informational interviews by the Attorneys General and their outside counsel and conducted

informational tours of Liggett's manufacturing facilities for counsel for the states and others in the public health community. Finally, Bennet LeBow, CEO of Liggett at the time, and others affiliated with Liggett testified on behalf of the states' Attorneys General in those cases where trials occurred. Id. at 5:6-19. As a result of these and other actions in 1996 and 1997, Liggett has isolated itself, and been isolated from, the other cigarette company Defendants. In this case, Liggett was represented by its own individual counsel and conducted its own defense.

Liggett communicated its withdrawal from the Enterprise and the conspiracy by, among other things, its public statements and open cooperation with the state and federal governments in the prosecution of their claims against the other tobacco company Defendants. See Findings of Fact Section VIII(C). Given Liggett's conduct, the evidence shows Liggett is not continuing to "conspire" with other tobacco company defendants.

## IX. ALTRIA IS LIABLE FOR ITS VIOLATIONS OF 18 U.S.C. §1962(c) AND (d)

Defendants claim that Altria Group Inc., as a holding company, can not be liable for violations of 18 U.S.C. 1962 (c) and (d) simply by virtue of its parental relationship to Philip Morris USA. Their argument misses the point, since that is not the basis on which its liability rests. Since its creation in 1985, Altria, formerly Philip Morris Companies Inc., has participated directly in the conduct of the Enterprise and conspired to violate 1962(c). Even though there is overwhelming evidence that Altria effectively controlled Philip Morris USA and therefore "caused" some of its predicate Racketeering Acts, Altria's liability in this case stands on its own.

Defendant Altria effectively and actively controls the activities of all of its subsidiaries, including Defendant Philip Morris USA Inc. and Philip Morris International, Inc. Altria management sets overall policy on all major components of the companies' operations, and

senior Altria executives, employees, and agents participate in and/or control decisions about how the operating companies should implement those policies, through both formal and informal reporting relationships. Berlind PD, U.S. v. Philip Morris, 5/23/02, 8:4-10:13; US 23061*. It is disingenuous to argue, as Altria does, that its control, through the reporting relationship, of decisions taken by Altria Corporate Services ("ACS") employees on behalf of its subsidiaries does not constitute "control" of those decisions. Altria's relationship with its subsidiaries was structured to maintain consistency among its companies on sensitive issues such as smoking and health, addiction, and passive smoking. For example, the CEO and Chairman of Philip Morris Companies, Geoffrey Bible, was the ultimate authority on content of public statements on smoking and health made by Philip Morris Companies subsidiaries, including Philip Morris USA. Bible PD, U.S. v. Philip Morris, 8/22/02, 83:9-84:9, 85:22-86:25. Moreover, the Court has already found that the document retention procedures and policies that led to the destruction of email by and to senior executives at Philip Morris while this lawsuit was pending were created with and approved by Altria. United States v. Philip Morris USA, 327 F. Supp. 2d 21, 24 (D.D.C. 2004).

Steven Parrish, Altria's Senior Vice President of Corporate Affairs, testified that officers and members of the Board of Directors of Altria were involved in activities of CTR and TI. Parrish TT, 1/27/05, 11349:8-11. Altria's General Counsel Murray Bring and William Murray, who served as President and COO of Altria and, later, Chairman of its Board of Directors, were members of the Board of Directors of CTR and attended its meetings. Id. at 11350:6-12; (no bates) (US 32606); (no bates) (US 32608); (no bates) (US 32610). Alexander Holtzman, an attorney in the legal department at Altria, was also active in CTR leadership.

Altria's active participation extended to the Tobacco Institute. Parrish continued to attend meetings of the TI Executive Committee after leaving PM USA and joining the corporate affairs department at Altria. Parrish TT, 1/27/05, 11352:24-11353:24; US 62461. Moreover, Altria's Vice-President of Government Affairs served as a Class A Director of TI, because "the head of Government Affairs always sat on the TI Executive Committee." Parrish TT, 1/27/05, 11353:25-11354:25; (no bates) (US 88252); (no bates) (US 88308).

In addition, Parrish noted that Altria had approval authority for CTR Special Projects in the late 1980s and early 1990s. Parrish TT, 1/27/05, 11351:20-11352:2. Altria (operating as Philip Morris Companies) issued checks to fund CTR Special Projects. Id. at 11352:3-23.

Accordingly, because Altria has participated in the Enterprise and conspiracy, both directly and indirectly, it cannot escape liability simply by virtue of being a holding company.

* * * *

## Appendix I

### Glossary

The following is a listing and definition of many of the technical terms used most frequently in this Opinion. It would be impossible to include them all. Many of the terms identify extremely complex scientific phenomena which require many pages, if not books, to explain adequately. The definitions provided are intended to serve as a concise, useful, short-hand reference for the reader as she wades through a mass of what may well be unfamiliar, dense, and admittedly dry material.

**Bias:** Procedures or data which would affect the accuracy of the findings of an epidemiologic study. In epidemiologic research, there are three different kinds of bias: information bias, selection bias, and confounding.

**Bioavailability:** The amount and rate of entrance of a drug into the circulatory system.

**Biomarkers:** Compounds or other indicators can be measured in a body fluid, a tissue, and air breathed by people, that demonstrate exposure to a possible source of disease.

**Brand Equity:** The value built up in a brand, made up of a combination of 5 elements: product, packaging, positioning, promotion and price.

**Cancer:** Development of a tumor or mass of cells that have uncontrolled, unrestrained growth.

**Carcinogen:** An agent that causes cancer.

**Case Control Studies:** A backward-looking observational epidemiological study which examines people who have a disease and people who don’t and determines who was exposed to a source of the disease and to what degree.

**Cohort Studies:** A forward-looking observational epidemiological study which examines people exposed and not exposed to substances for comparison and follows them over time to analyze the development of a disease.

**Compensation:** Smokers increase puff volume, puff frequency, and number of cigarettes smoked to compensate for the reduced yield of nicotine in low yield cigarettes.

**Confidence Interval:** The width around a statistic which describes where scientists think the "truth" lies. Typically, a 95 percent confidence interval is used, which means, for example, "we think with 95 % certainty, that the true increase in risk is in this interval."

**Confounding:** Bias that arises when the effect of one factor is mixed up with the effect of the factor being studied.

**COPD:** Chronic obstructive pulmonary disease, the irreversible damage of the lung that results in shortness of breath. Often, in the past, it has been referred to as "emphysema."

**Cotinine:** An alkaloid that is the principal metabolite of nicotine and is widely used as an indicator of recent exposure to nicotine.

**Countertop Display:** A free-standing display with a minimum height of 30 inches and a minimum width of 18 inches that is placed on the counter at retail shops within the line-of-sight of any customer who is standing in line for the register.

**CPS-I:** Cancer Prevention Study I, a study carried out by the American Cancer Society from 1960 to 1972 which followed over one million smokers, former smokers, and never smokers for twelve years.

**CPS-II:** Cancer Prevention Study II, a study begun by the American Cancer Society in 1982, which continues to follow and monitor one million smokers, former smokers, and never smokers.

**Cross-Sectional Studies:** An observational epidemiological study which looks at a population at one particular moment in time and records information about the disease of interest and other relevant factors or personal characteristics.

**Direct Mail Marketing Database:** A database within which Defendants maintain information about individuals to whom they have sent mail in the past or intend to send mail in the future. The information maintained includes, for example, name, age, mailings sent and dates of mailings, demographic information, smoking preference, and whether the individual has provided any proof of age, such as a signature or government issued identification. Any records of any individuals who are currently alive and are 21 years of age or older to whom Defendants have sent mail at any point in time shall be deemed to be included in this definition, even if Defendants have since moved those records to a second database, to an archive, or have in some other way designated them as not to receive additional mail.

**Disaggregated Marketing Data:** Data that has been broken down by type of marketing (including sales data), brand, geographical region (to the smallest level of geographic specificity maintained by each Defendant), type of promotion or marketing used, number of cigarettes sold, advertising in stores and any other category of data collected and/or maintained by or on behalf of each Defendant. This breakdown of marketing data is required by the FTC but kept confidential. The FTC only publishes only the aggregated data.

**Dose-response relationship:** The relationship between the amount of exposure and the degree of response.

**Epidemiology:** The science of conducting studies of health and disease in the population, describing how much disease there is, and identifying the causes of disease.

**ETS:** Environmental tobacco smoke, the combination of the sidestream smoke that is released from the cigarette's burning end and the mainstream smoke exhaled by the active smoker.

**Free Nicotine:** Free or unprotonated nicotine does not have a proton or positive chemical charge. It has an effect on sensory nerves, which contributes to the impact or strength of the cigarette. Free nicotine is absorbed more quickly than protonated nicotine across mucous membranes. Free nicotine transports across cells more rapidly. See also “unprotonated nicotine.”

**FUBYAS:** First user brand young adult smokers.

**Full Flavor:** An industry term used to indicate that the cigarette is not low tar. The FTC characterized the 15 mg. FTC tar divide as “the FTC’s official definition of low tar cigarettes” to distinguish full flavor from “light” cigarettes.

**Header Display:** The banner that is displayed by a retailer at the top of a cigarette display case, which may show a cigarette brand name, cigarette brand imagery, prices for cigarettes, or promotional offers to consumers.

**Impact:** Refers to the immediate sensory effect that the delivery of nicotine has on a smoker. This sensory response occurs through nicotine’s stimulation of the afferent nerves in the back of the throat when cigarette smoke is first inhaled, causing a peripheral nerve effect that is recognized by the brain. The impact of a cigarette is a characteristic distinct from taste.

**Information bias:** Bias created because the information obtained in the study may have some error, which leads to incorrect classification on exposure or outcome, referred to as misclassification.

**Line Extension:** Extension of an already existing product line into a new type of market (e.g., developing a “light” version of an existing full flavor cigarette).

**Longitudinal Studies:** A study in which the response for each experimental unit in the study is observed over time on two or more occasions. The defining feature of a longitudinal data set is repeated observations on experimental units.

**Mainstream Smoke:** Smoke exhaled by an active smoker.

**Meta Analysis:** A statistical approach which combines data from many different studies.

**Metabolite:** Products of metabolism.

**Mutagenic:** A term used to describe a substance that -- under some conditions in some systems -- can produce a change or mutation in DNA.

**Nicotine Transfer Efficiency:** The measurement of the amount of nicotine transferred from the original unsmoked tobacco rod to the cigarette smoke (where it is available for inhalation).

**Observational Studies:** Epidemiological studies which simply observe and report on natural occurrences in a population.

**Package Onsert:** A communication affixed to but separate from an individual cigarette pack and/or carton purchased at retail by consumers, such as a miniature brochure included beneath the outer cellophane wrapping or glued to the outside of the cigarette packaging.

**Price Promotion:** Marketing activity that directly or indirectly lowers the price of cigarettes to a customer or provides added value. Price promotion includes: retail value added (defined by the Federal Trade Commission (FTC) as "[a]ll expenditures and costs associated with the value added to the purchase of cigarettes, including buy one get one free and buy one get x (promotional item) free; promotional allowances (defined by the FTC as "promotional allowances paid to retailers and any other persons (other than full-time employees of the cigarette manufacturers) in order to facilitate the sale of any cigarette, excluding expenditures in connection with newspapers, magazines, outdoor, audio-visual, transit, and direct mail"); coupons (such as "cents off" type coupons that can apply to single pack, multi-pack, or carton purchases distributed in a variety of ways, including at the point of sale, in newspaper and magazine advertisements, via direct mail, at sponsored events, in product packaging, and on the Internet); sampling (distribution of free cigarettes to the public, including at events sponsored by cigarette companies, bar and club promotions, and other venues); and specialty item distribution (programs that provide gifts that reward brand loyalty).

**Protonated:** One of the two primary states of nicotine delivered in mainstream smoke, also referred to as "bound." This form of nicotine is more stable and has a slower rate of absorption over certain biological membranes.

**Pyrolysis:** Decomposition or transformation of a chemical compound caused by heat.

**Randomized Clinical Trials:** An experimental epidemiological study which involves randomly assigning people to either the treatment group, where the drug or active agent is provided, or to the control group, for whom a different drug, placebo, or activity is prescribed.

**Reference Cigarettes:** Cigarettes used for research purposes and not actually sold in stores.

**Relative Risk:** The rate of disease in people who have some particular exposure relative to that of a group of people who do not have that exposure.

**Satisfaction:** Refers to the pharmacological attributes associated with a cigarette's level of nicotine delivery. As found in industry documents, the word describes the "hit" of nicotine an individual receives when smoking a cigarette and the effect produced by that nicotine when it reaches the brain. Satisfaction, as used in this context, does not refer to the taste characteristics of

a particular cigarette.

**Secondhand Smoke** (also called environmental tobacco smoke): The smoke which is released by smoldering cigarettes (sidestream smoke) and that which is exhaled by smokers and then inhaled by nonsmokers (mainstream smoke).

**Selection bias:** Bias stemming from the manner in which people are selected to be in the study.

**Sidestream Smoke:** Smoke that is released from a cigarette's burning end.

**Starters:** New smokers.

**Statistical Significance:** Quality of a study whose results are unlikely to have occurred by chance. In this case, there was no consensus among testifying scientists on what minimum value represents statistical significance.

**Tar:** The solid material in tobacco smoke.

**Tolerance:** The changes in the brain, including addition of new receptors, as it attempts to adapt to the persistent presence of addictive drugs, e.g. nicotine. Over time, the brain becomes tolerant to the effects of nicotine and needs greater amounts of nicotine to produce the same effects on hormones as it once did before the development of tolerance.

**Unprotonated:** One of the two primary states of nicotine delivered in mainstream smoke. Unprotonated nicotine lacks a proton or positive chemical charge and can be more readily released from the tobacco rod of a cigarette and more readily absorbed into the body of the cigarette smoker. See also “free nicotine.”

**YAS:** Young adult smokers.

## Appendix II

**Surgeon General's Reports on the Health Consequences of Smoking**
All information obtained from http://www.cdc.gov/tobacco/sgr/index.htm

| Year | Title | Selected Topics | Selected Conclusions |
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| 1964 | Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service | – Evidence of the Relationship of Smoking to Health<br>–Consumption of Tobacco Products in the United States, Chemical and Physical Characteristics of Tobacco and Tobacco Smoke, Pharmacology and Toxicology of Nicotine, Mortality, Cancer, Non-Neoplastic Respiratory Diseases, Particularly Chronic Bronchitis and Pulmonary Emphysema, Cardiovascular Diseases, Other Conditions, Characterization of the Tobacco Habit and Beneficial Effects of Tobacco, Psycho-Social Aspects of Smoking, and Morphological Constitution of Smokers. | – "In view of the continuing and mounting evidence from many sources, it is the judgment of the Committee that cigarette smoking contributes substantially to mortality from certain specific diseases and to the overall death rate." p. 31.<br>– "Cigarette smoking is causally related to lung cancer in men; the magnitude of the effect of cigarette smoking far outweighs all other factors." p. 31.<br>– "Cigarette smoking is the most important of the causes of chronic bronchitis in the United States, and increases the risk of dying from chronic bronchitis and emphysema." p. 31.<br>– "It is established that male cigarette smokers have a higher death rate from coronary artery disease than non-smoking males. Although the causative role of cigarette smoking in deaths from coronary disease is not proven." p. 32.<br>– "Pipe smoking appears to be causally related to lip cancer. Cigarette smoking is a significant factor in the causation of cancer of the larynx. The evidence supports the belief that an association exists between tobacco use and cancer of the esophagus, and between cigarette smoking and cancer of the urinary bladder in men, but the data are not adequate to decide whether these relationships are causal." p. 32.<br>– "The habitual use of tobacco is related primarily to psychological and social drives, reinforced and perpetuated by the pharmacological actions of nicotine." p. 32.<br>– "Available data suggest an association between cigarette smoking and urinary bladder cancer in the male but are not sufficient to support a judgment on the causal significance of this association." p. 37. |

| Year | Title | Selected Topics | Selected Conclusions |
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| (1964) | | | – “Epidemiological studies indicate an association between cigarette smoking and peptic ulcer which is greater for gastric than for duodenal ulcer.” p. 39.<br>– “Tobacco amblyopia (dimness of vision unexplained by an organic lesion) has been related to pipe and cigar smoking by clinical impressions.” p. 39.<br>– “Increased mortality of smokers from cirrhosis of the liver has been shown in the prospective studies. The data are not sufficient to support a direct or causal association.” p. 39.<br>– Women who smoke cigarettes during pregnancy tend to have babies of lower birth weight.” p. 39.<br>–- “Smoking is associated with accidental deaths from fires in the home.” p. 39. |
| 1967 | The Health Consequences of Smoking: A Public Health Service Review: 1967 | – Current Information on the Health Consequences of Smoking.<br>– Smoking and Overall Mortality, Smoking and Overall Morbidity, Smoking and Cardiovascular Diseases, Smoking and Chronic Bronchopulmonary Diseases (Nonneoplastic), Smoking and Cancer, and Other Conditions and Areas of Research | – “This means that cigarette smokers tend to die at earlier ages and experience more days of disability than comparable nonsmokers.” p. 3.<br>– “If it were not for cigarette smoking, practically none of the earlier deaths from lung cancer would have occurred; nor a substantial portion of the earlier deaths from chronic bronchopulmonary diseases (commonly diagnosed as chronic bronchitis or pulmonary emphysema or both); nor a portion of the earlier deaths of cardiovascular origin. Excess disability from chronic pulmonary and<br>cardiovascular disease would also be less.” p. 3.<br>– “Cessation or appreciable reduction of cigars & smoking could delay or avert a substantial portion of deaths which occur from lung cancer, a substantial portion of the earlier deaths and excess disability from chronic bronchopulmonary diseases, and a portion of the earlier deaths and excess disability of cardiovascular origin.” p. 4. |

| Year | Title | Selected Topics | Selected Conclusions |
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| 1968 | The Health Consequences of Smoking: 1968 Supplement to the 1967 Public Health Service Review | – Technical Reports on the Relationship of Smoking to Specific Disease Categories<br>–Smoking and Cardiovascular Diseases, Smoking and Chronic Bronchopulmonary Diseases (Nonneoplastic), and Smoking and Cancer. | – "In addition, evidence herein presented shows that life expectancy among young men is reduced by an average of 8 years in "heavy" smokers, those who smoke over 2 packs a day, and an average of 4 years in "light" cigarette smokers, those who smoke less than one-half pack per day." p. 3.<br>– "Because of the increasing convergence of epidemiological and physiological findings relating cigarette smoking to coronary heart disease, it is concluded that cigarette smoking can contribute to the development of cardiovascular disease and particularly to death from coronary heart disease." p. 3.<br>– "Additional physiological and epidemiological evidence confirms the previous findings that cigarette smoking is the most important cause of chronic nonneoplastic bronchopulmonary disease in the United States." p. 3.<br>– "Cigarette smoking can adversely affect pulmonary function and disturb cardiopulmonary physiology." p. 3.<br>– "Cigarette smoking is causally related to lung cancer in women but accounts for a smaller proportion of cases than in men." p. 4.<br>– "Smoking is a significant factor in the causation of cancer of the larynx and in the development of cancer of the oral cavity." p. 4.<br>––"Further epidemiological data strengthen the association of cigarette smoking with cancer of the bladder and cancer of the pancreas." p. 4. |
| 1969 | The Health Consequences of Smoking: 1969 Supplement to the 1967 Public Health Service Review | – Technical Reports on the Relationship of Smoking to Chronic Disease Categories<br>–Smoking and Cardiovascular Diseases, Smoking and Chronic Obstructive Bronchopulmonary Disease, Smoking and Cancer, Effects of Smoking on Pregnancy, and Smoking and Noncancerous Oral Disease. | – "Autopsy studies suggest that cigarette smoking is associated with a significant increase in atherosclerosis of the aorta and the coronary arteries." p. 4.<br>– "Epidemiological and laboratory evidence supports the view that cigarette smoking can contribute to the development of pulmonary emphysema in man." p. 5.<br>– "New data are presented which confirm the finding that maternal smoking during pregnancy is associated with low birth weight in infants and also indicate that maternal smoking is associated with an increased incidence of prematurity defined by weight alone. In addition, it appears |

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| (1969) | | | that maternal smoking during pregnancy may be associated with an increased incidence of spontaneous abortion, stillbirth, and neonatal death and that this relationship may be most marked in the presence of other risk factors." p. 5.<br>– "The data available lead to the conclusion that ulceromembranous gingivitis, alveolar bone loss, and stomatitis nicotina are more commonly found among smokers than among nonsmokers." p. 5-6.<br>–"While further research is needed to investigate the exact biomechanisms involved in the pathological effects of smoking, the evidence clearly shows that cigarette smoking constitutes a major health hazard in the United States." p. 6. |
| 1971 | The Health Consequences of Smoking: A Report of the Surgeon General | –Cardiovascular Diseases, Chronic Obstructive Bronchopulmonary Disease, Cancer, Pregnancy, Peptic Ulcer, Tobacco Amblyopia | – "Analysis of other factors associated with Coronary Heart Disease ("CHD") (high serum cholesterol, high blood pressure, and physical inactivity) show that cigarette smoking operates independently of these other factors and can act jointly with certain of them to increase the risk of CHD appreciably." p. 8.<br>– "There is evidence that cigarette smoking may accelerate the pathophysiological changes of pre-existing coronary heart disease and therefore contributes to sudden death from CHD." p. 8.<br>– "Autopsy studies suggest that cigarette smoking is associated with a significant increase in atherosclerosis of the aorta and coronary arteries." p. 8.<br>– "The cessation of smoking is associated with the decreased risk of death from CHD." p. 8.<br>– "Data from numerous prospective studies indicate that cigarette smoking is associated with increased mortality from cerebrovascular disease." p. 9.<br>– "Cigarette smoking has been observed to increase the risk of dying from nonsyphilitic aortic aneurysm." p. 9.<br>– "Data from a number of retrospective studies have indicated that cigarette smoking is a likely risk factor in the development of peripheral vascular disease. Cigarette smoking also appears to be a factor in the aggravation of peripheral vascular disease." p. 9. |

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| (1971) | | | – "Cigarette smoking is the most important cause of chronic obstructive bronchopulmonary disease in the United States. Cigarette smoking increases the risk of dying from pulmonary emphysema and chronic bronchitis." p. 9.<br>– "Cigarette smoking does not appear to be related to death from bronchial asthma, although it may increase the frequency and severity of asthmatic attacks in patients already suffering from this disease." p. 10.<br>– "The risk of developing lung cancer appears to be higher among smokers who smoke high "tar" cigarettes, or smoke in such a manner as to produce higher levels of "tar" in the inhaled smoke." p. 11.<br>– "Clinical and pathological studies have suggested that tobacco smoking may be related to alterations in the metabolism of tryptophan and may in this way contribute thereby to the development of urinary tract cancer." p. 13.<br>– "Epidemiological studies have suggested an association between cigarette smoking and cancer of the pancreas. The significance of the relationship is not clear at this time." p. 13.<br>– "There is strong evidence to support the view that smoking mothers have a significantly greater number of unsuccessful pregnancies due to stillbirth and neonatal death as compared to nonsmoking mothers." p. 13.<br>– "Smoking appears to reduce the effectiveness of standard Peptic ulcer treatment and to slow the rate of ulcer healing." p. 13. |
| 1972 | The Health Consequences of Smoking: A Report of the Surgeon General 1972 | - Cardiovascular Diseases, Non-neoplastic Bronchopulmonary Diseases, Cancer, Pregnancy, Gastrointestinal Disorders, Allergy, Public Exposure to Air Pollution from Tobacco Smoke, and Harmful Constituents of Cigarette Smoke. | – "Additional epidemiological evidence confirms a significant association between the combined use of cigarettes and alcohol, and cancer of the esophagus." p. 5.<br>– "Epidemiological studies have demonstrated a significant association between cigarette smoking and cancer of the urinary bladder in both men and women." p. 5.<br>– "Epidemiological evidence demonstrates a significant association between cigarette smoking and cancer of the pancreas." p. 5.<br>– "An investigation in human volunteers has suggested that cigarette smoking decreases the effectiveness of the lower esophageal sphincter as a |

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| (1972) | | | barrier against gastro-esophageal reflux.” p. 6.<br>– “Tobacco leaf, tobacco pollen, and tobacco smoke are antigenic in man and animals.” [p. 6]<br>– “An atmosphere contaminated with tobacco smoke can contribute to the discomfort of many individuals.” p. 7.<br>– “The presence of such levels indicates that the effect of exposure to carbon monoxide may on occasion, depending upon the length of exposure, be sufficient to be harmful to the health of an exposed person.” p. 7.<br>– “Certain occupations are associated with an increased risk of developing lung cancer. In these occupational settings cigarette smoking appears to exert an effect that produces much higher lung cancer rates than those resulting either from the occupational exposure alone or from smoking alone.” p. 4. |
| 1973 | The Health Consequences of Smoking | - Cardiovascular Diseases, Nonneoplastic Bronchopulmonary Disease, Cancer, Pregnancy, Peptic Ulcer Disease, Pipe and Cigar Smoking, and Exercise Performance. | – “The results of recent studies suggest that cigarette smoking is most strongly associated with a higher stillbirth rate among women who possess less favorable socioeconomic surroundings or an unfavorable previous obstetrical history.” p. 125.<br>– “The results of experiments in animals demonstrate that exposure to tobacco smoke and some of its ingredients, such as nicotine, can result in a significant increase in stillbirth rate.” p. 125.<br>– “Clinical studies in healthy, young men have shown that cigarette smoking impairs exercise performance, especially for many types of athletic events and activities involving maximal work capacity.” p. 247.<br>– “Data from experiments in several different animal species suggest that nicotine potentiates acute duodenal ulcer formation by means of inhibition of pancreatic bicarbonate output.” p. 163.<br>– “Cigarette smoking has been demonstrated to inhibit pancreatic bicarbonate secretion in healthy young men and women.” p. 163.<br>– “Pipe and cigar smokers in the United States as a group experience overall mortality rates that are slightly higher than those of nonsmokers, but these rates are substantially lower than . . . cigarette smokers.” p. 229. |

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| 1974 | The Health Consequences of Smoking | - Cardiovascular Diseases, Cancer, Non-neoplastic Bronchopulmonary Diseases. | – "New epidemiologic data suggest that women who smoke cigarettes have a greater risk of sudden death from CHD than do nonsmoking women." p. 19.<br>– "Data from epidemiologic studies support a strong association between atherosclerotic brain infarction and cigarette smoking in premenopausal women and in men of all ages." p. 19.<br>– "The effect of cigarette smoking on esophageal cancer mortality rates has been shown to be independent of and synergistic with the effect of alcohol consumption." p. 55. |
| 1975 | The Health Consequences of Smoking 1975 | – Overview – The Health Consequences of Smoking.<br>– Cardiovascular Diseases, Cancer, Nonneoplastic Bronchopulmonary Diseases, and Involuntary Smoking. | |
| 1976 | The Health Consequences of Smoking: A Reference Edition Selected Chapters from 1971 through 1975 | - Cardiovascular Disease, Chronic Obstructive Bronchopulmonary Disease, Cancer, Pregnancy, Peptic Ulcer Disease, Involuntary Smoking, Allergy, Tobacco Amblyopia, Pipes and Cigars, Exercise Performance and Harmful Constituents of Cigarette Smoke. | |
| 1978 | The Health Consequences of Smoking, 1977-1978 | - Review of past findings plus current data | |

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| 1979 | Smoking and Health: A Report of the Surgeon General | - Mortality, Morbidity, Cardiovascular Diseases, Cancer, Non-Neoplastic Bronchopulmonary Diseases, Interaction Between Smoking and Occupation, Pregnancy and Infant Health, Peptic Ulcer Disease, Allergy and Immunity, Involuntary Smoking, Interactions of Smoking with Drugs, Food Constituents and Responses to Diagnostic Tests, Other Forms of Tobacco Use, Constituents of Tobacco Smoke, Biological Influences on Cigarette Smoking, Behavioral Factors in the Establishment, Maintenance and Cessation of Smoking, Smoking in Children and Adolescents: Psychosocial Determinants and Prevention Strategies. Psychosocial Influences on Cigarette Smoking, Modification of Smoking Behavior. | – "A nonspecific decrease in 'tar,' however, does not necessarily imply a specific decrease in any single dangerous substance." |
| 1980 | The Health Consequences of Smoking for Women: A Report of the Surgeon General | - Mortality, Morbidity, Cardiovascular Diseases, Cancer. | – "Coronary heart disease, including acute myocardial infarction and chronic ischemic heart disease, occurs more frequently in women who smoke." p. 7.<br>– "The use of oral contraceptives by women cigarette smokers increases the risk of a myocardial infarction by a factor of approximately ten." p. 7.<br>– "Women who smoke low 'tar' and nicotine cigarettes experience less |

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| (1980) | | | risk for coronary heart disease than women who smoke high ‘tar’ and nicotine cigarettes, but their risk is still considerably greater than that of nonsmokers.” p. 7.<br>– “Women cigarette smokers experience an increased risk for subarachnoid hemorrhage…” p. 7.<br>– “Cigarette smoking is causally associated with cancer of the lung, larynx, oral cavity, and esophagus in women as well as in men; it is also associated with kidney cancer in women.” p. 8.<br>– “Cigarette smoking has been causally related to all four of the major histologic types of lung cancer in both women and men, including epidermoid, small cell, large cell and adenocarcinoma.” p. 8.<br>– “Recent statistics indicate a rising death rate due to chronic obstructive lung disease (COLD) among women. The data available demonstrate an excess risk of death from COLD among smoking women over that of nonsmoking women. This excess risk is much greater for heavy smokers than for light smokers.” p. 9.<br>– “The relationship between maternal smoking and reduced birth weight is independent of all other factors that influence birth weight including race, parity, maternal size, socioeconomic status, and sex of child; it is also independent of gestational age.” p. 10.<br>– “Increasing levels of maternal smoking result in a highly significant increase in the risk of abruptio placentae, placenta previa, bleeding early or late in pregnancy, premature and prolonged rupture of membranes, and preterm delivery-all of which carry high risks of prenatal loss.” p. 11.<br>– “Up to 14 percent of all preterm deliveries in the United States may be attributable to maternal smoking.” p. 11.<br>– “Studies in women and men suggest that cigarette smoking may impair fertility.” p. 12. |

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| 1981 | The Health Consequences of Smoking–The Changing Cigarette: A Report of the Surgeon General | - Pharmacology and Toxicology, Cancer, Cardiovascular Diseases, Chronic Obstructive Lung Disease, Pregnancy and Infant Health, Behavioral Aspects, and Lower "Tar" and Nicotine Cigarettes and Use. | – "There is no safe cigarette and no safe level of consumption." p. vi.<br>– "Smoking cigarettes with lower yields of 'tar' and nicotine reduces the risk of lung cancer and, to some extent, improves the smoker's chance for longer life, provided there is no compensatory increase in the amount smoked. However, the benefits are minimal in comparison with giving up cigarettes entirely. The single most effective way to reduce hazards of smoking continues to be that of quitting entirely." p. vi.<br>– "It is not clear what reductions in risk may occur in the case of diseases other than lung cancer. The evidence in the case of cardiovascular disease is too limited to warrant a conclusion, nor is there enough information on which to base a judgment in the case of chronic obstructive lung disease. In the case of smoking's effects on the fetus and newborn, there is no evidence that changing to a lower 'tar' and nicotine cigarette has any effect at all on reducing risk." p. vi.<br>– "Carbon monoxide has been impugned as a harmful constituent of cigarette smoke. There is no evidence available, however, that permits a determination of changes in the risk of diseases due to variations in carbon monoxide levels." p. vi.<br>– "Smokers may increase the number of cigarettes they smoke and inhale more deeply when they switch to lower yield cigarettes. Compensatory behavior may negate any advantage of the lower yield product or even increase the health risk." p. vi.<br>– "The 'tar' and nicotine yields obtained by present testing methods do not correspond to the dosages that the individual smokers receive: in some cases they may seriously underestimate these dosages." p. vi.<br>– "A final question is unresolved, whether the new cigarettes being produced today introduce new risks through their design, filtering mechanisms, tobacco ingredients, or additives. The chief concern is additives. The Public Health Service has been unable to assess the relative risks of cigarette additives because information was not available from manufacturers as to what these additives are." p. vi. |

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| 1982 | The Health Consequences of Smoking–Cancer: A Report of the Surgeon General | - Biomedical Evidence for Determining Causality, Mechanisms for Carcinogenesis, Involuntary Smoking and Lung Cancer, Cessation of Smoking. | – "Cigarette smokers have overall mortality rates substantially greater than those of nonsmokers. Overall cancer death rates of male smokers are approximately double those of nonsmokers; overall cancer death rates of female smokers are approximately 30 percent higher than nonsmokers, and are increasing." p. 5.<br>– "Overall cancer mortality rates among smokers are dose-related as measured by the number of cigarettes smoked per day. Heavy smokers (over one pack per day) have more than three times the overall cancer death rate of nonsmokers." p. 5.<br>– "With increasing duration of smoking cessation, overall cancer death rates decline, approaching the death rate of nonsmokers." p. 5.<br>– "Cigarette smoking is a contributory factor in the development of bladder cancer in the United States." p. 7.<br>– "Cigarette smoking is a contributory factor in the development of kidney cancer in the United States." p. 7.<br>– "Cigarette smoking is a contributory factor in the development of pancreatic cancer in the United States." p. 7.<br>– "In epidemiological studies, an association between cigarette smoking and stomach cancer has been noted. The association is small in comparison with that noted for smoking and some other cancers." p. 8.<br>– "Although the currently available evidence is not sufficient to conclude that passive or involuntary smoking causes lung cancer in nonsmokers, the evidence does raise concern about a possible serious public health problem." p. 9. |
| 1983 | The Health Consequences of Smoking–Cardiovascular Disease: A Report of the Surgeon General | Ateriosclerosis, Coronary Heart Disease, Cerebrovascular Disease, Atherosclerotic Peripheral Vascular Aortic Aneurysm, Pharmacological And Toxicological Implications of Smoke Constituents on Cardiovascular Disease, Trends | – "Cigarette smoking should be considered the most important of the known modifiable risk factors for coronary heart disease in the United States." p. iv.<br>– "Smokers are at a two to four times greater risk for sudden cardiac death (SCD) than are nonsmokers." p. v.<br>– "The association between cigarette smoking and cerebrovascular disease (CVD) is largely confined to the younger age groups, with little evidence of an effect after age 65." p. v. |

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| (1983) | | in Cardiovascular Diseases. | – "For women who both smoke cigarettes and use oral contraceptives, a strong association exists between their use and one form of stroke-subarachnoid hemorrhage." p. vi.<br>– "Cigarette smoking contributes to the development of aortic atherosclerosis and arteriosclerotic peripheral vascular disease (APVD)." p. vi. |
| 1984 | The Health Consequences of Smoking–Chronic Obstructive Lung Disease: A Report of the Surgeon General | - Effect of Cigarette Smoke Exposure on Measures of Chronic Obstructive Lung Disease Morbidity, Mortality from Chronic Obstructive Lung Disease Due to Cigarette Smoking, Pathology of Lung Disease Related to Smoking, Mechanisms by Which Cigarette Smoke Alters the Structure and Function of the Lung, Low Yield Cigarette and their Role in Chronic Obstructive Lung Disease, Passive Smoking, Deposition and Toxicity of Tobacco Smoke in the Lung. | – "Cigarette smoking is the major cause of chronic obstructive lung disease in the United States for both men and women. The contribution of cigarette smoking to chronic obstructive lung disease morbidity and mortality far outweighs all other factors." p. vii.<br>– " Smokers who switch from higher to lower yield cigarettes show compensatory changes in smoking behavior: the number of puffs per cigarette is variably increased and puff volume is almost universally increased, although the number of cigarettes smoked per day and inhalation volume are generally unchanged." p. 354.<br>– "Nonsmokers who report exposure to environmental tobacco smoke have higher levels of urinary cotinine, a metabolite of nicotine, than those who do not report such exposure." p.13.<br>– "The children of smoking parents have an increased prevalence of reported respiratory symptoms, and have an increased frequency of bronchitis and pneumonia early in life." p. 13. |

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| 1985 | Health Consequences of Smoking–Cancer and Chronic Lung Disease in the Workplace: A Report of the Surgeon General | - Evaluation of Chronic Lung Disease in the Workplace, Chronic Bronchitis: Interaction of Smoking and Occupation. | – "For the majority of American workers who smoke, cigarette smoking represents a greater cause of death and disability than their workplace environment." p. 11.<br>– "The evidence indicates that the effects of smoking and those occupational agents that cause bronchitis are frequently additive in producing symptoms of chronic cough and expectoration. Smoking has commonly been demonstrated to be the more important factor in producing these symptoms." p. 13.<br>– "Cigarette smoking and asbestos exposure appear to have an independent and additive effect on lung function decline." p. 13.<br>– "Cigarette smoking and coal dust exposure appear to have an independent and additive effect on the prevalence of chronic cough and phlegm." p. 14.<br>– - "Cigarette smoking seems to facilitate the development of byssinosis in smokers exposed to cotton dust, perhaps by the prior induction of bronchitis." p. 16. |
| 1986 | The Health Consequences of Using Smokeless Tobacco | Carcinogenesis Associated with Smokeless Tobacco Use, Noncancerous and Precancerous Oral Health Effects Associated with Smokeless Tobacco Use, Nicotine Exposure: Pharmokinetics, Addiction and Other Physiologic Effects. | – "The scientific evidence is strong that the use of snuff can cause cancer in humans. The evidence for causality is strongest for cancer of the oral cavity, wherein cancer may occur several times more frequently in snuff dippers compared to nontobacco users. The excess risk of cancer of the cheek and gum may reach nearly fiftyfold among long-term snuff users." p. vii.<br>– "Gingival recession is a commonly reported outcome of smokeless tobacco use." p. vi.<br>– "Since nicotine levels in the body resulting from smokeless tobacco use are similar in magnitude to nicotine levels from cigarette smoking, it is concluded that smokeless tobacco use also can be addictive." p. vi.<br>– "Some evidence suggests that nicotine may play a contributory or supportive role in the pathogenesis of coronary artery and peripheral vascular disease, hypertension, peptic ulcers, and fetal mortality and morbidity." p. vi. |

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| 1986 | The Health Consequences of Involuntary Smoking | Health Effects of Environmental Tobacco Smoke Exposure, Environmental Tobacco Smoke Chemistry and Exposures of Nonsmokers, Deposition and Absorption of Tobacco Smoke Constituents, Toxicity, Acute Irritant Effects, and Carcinogenicity of Environmental Tobacco Smoke. | – "Involuntary smoking is a cause of disease, including cancer, in healthy nonsmokers." p. vii.<br>– "The children of parents who smoke, compared with children of nonsmoking parents, have an increased frequency of respiratory infections, increased respiratory symptoms, slightly smaller rates of increase in lung function as matures." p. vii.<br>– "Simple separation of smokers and nonsmokers within same air space may reduce, but does not eliminate, exposure of nonsmokers to environmental tobacco smoke." p. vii. |
| 1988 | The Health Consequences of Smoking–Nicotine Addiction: A Report of the Surgeon General | - Effects of Nicotine That May Promote Tobacco Use, Treatment of Tobacco Dependence. | – "Cigarettes and other forms of tobacco are addicting." p. vi.<br>– "Nicotine is the drug in tobacco that causes addiction." p. iii.<br>– "The pharmacologic and behavioral processes that determine tobacco addiction are similar to those that determine addiction to drugs such as heroin and cocaine." p. iii. |
| 1989 | Reducing the Health Consequences of Smoking–25 Years of Progress: A Report of the Surgeon General | Advances in Knowledge of the Health Consequences of Smoking, Changes in Smoking-Attributable Mortality. | – "The prevalence of smoking among adults decreased from 40 percent in 1965 to 29 percent in 1987." p. i.<br>– "Nearly half of all living adults who ever smoked have quit." p. iv.<br>– "Between 1964 and 1985, approximately three-quarters of a million smokingrelated deaths were avoided or postponed as a result of decisions to quit smoking or not to start. Each of these avoided or postponed deaths represented an average gain in life expectancy of two decades." p. ii.<br>– "The prevalence of smoking remains higher among blacks, blue-collar workers, and less educated persons than in the overall population. The decline in smoking has been substantially slower among women than among men." p. i. |

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| (1989) | | | – "Smoking begins primarily during childhood and adolescence. The age of initiation has fallen over time, particularly among females. Smoking among high school seniors leveled off from 1980 through 1987 after previous years of decline." p. i.<br>– "Smoking is responsible for more than one of every six deaths in the United States. Smoking remains the single most important preventable cause of death in our society." p. i. |
| 1990 | The Health Benefits of Smoking Cessation: A Report of the Surgeon General | Assessing Smoking Cessation and Its Health Consequences, Smoking Cessation and Overall Mortality and Morbidity, Smoking Cessation and Respiratory Cancers, Smoking Cessation and Cardiovascular Disease, Smoking Cessation and Nonmalignant Respiratory Diseases, Smoking Cessation and Reproduction, Smoking, Smoking Cessation, and Other Nonmalignant Diseases. | – "Smoking cessation has major and immediate health benefits for men and women of all ages. Benefits apply to persons with and without smoking-related disease." p. i.<br>– "Former smokers live longer than continuing smokers. For example, persons who quit smoking before age 50 have one-half the risk of dying in the next 15 years compared with continuing smokers." p. i.<br>– "Smoking cessation decreases the risk of lung cancer, other cancers, heart attack, stroke, and chronic lung disease." p. i.<br>– "Women who stop smoking before pregnancy or during the first 3 to 4 months of pregnancy reduce their risk of having a low birthweight baby compared to that of women who never smoked." p. i.<br>– "The health benefits of smoking cessation far exceed any risks from the average 5 pound (2.3-kg) weight gain or any adverse psychological effects that may follow quitting." p. i. |
| 1992 | Smoking and Health in the Americas: A Report of the Surgeon General | Tobacco Use in Indigenous Societies, Prevalence of Smoking in Latin America, Smoking-Attributable Mortality in Latin America and the Caribbean, Economic Costs of the Health Effects of Smoking. | – "One of the major findings of the report is the crucial role of surveillance in understanding the intricate interrelationship of the factors that influence smoking." p. iii.<br>– "Developing countries, including those of Latin America and the Caribbean, are not behind their neighbors in the north with regard to the tremendous growing problem of noncommunicable diseases related to tobacco consumption." p. v.<br>– "Countries that are furthest along the path of industrialization have gone through a period of high smoking prevalence and are now experiencing the incongruous combination of declining prevalence and increasing morbidity |

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| | | | and mortality from smoking." p. iii. |
| 1994 | Preventing Tobacco Use Among Young People: A Report of the Surgeon General | Health Consequences of Tobacco Use by Young People, Adult Health Implications of Smoking Among Young People. | – "Nearly all first use of tobacco occurs before high school graduation; this finding suggests that if adolescents can be kept tobacco-free, most will never start using tobacco."<br>– "Most adolescent smokers are addicted to nicotine and report that they want to quit but are unable to do so; they experience relapse rates and withdrawal symptoms similar to those reported by adults."<br>– "Tobacco is often the first drug used by those young people who use alcohol, marijuana, and other drugs."<br>– "Adolescents with lower levels of school achievement, with fewer skills to resist pervasive influences to use tobacco, with friends who use tobacco, and with lower self-images are more likely than their peers to use tobacco."<br>– "Cigarette advertising appears to increase young people's risk of smoking by affecting their perceptions of the pervasiveness, image, and function of smoking."<br>– "Community wide efforts that include tobacco tax increases, enforcement of minors' access laws, youth-oriented mass media campaigns, and school-based tobacco-use prevention programs are successful in reducing adolescent use of tobacco." |

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| 1998 | Tobacco Use among US Racial/Ethnic Minority Groups - African Americans, American Indians, Alaskan Natives, Asian Americans, Pacific Islanders and Hispanics: A Report of the Surgeon General | Health Consequences of Tobacco Use Among Four Racial/Ethnic Minority Groups, Factors that Influence Tobacco Use Among Four Racial/Ethnic Minority Groups. | – "Cigarette smoking is a major cause of disease and death in each of the four population groups studied in this report. African Americans currently bear the greatest health burden. p. 6<br>– "Tobacco use varies within and among racial/ethnic minority groups; among adults, American Indians and Alaska Natives have the highest prevalence of tobacco use, and African American and Southeast Asian men also have a high prevalence of smoking. Asian American and Hispanic women have the lowest prevalence." p. 6.<br>– "Among adolescents, cigarette smoking prevalence increased in the 1990s among African Americans and Hispanics after several years of substantial decline among adolescents of all four racial/ethnic minority groups. This increase is particularly striking among African American youths, who had the greatest decline of the four groups during the 1970s and 1980s." p. 6.<br>– "No single factor determines patterns of tobacco use among racial/ethnic minority groups; these patterns are the result of complex interactions of multiple factors, such as socioeconomic status, cultural characteristics, acculturation, stress, biological elements, targeted advertising, price of tobacco products, and varying capacities of communities to mount effective tobacco control initiatives." p. 6.<br>– "Rigorous surveillance and prevention research are needed on the changing cultural, psychosocial, and environmental factors that influence tobacco use to improve our understanding of racial/ethnic smoking patterns and identify strategic tobacco control opportunities. The capacity of tobacco control efforts to keep pace with patterns of tobacco use and cessation depends on timely<br>recognition of emerging prevalence and cessation patterns and the resulting development of appropriate community-based programs to address the factors involved." p. 6. |

## APPENDIX B

Excerpts from *Blue Cross & Blue Shield of New Jersey, Inc. v. Philip Morris, Inc., et al.*, 178 F. Supp. 2d 198 (E.D.N.Y. 2001), *rev'd on other grounds*, 344 F.3d 211 (2d Cir. 2003) and 393 F.3d 312 (2d Cir. 2004).

[This opinion was issued after a full trial in which the jury found damages against defendants. The discussion which follows resulted in a denial of defendants' motion to overturn the verdict.]

[178 F. Supp. 2d at 208]

[T]he jury had ample ground to conclude [as it did] that defendants individually and as a group violated the New York Consumer Protection Act, section 349 of the Business Law, by deliberately misleading people who became clients of plaintiff, causing them to smoke earlier, more, and to quit later, than they would have absent the consumer fraud practiced on them by defendants; that this smoking causes specific diseases and makes treatment of other diseases more expensive; and that plaintiff incurred the extra costs of treating its clients who are or were smokers. Appropriate statistical and expert evidence proved the monetary costs of defendants' violation of Section 349 that were borne by plaintiff. The fact that the jury chose to take the most conservative view of damages suffered by plaintiff is no basis for finding lack of support for its verdict. In short, plaintiff proved that defendants' deliberate distortion of public knowledge about smoking directly resulted in increased medical costs to plaintiff in the amount found by the jury.

### II. The Jury

The jury sat for 44 trial days. It heard 34 witnesses, 10 of whom were Daubert screened experts. It had 1,632 demonstratives and exhibits. It viewed over 100 depositions, many of

which were of smokers who were clients of the plaintiff. It utilized numerous charts and diagrams that assisted in visualizing the parties' contentions and in understanding the statistical and other evidence.

[178 F. Supp. 2d at 210-230]

Here, plaintiff adduced sufficient evidence for a jury to find that defendants engaged in a successful scheme to distort the body of public knowledge; that they did so knowing the public, including plaintiff's members, would act upon defendants' statements and omissions; with the foreseeable result that plaintiff and other third-party payors would and did absorb the costs of increased medical services due to smoking resulting from defendants' actionable fraud. The evidence requires denial of defendants' motion for judgment as a matter of law if section 349 supports the verdict.

## IV. Evidence

Whatever the viability of plaintiff's claims under federal law and New York state common law, the jury has spoken, finding them unsupported; that decision was supportable and not inconsistent with a finding favoring plaintiff on another theory. The one claim that the jury found was supported by the evidence was that under section 349. Under the rule of Erie R. Co. v. Tompkins, 304 U.S. 64 (1938), that New York substantive law governs and supports the verdict. Federal procedure and rules of evidence were appropriately applied during the trial. As demonstrated below, the evidence including that at trial in the form of expert testimony and analysis as well as the deposition testimony of plaintiff's members establishes that plaintiff met

its burden of proving that defendants' deceptive practices caused it injury.

## A. Evidence of Medical Causation

### *1. Smoking causes cancer and other disease*

Plaintiff's evidence demonstrated smoking-related illnesses account for almost one of every five deaths each year in the United States, making cigarette smoking the leading cause of premature death in the United States. Trial Tr. 1150-52; see Attachment A below. [Table showing comparison of per-capita consumption of cigarettes and male lung cancer death rates omitted.]

There were some relatively small changes between 1990 and 2001. See Burns Demo 6 below. [Table showing actual causes of death in the Unites States in 1990 omitted.]

Annually, smoking-related illnesses kill hundreds of thousands of Americans, exceeding the combined deaths caused by automobile accidents, AIDS, alcohol use, illegal drug use, homicide, suicide and fires. Samet Demo 25 below (There were relatively small relative changes between 1990 and 2001. Burns Demo 6 supra); see also Trial Tr. 1090; Trial Tr. 1050-52. [Table showing deaths attributable to cigarette smoking in the United States in 1990 omitted.]

At trial, plaintiff's experts Dr. David Burns and Dr. Jonathan Samet testified that tobacco use is responsible for:

- cancers of the lung, mouth, larynx, esophagus, pancreas, uterus, cervix, kidney and colon;
- pulmonary diseases such as emphysema and bronchitis;
- cardiovascular diseases such as strokes, heart attacks, peripheral vascular disease,

and aortic aneurysms; and

– reproduction problems such as reduced fertility, increased rates of miscarriages and stillbirths, retarded uterine fetal growth and lowered infant birth weight.

Trial Tr. at 683-948 (Burns); Trial Tr. at 1104-1241 (Samet).

Dr. Samet testified as to known carcinogens identified in tobacco smoke to date. The 43 carcinogenic agents in cigarette smoke include: arsenic, benzine, cadmium, chromium VI, vinyl chloride, and nickel. See Samet Demo 3. Compared to those people who never smoke, current smokers are almost 15 times more likely to develop lung cancer, 12.7 times more likely to develop chronic obstructive pulmonary disease, 7.5 times more likely to develop esophageal cancer, 4.1 times more likely to suffer Ischaemic Heart Disease, 2.2 times more likely to develop pancreatic cancer, and 1.4 times more likely to suffer a cerebral hemorrhage. See Samet Demos 11 & 22; see also Doll, et. al., Mortality in Relation To Smoking: 40 Years Observations On Male British Doctors, 309 British Medical J. 901-11 (1994). All told, carcinogenic chemicals inhaled by persons smoking defendants' products have been linked to 85% of all lung cancer, 80% of deaths from all pulmonary diseases, and 30% of all deaths from other cancers. See Samet Demo 25; see also J.M. McGinnis & W.H. Foege, Actual Causes of Death in the United States, J. of Am. Med. Assoc. 2707-12 (1993).

In addition to causing disease and illness, smoking cigarettes can lead to nicotine addiction. Nicotine is the chemical substance in cigarettes that creates the "high" smokers experience. Once in the blood stream, nicotine is carried almost immediately to the brain where it sets off a series of chemical reactions that alter mood and produce feelings of both sedation and stimulation. Trial Tr. at 1335-36. It also activates the transmission of a natural chemical,

dopamine, that generates pleasurable body sensations, and ultimately causes a craving for nicotine delivered by cigarette smoke. Id.

So powerful is the addictive force of nicotine that, in the absence of nicotine, the addicted smoker suffers symptoms of physical withdrawal, including headaches, constipation, insomnia, depression, inability to concentrate and anxiety. Trial Tr. at 1343. Nicotine addicts in much the same way as does heroin and cocaine. Trial Tr. at 1329-30 (citing Health Consequences of Smoking, Surgeon General Report (1988). Many smokers are unable to quit until they suffer a heart attack or contract lung cancer, and even then, of those who survive the ordeal approximately one-half will return to smoking.

*2. Smoking aggravates medical costs*

Econometric and other models introduced at trial demonstrated that the health care costs to treat illness associated with smoking are astronomical. According to plaintiff's witness Dr. Wendy Max, plaintiff spent approximately $756 million to treat smoking caused disease since 1994. See Max Demo 10. Dr. Glenn Harrison testified that the figure is even higher when the costs associated with treating smokers for non-smoking caused illness were taken into account. Using an econometric model, he testified that the total economic damages to the plaintiff since 1994 were over $985 million dollars. See Harrison Demo 12. His calculations showed that a person whose respiratory or cardiovascular system is weakened by smoking would, in general, respond less readily to treatment for other diseases. The fact that a particular smoker might heal more readily than a particular nonsmoker is not decisive; the law of large numbers eliminates the effect of such discrepancies or anomalies. See Part VII, infra; see also K.E. Warner, T.A.

Hodgson, & C.E. Caroll, Medical Costs of Smoking in the United States: Estimates, Their Validity, and Their Implications, 9 Tobacco Control, 290-300 (1999) (applying econometric model); J.C. Bartlett, L.S. Miller, D.P. Rice, W. Max, Medical Care Expenditures Attributable To Smoking: United States, 43 Morbidity and Mortality Wkly. Rep. 469-72 (1994) (applying econometric model).

The introduction of both models was proper. See Blue Cross & Blue Shield of N.J., v. Philip Morris Inc., No. 98 CV 3287, 2000 WL 1738338 (E.D.N.Y. Nov. 1, 2000) (finding both models comply with Daubert); cf. Gerden v. Sandals Int'l., 262 F.3d 195 (2d Cir. 2001) ("For purposes of admissibility it is not required that a witness's account of an event be consistent with the same witness's other accounts of the same event."). The evidence supports the conclusion that extra costs result from treating smokers for diseases not caused directly by smoking. While there is no indication that the jury relied upon these damage calculations, the testimony was based on the records of the plaintiff. Both experts were highly qualified to testify; their models were subject to extensive Daubert hearings and determined to be consistent with sound scientific norms. See Part VII, infra (discussing appropriateness of statistical evidence for trial).

### B. Evidence of Deceptive Practices

Evidence demonstrated that defendants took a variety of deliberate and calculated steps over many decades to misrepresent the health effects of smoking cigarettes.

#### *1. Defendants denied causation despite contrary evidence in internal documents*

When significant medical research indicated a statistical relationship between smoking and cancer in the early 1940s and 1950s, defendants embarked on a campaign to discredit this research and reassure the public that their products were safe. Defendants recognized that the publication in the early 1950s of retrospective epidemiological studies showing a link between smoking and lung cancer, as well as mouse skin painting studies that confirmed the results of earlier research, threatened cigarette sales and tobacco stock prices. Trial Tr. at 686-88; see generally David L. Faigman, David H. Kaye, Michael J. Saks, & Joseph Sanders, 2 Modern Scientific Evidence: The Law and Science of Expert Testimony §§ 27-1.0 to 28-2.4 (1997) (epidemiological studies and toxicological studies); D. Mical Freedman, Leon Gordis & Michael D. Green, Reference Guide on Epidemiology, in Federal Judicial Ctr., Reference Manual on Scientific Evidence 333 (2d ed. 2000) (hereinafter Reference Manual); Bernard D. Goldstein and Mary Sue Henifin, Reference Guide on Toxicology, in Reference Manual, supra, at 181. Documents prepared by Hill & Knowlton, a representative of the tobacco industry, reveal:

> As another indication of how serious the problem is, the officials stated that salesmen in the industry are frantically alarmed and that the decline in tobacco stocks on the stock market has caused grave concern . . .

PTX 6023; Trial Tr. at 1251-52.

> This is, of course, the most challenging problem our organization has ever faced – and perhaps the most challenging problem that ever faced a great industry, one with annual sales of almost 5 billions [sic] at retail, and with economic roots that reach clear back to the farm.

PTX 2148; Trial Tr. at 1253.

Due to the "grave nature" of this threat, the evidence demonstrated that the defendants developed a joint plan to rebut the mounting proof indicating that cigarettes were dangerous and

to reassure the American public that the defendants would assume responsibility for researching whether smoking was dangerous to health:

> The underlying purpose of any activity at this stage should be reassurance of the public through wider communication of facts to the public. It is important that the public recognize the existence of weighty scientific views which hold there is no proof that smoking causes cancer.

PTX 2421; Trial Tr. 1256-57.

Defendants jointly formed the Tobacco Industry Research Committee (TIRC), later named the Council For Tobacco Research – USA (CTR) and issued "A Frank Statement to Cigarette Smokers." The "Frank Statement" was published on January 4, 1954 "in newspapers in virtually every city with a population of 50,000 or more, reaching more than 43 million Americans out of a population at the time of approximately 150 million." PTX 2426; Trial Tr. at 1260. Signed by the presidents of the defendant tobacco manufacturers, it denied that cigarette smoking was hazardous to health and promised that the tobacco industry would conduct independent research to address questions surrounding smoking and disease. It read in relevant part:

- "Recent reports on experiments with mice have given wide publicity to a theory that cigarette smoking is in some way linked with lung cancer in human beings. Although conducted by doctors of professional standing these experiments are not regarded as conclusive in the field of cancer research."

- "[T]here is no proof that cigarette smoking is one of the causes of lung cancer."

- "[Tobacco] always h[as] and always will cooperate closely with those whose task it is to safeguard the public health."

- "[Tobacco is] pledging aid and assistance to the research effort into all phases of tobacco [product] use and health."

- "For this purpose [Tobacco is] establishing a joint industry group .... This group

will be known as TOBACCO INDUSTRY RESEARCH COMMITTEE." (capital letters in original); and

– "In charge of the research activities of the Committee will be a scientist of unimpeachable integrity and national repute. In addition there will be an Advisory Board of scientists disinterested in the cigarette industry."

PTX 2362; Trial Tr. at 1257-60.

This statement of good faith was belied by internal documents from the defendants' own scientists suggesting that they possessed significant proof of the causal relationship between smoking and disease. See, e.g, PTX 18 ("In view of the facts presented in this report, it is recommended that management take cognizance of the problem and its implications to our industry and that positive research action be planned without delay.") (1953); PTX 46 ("If we can eliminate and reduce the carcinogenic agent in smoke we will have made real progress.") (1954). The incongruity between defendants' public statements and internal documents lasted from the 1950s into the late 1990s.

a. Public statements from the 1950s to the present

Plaintiff's evidence demonstrated that in public speeches, press releases, stockholder reports, television interviews, scientific studies, and letters to consumers and potential consumers, the defendants consistently denied the causal relationship between smoking and disease and argued to the public that more research was needed before a finding of danger was justified. In May 1957, George Weissman, vice president of Philip Morris, stated:

> Being as close to the picture as we are, we know that most of the attack is a lot of sound and fury. Without rehashing the arguments I'll merely assert that there's not one shred of conclusive evidence to support the link between cigarette smoking and lung cancer, certainly a lot less than the evidence concerning the

> inhalation of exhaust fumes from the automobiles driven around New York City and the smog fumes in Los Angeles.

PTX 9254; Trial Tr. at 4693.

The Tobacco Information Committee, an arm of the TIRC issued bi-monthly newsletters and press-releases to doctors, public health officials and members of the public. Early resulting headlines in the 1950s and 1960s included statements that cast doubt on ties between smoking and cancer. See, e.g., PTX 5461 ("Six experts state doubts on smoking-cancer theory. . .") (1957); PTX 5462 ("Study suggests that bronchitis may be the prime factor in lung cancer. . ."); (January-February 1958); PTX 5470 ("Many Scientific Reports Show Uncertainties, Doubts About Causation of Lung Cancer. . .") (November-December 1959); PTX 5474 ("Smoker's Personality Key To Cancer. . .") (October 1960); PTX 5484 ("Lung Cancer Rare in Bald Men. . .") (March-April 1964); PTX 5489 ("Genetic Factors Affect Heart, Lung Syndromes. Smoking Is Probably Not Associated With Coronary Disease. . .") (Winter 1967-68).

Evidence demonstrated that these types of materials appeared all over the country in various forms. In a 1964 press release, George Allen on behalf of the defendants, stated:

> If there is something in tobacco that is causally related to cancer or any other disease, the tobacco industry wants to find out, what it is and the sooner the better . . .
>
> Research to date has not established whether smoking is or is not causally involved in such diseases as lung cancer and heart disease, despite efforts to make it seem otherwise. The matter remains an open question – for resolution by scientists.

PTX 0408.

In 1969, the American Tobacco Company mailed to more than 140,000 of its share holders a booklet entitled The Cigarette Controversy. The accompanying press release

concluded:

> Despite the volume and virulence of any tobacco propaganda, the cold fact remains that no clinical or biological evidence has been produced which demonstrates how cigarettes relate to cancer or any other disease in human beings.

PTX 1998.

In 1969, representatives of the defendants published "The Cigarette Controversy Eight Questions and Answers," which stated in part:

> For many adults, cigarette smoking is one of life's pleasures. Does it cause a difference – even death. No one knows.
>
> The case against smoking is based almost entirely on inferences drawn from statistics and no causal relationship has actually been established. Many respected scientists find that cigarette smoking has not been shown to cause any human disease.
>
> From these developments have come many public warnings:
>
> "Don't smoke." "Stop smoking." A concerned public needs the truth about smoking and health. This requires that both sides of the controversy must be known. Statistics are not enough. If smoking does cause disease, why has it not been proved, after 15 years of intensive research, how this occurs?"
> . . .
> Does smoking cause disease? That question is still an open one.

PTX 565; Trial Tr. at 2860-61.

That same year, representatives of Brown & Williamson stated in the advertising copy for "Project Truth:"

> Ten years ago, there was a cancer scare over the wax in milk cartons. And over using iodine to get a suntan. These theories are about as valid as the one that says toads cause warts.
>
> And they're about as valid as today's scare tactics surrounding cigarettes. Because no one has been able to produce conclusive proof that cigarette smoking causes cancer. Scientific, biological, clinical or any other kind.

PTX 0636; Trial Tr. at 2859-60.

According to an internal document produced from the files of defendant Liggett Group that discusses the defendants' response to the 1964 Surgeon General report, the approach of the tobacco industry was to speak on these issues in a united voice:

> It is considered to be of prime importance that the industry maintain a united front and that if one or more companies were to conduct themselves as a matter of self interest, particularly in advertising, obvious vulnerability would be the result.

PTX 0329; Trial Tr. at 3426-27.

Evidence demonstrated these kinds of public pronouncements continued into the 1970s, 1980s, and 1990s. In anticipation of the 1979 Surgeon General Report on Smoking and Health, which defendants knew would be adverse to them, representatives of the defendants released, "Smoking and Health: The Continuing Controversy." The 168 page text included the following statements:

> Indeed, many scientists are becoming concerned that the preoccupation with smoking may be both unfounded and dangerous. Unfounded because evidence on many critical points is conflicting. Dangerous because it diverts attention from other suspected hazards. . .
>
> Despite claims to the contrary, no one in government or industry can explain the reported associations of smoking with lung cancer, heart disease, emphysema, low infant birth weight, and yes, even cancer of the pancreas. . .
>
> Scientists have not proven that cigarette smoke or any of the thousands of constituents as found in cigarette smoke cause human disease. . .

PTX 6266. Examples of such post 1980 denials also included statements widely disseminated through television, conferences, and letter campaigns. Among them are the following:

- On October 20, 1983, Tobacco Institute spokesperson, Anne Browder, referring to smoking causation, told a national audience on the ABC program "20/20": "The case is still open. The jury has not come in." PTX 1444.

- The next year, the Tobacco Institute published a pamphlet, entitled, "The Cigarette Controversy: Why More Research Is Needed," which stated: There is a cigarette controversy. The causal theory – that cigarette smoking causes or is the cause of the various diseases with which it is reported to be related statistically – is just that, a theory." PTX 1444.

- On May 16, 1988, the Tobacco Institute published a press release titled, "Claims That Cigarettes Are Addictive Contradict Common Sense," which stated: Smoking is a truly personal choice which can be stopped if and when a person decides to do so." PTX 1645.

- In a January 11, 1989 interview on the ABC program, "Good Morning America," Tobacco Institute representative Brennan Dawson stated the following on behalf of the tobacco industry: "[T]he causative relationship has not been established . . . I can't allow the claim that smoking is addictive to go unchallenged. . . . It's a matter of willpower." PTX 9508.

- Walker Merryman, Vice President of Tobacco Institute, wrote the following in an article published on April 27, 1989, in the Washington Times: "The difference between cigarette smoking and true addictions to hard drugs is stark and compelling." PTX 9791.

- In 1992, Philip Morris published a pamphlet entitled, "Tobacco Issues and Answers," that stated: Those who term smoking an addiction do so for ideological, not scientific reasons." PTX 5786.

- On April 15, 1994, the day after its and other CEOs from the industry testified before Congress that smoking was not addictive, Philip Morris placed an advertisement in the New York Times that stated: "Fact: Philip Morris does not believe smoking is addictive." PTX 1814.

Letters were sent to consumers all across the country, including many New York residents. Articles like the "Continuing Controversy" written in the 1970s denying causal connection between smoking and cancer were re-circulated in mailings after 1980. Letters included the following statements:

- "Despite all the research going on, medical science has not found any conclusive evidence that any element in cigarettes, tobacco, or tobacco smoke causes human disease."

– "We firmly believe that cigarettes have been unfairly blamed as a cause of human disease."

– "With the numerous attacks being made on smoking, it is indeed refreshing to read a letter such as yours and to be reassured that not everyone has accepted without question the adverse publicity the tobacco industry has received. . . Throughout the years, the public has received a largely one-sided view of the questions that have arisen about tobacco . . . Through a series of messages appearing in national newspapers and magazines, we are attempting to provide our side of such public issues as . . . passive smoking, smoking courtesy and smoking and health."

– "[I]n the absence of the identification of the processes or mechanisms involved in cancer causation, together with experimental animal evidence which raises questions regarding causation, we believe that scientific proof that cigarette smoking causes chronic diseases in humans is still lacking."

PTX 9853 (containing over 150 letters).

Communications reached elementary school teachers and principals. A 1990 form letter responding to inquiries from fifth grade students at a New York elementary school reads in relevant part:

> "[T]he simple and unfortunate fact is that scientists do not know the cause or causes of the chronic diseases reported to be associated with smoking. The answers to many unanswered smoking and health questions – and the fundamental causes of the diseases often statistically associated with smoking – we believe can only be determined through much more scientific research."

PTX 1688.

Other evidence confirmed that these communications were part of a general policy for the 1980s and beyond. See, e.g., PTX 1042 (Summarizing plans in conference titled "Marketing in the 80's": "Overall marketing policy will be such that we maintain faith and confidence in the smoking habit, whether brand choice is traditional or not in particular markets. This means that B.A.T. will not remain on the defensive, by simply reacting to alleged 'health' hazards and

related competitive challenges: instead we shall actively seek out all worthwhile prospects for brand and product reassurance in marketing throughout the world.”).

b. Knowledge from the 1950s to the present

Although the representatives of the defendants continued to release public statements and reports suggesting that smoking neither caused adverse health effects nor was addictive – as well as to finance research to support these claims – evidence demonstrated that defendants knew the contrary to be true: that smoking is both lethal and addictive.

Internal documents from defendants indicate that through independent company research and the sharing of this research through the TIRC and CTR, each of the major tobacco product manufacturers was aware early on that tobacco contributed to lung cancer. For example, a 1956 confidential memorandum from a Philip Morris Vice President of Research and Development to top executives at the company regarding the advantages of "ventilated cigarettes" stated: "Decreased carbon monoxide and nicotine are related to decreased harm to the circulatory system as a result of smoking .... [D]ecreased irritation is desirable ... as a partial elimination of a potential cancer hazard." PTX 105; Trial Tr. at 5391-92.

Similarly, a British American Tobacco Company (BATCo) document produced in 1958 following a series of meetings between BATCo representatives and twenty American scientists and researchers--including at least nine representatives of the tobacco companies and the Scientific Advisory Board of TIRC--stated that all of the tobacco company researchers with whom they met in the United States (and all but one of the outside people) "believed that smoking causes lung cancer" and noted that there was "general acceptance [among the group]

that the most likely means of causation is that tobacco smoke contains carcinogenic substances present in sufficient quantity to promote lung cancer when acting for a long time in a sensitive individual." PTX 0128.

That same year, a Philip Morris Vice President of Research, who later joined its Board of Directors, stated in a confidential internal memorandum that "the evidence . . . is building up that heavy cigarette smoking contributes to lung cancer either alone or in association with physical and physiological factors." A 1963 confidential internal memorandum from Liggett's research consulting firm admitted: "Basically we accept the inference of a causal relationship between the chemical properties of ingested tobacco smoke and the development of carcinoma . . ."

In addition to knowing early on that smoking is linked to lung cancer, evidence demonstrated that Tobacco was aware of other major deleterious health effects caused by smoking, including bronchitis, emphysema, and cardiovascular disease. To support this contention, plaintiff introduced among other documents the following excerpts from internal company materials:

- A 1963 confidential memorandum to Philip Morris's President and CEO describes components of cigarette smoke as "known carcinogens" and states: "Irritation problems are now receiving greater attention because of the general medical belief that irritation leads to chronic bronchitis and emphysema. Emphysema is often fatal either directly or through other respiratory complications. A number of experts have predicted that the cigarette industry ultimately may be in greater trouble in this area than in the lung cancer field."

- An internal memo produced for a B.A.T. Group Conference (e.g., BATCo, Brown & Williamson, and other subsidiaries of B.A.T. Industries) in November 1970 that states "nicotine may be implicated in the aetiology of cardiovascular disease."

Evidence also demonstrated that Defendants understood at least for the past four decades that smokers continue to smoke not by choice, but because of nicotine addiction. The evidence

included confidential BATCo documents related to BATCo's "Project Hippo" that indicate that at least as early as 1962 defendants were aware of the physiological and pharmacological effects of nicotine. PTX 0230. Copies of Project Hippo reports were circulated to TIRC, BATCo, Brown & Williamson, and R.J. Reynolds.

A 1963 memorandum written by Addison Yeaman, General Counsel at Brown & Williamson, concludes: Tobacco is "in the business of selling nicotine, an addictive drug." PTX 1978. Similarly, a 1978 internal Brown & Williamson memorandum acknowledges that "very few consumers are aware of the effects of nicotine, i.e., its addictive nature and that nicotine is a poison." PTX 1128. Overwhelming evidence that Tobacco was aware of nicotine's addictive properties is incorporated in a 1972 report by Philip Morris presented at a CTR conference; it states:

- "[N]icotine is the active constituent of cigarette smoke";
- "Without nicotine . . . there would be no smoking.";
- "Why then is there not a market for nicotine per se, to be eaten, sucked, drunk, injected, inserted or inhaled as a pure aerosol? The answer, and I feel quite strongly about this, is that the cigarette is in fact among the most awe-inspiring examples of the ingenuity of man.";
- "The cigarette should be conceived not as a product but as a package. The product is nicotine . . .";
- "Think of the cigarette pack as a storage container for a day's supply of nicotine ....";
- "Think of the cigarette as a dispenser for a dose unit of nicotine."

PTX 2355.

Further internal memoranda demonstrate that the defendants knew that nicotine addiction

could lead smokers of low-tar cigarettes to compensate, that is take longer and deeper puffs of cigarettes or to smoke more until the health benefits of these marketed products became negligible. A 1976 Lorillard memorandum stated:

> The consensus of opinion derived from a review of the literature on the subject indicates the most probable reason for the addictive properties of smoke is nicotine. Indications are that the smoker adjusts his smoking habits to satisfy the desire for nicotine, either by frequent or large puffs on the cigarette, or smoking a large number of cigarettes.

Trial Tr. at 444; see also PTX 0772 ("Given a cigarette that delivers less nicotine than he desires, the smoker will subconsciously adjust his puff volume and frequency, so as to obtain and maintain his per hour, per day requirement for nicotine . . ."); see also Part IV B 3 infra.

*2. Defendants funded scientific studies to discredit scholarship demonstrating causation*

Evidence at trial also suggested that defendants never intended to fund and produce the objective research it advertised. Internal documents such as the following acknowledged that research grants and studies sponsored by TIRC and CTR were intended to reassure the public, driven by litigation, and designed to sow doubt about the hazards associated with smoking:

– "Historically, the joint industry funded smoking and health research programs have not been selected against specific scientific goals, but rather for various purposes such as public relations, political relations, position for litigation, etc.... In general, these programs have provided some buffer to public and political attack of the industry, as well as background for litigious [sic] strategy." PTX 0807; Trial Tr. at 3156.

– "For nearly twenty years, this industry has employed a single strategy to defend itself on three major fronts – litigation, politics, and public opinion. While the strategy was brilliantly conceived and executed over the years helping us win important battles, it is only fair to say that it is not – nor was it intended to be – a vehicle for victory. On the contrary, it has always been a holding strategy,

consisting of creating doubt about the health charge without actually denying it. Advocating the public's right to smoke without actually urging them to take up the practice. Encouraging objective scientific as the only way to resolve the question of health hazard." PTX 0779; Trial Tr. at 3168-69.

– "It has been stated that CTR is a program to find out 'the truth about smoking and health.' What is truth to one is false to another. CTR and the Industry have publicly and frequently denied what others find as 'truth.' Let's face it. We are interested in evidence which we believe denies the allegation that cigarette smoking causes disease. . . [A]ll caveats and platitudes aside, we must assume that CTR exists for the good of the [tobacco] industry." PTX 0724; Trial Tr. at 3146.

As part of this effort, plaintiff's evidence showed defendants deliberately refrained from conducting in-house biological research demonstrating the causal relationship between smoking and cancer.

Evidence demonstrated that the defendants agreed to refrain from conducting biological testing of its products as marketed on animals in order to suppress research that was expected to lead to scientific confirmation that cigarettes being smoked by the public were hazardous. It included internal memoranda which referred to a "gentlemen's agreement" not to conduct animal laboratory experiments. An internal document, written by Associate Director of Scientific Issues for R.J. Reynolds, Frank G. Colby, dated December 9, 1981, states:

> Information was obtained that Philip Morris U.S.A. does not live up to the alleged 'gentlemens agreement' of not having animal laboratory facilities on their premises in this country.

PTX 1313; Trial Tr. at 2743; see also PTX 2230, Trial Tr. at 2746 (undated Philip Morris document) (accord).

*3. Defendants suppressed the development of new safer products to intercept quitters and to dispel appearance that their products were unsafe*

In addition to covering up the health risks and addictiveness of smoking, evidence demonstrated the defendants misled the public into believing that smoke from "lighter" cigarettes, containing reduced levels of tar and nicotine relative to that released by conventional cigarettes, would result in substantially less dangerous cigarettes. The defendants suppressed research into less harmful cigarettes as part of the cover-up of the continuing danger from low tar cigarettes.

Evidence demonstrated that defendants fraudulently promoted filtered and low-tar cigarettes as safer or healthier cigarettes than conventional ones. "Light" cigarettes, the evidence showed, lacked significant health benefits over conventional cigarettes, and in many instances increased the risk of emphysema, heart disease, and other diseases caused by smoking. Trial Tr. at 1386-1391. This is because of an effect called compensation: smokers of light cigarettes tend to smoke more, inhale more deeply, and hold the smoke in their lungs longer, in order to maximize their absorption of nicotine. Id. The jury could find that any real health benefit was far less than defendants led the public to believe and that this conduct was particularly insidious and effective in misleading smokers.

One goal in designing new products was, plaintiff evidence showed, to “intercept” quitters. See PTX 9666. As a 1978 Brown and Williamson internal memorandum put it: “Perhaps answers to another question ‘How do people stop smoking?’ could lend insight into the creation of new products. Having answers to this latter question, we might then design products to ‘intercept’ people who are trying to give up smoking.” PTX 1042. A BATCo internal memorandum stated: “All work in this area should be directed towards providing consumer reassurance about cigarettes and the smoking habit. This can be provided in different ways, for

example, by claimed low deliveries, by the perception of low deliveries and by the perception of mildness. Furthermore, advertising for low delivery or traditional brands should be constructed in ways so as not to provoke anxiety about health but to alleviate it and enable the smoker to feel assured about the habit and confident in maintaining it over time." Trial Tr. at 1844-45; see also, e.g., Trial Tr. at 1845-50 (Pollay) (discussing defendants' health messages in advertising and other public communications, including those related to low tar cigarettes); PTX 6548.019, 6548.021, 6548.023 (examples of advertisements for low tar cigarettes with express or implied health messages). It was not seriously disputed that defendants failed to inform the public about their knowledge of the limited health benefits of low tar cigarettes and their knowledge of smoker compensation by a change in the smoker's habits.

The evidence demonstrated that a second reason to delay the development of "safer" cigarettes stemmed from a general fear by defendants that over-aggressive marketing of low-tar products would alert the public to the dangers of stronger cigarettes. For example, documents from B.A.T. Industries, the parent company of Brown and Williamson, revealed that in 1978 Chairman Sir Patrick Sheehy, warned its affiliates against attempting to develop truly safer products:

> ". . . I thought I should write to explain why it is that I cannot support your contention that we should give a higher priority to projects aimed at developing a 'safe' cigarette (as perceived by those who claim our product is unsafe), by either eliminating, or at least reducing to acceptable levels, all components claimed by our critics to be carcinogenic..."
>
> "[I]n attempting to develop a safe cigarette you are, by implication, in danger of being interpreted as accepting that the current product is 'unsafe' and this is not a position that I think we should take."

PTX 9750.

Plaintiff's documents illustrated that this practice of delaying attempts to improve cigarette safety could be traced back to the 1950s. For example, a 1953 Hill and Knowlton memorandum to defendants' representatives entitled "Some Things To Do" states:

> "Develop some understanding with companies that, on this problem, none is going to seek a competitive advantage by inferring to its public that its product is less risky than others. No claims that special filters or toasting, or expert selection of tobacco, or extra length in the butt, or anything else, makes a brand any less likely to cause you-know-what. No "Play-Safe-with-Luckies" idea – or with Camels or with anything else."

PTX 2148 (emphasis added).

The tactic of broad denials of knowledge of harm by the industry was reflected in its research strategy. Evidence revealed that despite the continuing growth of each defendants' in-house research efforts, the defendants as a whole continued throughout the 1980s and 1990s to adhere to a "gentlemen's agreement" to avoid actual marketing any significant risk reducing innovation that would redound to one defendant's private benefit. PTX 6654; Trial Tr. at 2255-57. Potentially innovative risk reducing products were actually developed, but never seriously marketed. Others were introduced but without much attention to the fact that they might reduce health risks. See Trial Tr. 3401-02.

Testimony of plaintiff's members confirmed that through defendants' misstatements and omissions, defendants were successful in causing people to purchase and smoke low tar cigarettes (rather than quitting) in reliance upon the supposed health benefit communicated by defendants. See PTX 9903 (excerpts of Empire member testimony on light, low tar and filter cigarettes). The jury could conclude that this strategy had a misleading "informational effect" on emerging markets of tobacco consumers. It misled more "health conscious" consumers to

continue to smoke a product just about as dangerous as regular tar brands, while limiting the total information available to the public about the relative risks of smoking.

4. Defendants covered-up

Evidence also showed the tobacco industry purposefully concealed research in the United States. As one industry document stated, "[t]he burden of proof has shifted. It is no longer up to the scientists to prove that cigarettes cause lung cancer. It is the duty of all concerned to prove that they do not." PTX 2158 (internal quotations omitted). Other documents reveal members of the industry diverted correspondence through lawyers that contained "contentious information" – i.e., adverse health information sought to be covered up. PTX 1514, Trial Tr. at 2250-51 (There is a "mechanism for [] sending scientific information to B&W. In principle it will mean [] mailing contentious information to a legal man called Maddox ... with a covering letter ... saying that Millbank has asked that [Maddox] receive it.").

Documents charged subordinates to "root out" adverse information that would generate negative implications and to produce information that would encourage consumers to continue to smoke. PTX 10, Trial Tr. at 3130-31 ("The research of CTR ... discharged a legal responsibility. The manufacturer has a duty to know its product."); see also PTX 1451, Trial Tr. at 2246-48 ("RD&E is interested in information pertaining to the role of nicotine in the smoker's subjective perception of smoke quality. If the reports stick to research data, the reports would be interesting. However, if the reports include discussions of pharmacological effects of nicotine, the information will not be interesting and would be helpful to the plaintiff. RD&E will begin receiving reports from this activity and be prepared to inform BAT to cease sending the data to

B&W if the science is not interesting.”).

Some reports were to be withheld from the United States Surgeon General as well as from TIRC members if one of the defendants was disturbed at the report’s “implications [regarding] cardiovascular disorders.” PTX 294 (“TIRC agreed to withhold disclosure [of] Battlelle Reports to TIRC members or SAB until further notice ... [and submission of] Battelle or Griffith Developments to [the] Surgeon General [is] undesirable and ... continuance of Battelle work [is] useful but [the company is] disturbed at its implications [regarding] cardiovascular disorders.”). Information pertaining to the “carcinogenicity” of tobacco smoke was also vetted from reports. PTX 2470 (“The review of [] heterocyclic nitrogen compounds identified in tobacco smoke ... was omitted from our manuscript because of the reported carcinogenicity of the ... compounds.”).

### C. Evidence that Deceptive Practices Caused Consumers and Plaintiff Damages

Plaintiff’s evidence demonstrated that defendants knew such deceptive practices would cause – and that their practices did cause – plaintiff’s damages.

#### *1. Defendants knew the public would act upon deceptive practices*

Evidence showed the tobacco industry knew the consequences of prolonging the debate over the adverse effects of smoking would be to reassure addicted consumers to continue using their products:

> “[The goal is to] reassure the public, and still instinctive fears ... when definitive facts for giving complete assurance are still lacking; when scientific doubts must remain; and when new ‘unfavorable’ information can emerge from some

laboratory at any time, to act as a bomb shell on the whole tobacco industry." PTX 2148.

Other documents substantiate this view of defendants' program to mislead and string along smokers. PTX 0694; Trial Tr. at 3149-50 ("The CTR (then TIRC), was formed in the early 1950's in response to published reports linking cigarette smoking with various diseases. The primary purpose for the initial formation was a public relations one. . . . The CTR, with the help of others, has kept certain questions open when a large body of anti-tobacco scientists claimed the easy answers had been found."); PTX 0503; Trial Tr. at 3141-42 ("the long established policy of CTR, carried out through [the Scientific Advisory Board is to] . . . maintain the position that the existing evidence of a relationship between the use of tobacco and health is inadequate to justify research more closely related to tobacco; and . . . the study of the disease keeps constantly alive the argument that, until basic knowledge of the disease itself is further advanced, it is scientifically inappropriate to devote the major effort to tobacco."); PTX 9750 ("The BAT objective is and should be to make the whole subject of smoking acceptable to the authorities and to the public at large since this is the real challenge facing the Industry. Not only . . . is [this] the right objective but . . . it is an achievable one."); PTX 136; Trial Tr. at 1277-78 (A public relations campaign was suggested to "describe more or less truthfully the dramatic efforts" of Philip Morris to safeguard the public. The company also sought to make a pledge so that the public could be "assured that Parliament (Marlboro) would immediately bring them any tar and nicotine reducing innovations that were consistent with good smoking and that [Philip Morris] would do this no matter how much effort and expense were required. . . . [T]he attempt would be made to build an image of the brand as a brand that was made and sold by people who were

genuinely concerned about the health of their customers and did not believe in taking chances with the health of their customers.”).

### 2. *Evidence that defendants’ misrepresentations caused consumers and plaintiff damages*

Evidence in the form of expert testimony\ and analysis, and the depositions of plaintiff’s members, establishes that plaintiff met its burden of proving that defendants’ deceptive practices caused it injury. A key question was would plaintiff’s members’smoking behavior have been different if defendants had been truthful rather than deceitful. The testimony of plaintiff’s experts, documents and the deposition testimony of plaintiff’s members, provided strong evidence in support of an affirmative answer.

Plaintiff’s experts testified that: (1) members of the American public, including plaintiff’s members, underestimated the health risks of smoking at the time they started smoking and afterward; and (2) public acknowledgment by the tobacco companies that they believed smoking causes lung cancer and other diseases would have led the American public, including plaintiff’s members, not to start smoking, or to smoke less, or to quit smoking earlier. Trial Tr. at 3748.

#### a. Expert testimony

Defendants’ objections to plaintiff’s experts’ testimony was ruled on repeatedly at trial. Critical aspects need only be summarized here. The legal basis for utilizing the statistical analysis of plaintiff’s and defendants’ experts is set out in Part VII, <u>infra</u>.

i. Dr. Jon Krosnick

The testimony of Dr. Jon Krosnick, a behavioral scientist and leading expert on survey methodology, demonstrated how defendants' misrepresentations affected subscribers of the plaintiff. Dr. Krosnick presented detailed empirical data that the plaintiff's subscribers significantly underestimated the health risks and addictiveness of smoking, that the misrepresentations of the tobacco companies had a substantial impact on subscribers' perceptions of these risks, and that if the defendants had not engaged in the deceptive conduct proved by plaintiff fewer would have started to smoke and more would have quit sooner. Trial Tr. at 3731-3732. Dr. Krosnick was fully qualified by training, experience, and his published studies supporting his views. He employed standard survey procedures and analysis.

Dr. Krosnick's conclusions were based on statistical analysis of three types of data. First, Dr. Krosnick supervised a two thousand person telephonic survey conducted by an independent national survey research firm, Schulman, Ronca, Bucuvalis, Inc., to assess the impact of smoking related information on consumers. This survey was conducted according to acceptable survey techniques. Second, he compared these results with a comprehensive literature review of pre-existing surveys and articles assessing people's perceptions and attitudes concerning the health risks of smoking. Id. at 3733.

Third, Dr. Krosnick relied on a randomized sample of 156 Empire subscriber depositions, and over three hundred depositions of other Blue Cross plans, to extrapolate statistically meaningful inferences about the plaintiff subscriber population as a whole. Depositions were to be taken in person for three hours, with standardized questions, and without witness preparation to preserve the purity of the sample. Subscribers were either current or former smokers of

plaintiff or other Blue Cross plans, all of whom had submitted health care costs to these plans. The sampling procedure conformed to standard practice.

Dr. Krosnick had each of the relevant depositions reviewed by neutral coders who were appropriately selected, instructed and supervised. They coded the transcripts according to set instructions and coding questions. Id. at 3775-76. These questions, which were divided into five groups, focused on (1) what deponents now believed about the health risks and addictiveness of smoking regularly; (2) what deponents believed about the health risks and addictiveness of smoking at any other time after they had become regular smokers; (3) the deponents' beliefs about their exposure to statements made by the tobacco companies about the health risks of smoking; (4) the deponents' beliefs about their exposure to statements made by the tobacco companies concerning the addictiveness of smoking; and (5) the deponents' beliefs about how certain tobacco company statements would have affected their smoking behavior if they had been made to the public prior to, or during, the time that the witness smoked regularly. Trial Tr. at 3792-98.

The coding analysis of the depositions and the jury's view on a large screen of the witnesses being deposed, as well as their own analysis of transcripts of all relevant depositions, could lead the jury to find that: (1) a percentage of plaintiff's members believed that, at the time they started smoking regularly, smoking was not risky to their health or addictive; and (2) many plaintiff's members would have changed their smoking behavior if the tobacco companies had made timely candid statements about what defendants knew were the health risks and addictiveness of smoking. Id. at 3810-21.

The results obtained from analyzing the plaintiff's members' depositions were confirmed

by the results of the depositions taken of members of plans other than plaintiff. Id. at 3774. Dr. Krosnick also relied upon other surveys that had been conducted by reputable survey and polling organizations. Id. at 3733. Employing different methodological approaches to reach like results alleviated the potential limitations of any one approach. See David H. Kaye and David A. Freedman, Reference Guide on Statistics, Reference Manual, supra at 97 ("Sometimes several experiments or other studies, each having different limitations, all point in the same direction. . . Such convergent results strongly suggest the validity of the generalization."); Hans Zeisel & David Kaye, Prove It With Figures: Empirical Methods in Law and Litigation 68-78 (1997) ("Still more powerful support comes from when studies based on distinct research approaches (or employing the same general research approach but having differing strengths and weaknesses) reach comparable results"); Shari S. Diamond, Exploring Sources of Sentencing Disparity, The Trial Process 387 (1981) (comparing simulated methods and actual case analysis to determine disparities among federal sentences); Harry Kalvin & Hans Zeisel, The American Jury (1966) (separate approaches to assess impact of unanimity requirement on hung juries).

Dr. Krosnick concluded that smokers underestimate the relative risks of smoking, and that but for the misleading misrepresentations of the tobacco industry in the 1980s and afterward, more smokers would have changed their smoking behavior. He provided quantitative bases for his opinion.

ii. Dr. Jeffery Harris and others

Dr. Jeffery Harris, a medical doctor and an economist, provided statistical evidence about the effect of the defendants' misleading statements on smoking behavior. Tracing populations of

smoking prevalence in consumers around the country exposed to different levels of information, Dr. Harris modeled the impact of the defendants' misrepresentations on the plaintiff's subscribers. He traced the effects of two types of misconduct: 1) the health consequences which resulted from defendants' misrepresentations (an "information effect"); and 2) the consequences of defendants' "gentlemen's agreement" not to compete to produce less hazardous products or to delay their introduction (an "innovation effect").

Dr. Harris's opinion and analyses and the bases for his conclusions were sufficient to prove that smokers relied on publically available information in deciding whether to start and stop smoking and that the smoking behavior of plaintiff's members would have been different had it not been for defendants' fraud. His study showed how information "moves smoking rates," demonstrating that as consumers were exposed to different information about smoking, their smoking behavior changed. Trial Tr. at 3558. Empirical evidence further demonstrated that, according to this witness, consumption of cigarettes has historically decreased after significant disclosure about the dangers of smoking. Id. He testified that based upon data from many peer reviewed studies, accurate and timely information increased smokers "quit rates" and reduced teenage "initiation rates."

Using economic and statistical tools, Dr. Harris created a counterfactual model to graph what smoking patterns would look like had the defendant not misrepresented the hazards of its product to the public. He then calculated a "conduct attributable fraction" for each year – one based on the "informational effect" and the other on the "innovation effect" representing the portion of medical costs due to smoking related illnesses resulting from defendants' fraud. Under this information effect, Dr. Harris found that the rate of subscribers quitting smoking would have

increased by 4.5% per year (as opposed to a rate approximating 3% per year) in the absence of a conspiracy to deceive the public. Trial Tr. at 3448-3450. He reported that his 4.5% figure was conservative, and that had he mechanically relied upon the results of the underlying studies, quit rates could have increased to as high as 10%. Harris Dec. at 6 (Sept. 2000).

Dr. Harris used a separate model to determine the effects that resulted from defendants' attempt to suppress the introduction of safer cigarettes into the market. To measure this "innovation" effect, Dr. Harris consulted surveys, studies, and epidemiologic data to determine the rate at which the health risks of smoking had actually declined since the 1950s. He then measured how much faster the risks of smoking would have declined with the use of a truly safer technologically available cigarette. His measurements were also based on case-studies of risk reducing technologies that were never marketed, as well as defendants' rate of spending on research and development compared with those in other benchmark industries.

Dr. Harris's reliance on a combination of research techniques – mathematical models, statistical regression analysis methods, analysis of data from relevant benchmark industries, and reasoned judgments based upon available data – were consistent with data and research methods of other professional economists.

The smoking attributable costs calculated by Dr. Max and Dr. Harrison were utilized in combination with Dr. Harris's calculations to determine total damages on a per annum basis. Several thorough and prolonged hearings (in this case and in related actions) established that these statistical models satisfied Daubert and could be used in combination with individualized evidence to satisfy each element of the plaintiff's action.

b. Videotaped depositions

Videotaped depositions of smoker subscribers also substantiated the effect defendants' misstatements had on consumers. Relevant portions of 71 depositions relied upon in Dr. Krosnick's study were played to the jury. Some of these depositions showed that plaintiff's members underestimated the health risks of smoking at the time they started smoking (and afterward) and that public acknowledgment by the tobacco companies that they believed smoking causes lung cancer and other diseases would have led them not to start smoking, to smoke less, or to quit smoking earlier.

Many testified that the misrepresentations created doubt in the consumers' minds about the effects of tobacco use and reassured addicted users that it was safe to continue smoking. See, e.g., Sub. Dep. 156 NY 10 ("A: But at the time that these warnings came out is the same time the advertisement came out saying there was no proof. . . . So we're trying to weigh it on our own."); Sub. Dep. 156 NY 35 ("Q: Understanding that, what was it about the statement from the tobacco industry that you believe influenced you away from quitting? A: Probably that tests weren't conclusive."); Sub. Dep. 156 NY 61:52 (Q: And having seen this warning, the warning didn't make you stop smoking, did it? A: No, I was very healthy. You know, we all thought, everyone really, I can't speak for the whole world, but . . . my circle of friends all thought that . . . they [the public health community] don't know what they're talking about. They're just doing this to get on a bandwagon of some sort."); Sub Dep. 156 NY 66:107-8 (A:. . . I remember watching on television. It was [an] R.J. Reynolds . . . CEO type . . . saying that he smoked, you know, and that he sees nothing wrong with it and it doesn't impact his health at all. . . .Q: Did you take the same comfort? A: Yes, I did.").

Other testimony indicated that subscribers were affected by defendants' failure to fund and produce the objective research it advertised it would:

> Q: Did you know that as of February 2nd, 1953, that R.J. Reynolds had indicated in its documents . . . that studies of clinical data tend to confirm the relationship between heavy and prolong tobacco smoking and the incidence of cancer of the lung?
>
> A: Absolutely not.
>
> . . .
>
> Q: And if R.J. Reynolds had disclosed to you and to the public that studies of clinical data tend to confirm the relationship between heavy and prolonged tobacco smoking and the incidence of cancer of the lungs, do you think that would have affected you?
>
> A: Very much so.
>
> Q: How so.
>
> A: It would have scared me to death.

Sub. Dep. 156 NY – 61:126; see also, e.g., Sub. Dep. 156 NY – 38:152-53 ("A: . . . They were making available to us teens other information. I don't understand if it was available why we wouldn't have seen stuff like this on TV. If they were showing one part, and this indeed was available to the public, why weren't we seeing this part of it? . . . I can honestly say if I had this in front of me, I think I would have chosen not to smoke.); Sub. Dep. 156 NY – 35: 174 ("If they would have came forward to say that the product had some bad effects, long term effects, I would have probably looked upon it as that . . . in . . . [the] long term that it would be bad for me.")

Many testified that they were reassured by the non-verbal messages associated with smoking, while others verified the supposed effect of low tar products on intercepting quitters. See, e.g., Sub. Dep. 156 NY 51:132 ("Q: Do you recall any statements or ad by the tobacco

companies that provided some reassurance to you that smoking might not be bad for you . . . A: Well, like I said earlier before when the guy – I believe the guy is carrying the girl and they look like they're happy, it's like the guy can smoke and he still has his – he is giving the girl a piggyback ride and I guess he smokes, like hey you know, if smoking was bad for you you wouldn't be able to do this. You know."); Sub Dep. 156 NY 35:58-9 ("Q: Any statement from the tobacco industry that you believe influenced you not to quit? A: I would say when they started to come out with the light cigarettes, low tar cigarettes.").

This subscriber testimony was not universal, but it was nonetheless highly probative, and subject to skilled cross examination. The jury could find that significant portions of the deposition testimony corroborated statistical studies, extrapolations, and the conclusions of plaintiff's experts.

c. Surveys, medical and psychological literature, and documents

Ample surveys and literature were also provided to the jury. These included studies from the American Cancer Society, studies published in established psychological and medical journals, and Surgeon General reports. These documents supported plaintiff's contention about the kind of impact defendants' misrepresentations had on the population as a whole. See, e.g., Reducing the Health Consequences of Smoking: A Report of the Surgeon General 345 (1989) ("Another possible reason for some smokers' insensitivity to smoking risks is that they have not always been given the full message, or they have been given mixed messages from the cigarette industry. Factors that impede public awareness and acceptance of the health hazards of smoking include cigarette advertising and promotion and cigarette companies' public relations and

lobbying activities.”).

[178 F. Supp. 2d at 247-259]

**VII. Individualized Proof of Causation and Damages**

Defendants claim that the plaintiff’s use of aggregate proof violates their Constitutional rights and is contrary to New York law. The appropriateness of such proof was demonstrated in extensive memoranda denying defendants’ motions for summary judgment. Overseeing three years of coordinated discovery among nine related tobacco cases and two full trials, has only strengthened that demonstration. Statistical proof combined with other evidence is a necessary and pragmatic evidentiary approach to this and other massive tort cases. It is consistent with the defendants’ Constitutional rights and legally sufficient to support plaintiff’s state law claims.

Both parties were able to vigorously litigate each element of the New York Consumer Protection Act claim. As already stated, the trial lasted over 10 weeks and consumed 8,176 pages of trial testimony and argument. It involved countless expert reports, consultants, and witnesses, and more than 25 volumes containing thousands of exhibits and selections from hundreds of hours of videotaped depositions of smokers.

Defendants’ primary objection is that due process and jury trial rights require a particularized form of evidence for each element that – practically speaking – would make this case and cases like it impossible to try. There is little harm in retaining a requirement for "particularistic" evidence of causation and damages in sporadic individual accidents where there are few medical histories and witnesses; such evidence is almost always available and convenient in such litigation. See, e.g., In re Agent Orange Prod. Liab. Litig., 597 F. Supp. 740, 832-34

(E.D.N.Y. 1984).

In mass exposure cases with hundreds of thousands or millions of injured, however, the cost of such one-on-one procedures is insuperable and unsuitable for either a jury or a bench trial. The consequence of requiring individual proof from each smoker would be to allow defendants who have injured millions of people and caused billions of dollars in damages, to escape all liability. As Professor Rosenberg noted almost a score of years ago, such restrictions in the form of admissible evidence is impractical and unnecessary:

> "The concept of 'particularistic' evidence suggests that there exists a form of proof that can provide direct and actual knowledge of [the parties' conduct]. 'Particularistic' evidence, however, is no less probabilistic than is the statistical evidence that courts purport to shun."

David Rosenberg, The Causal Connection in Mass Exposure Cases: A 'Public Law' Vision of the Tort System, 97 Harv. L.Rev. 849, 870 (1984) (footnotes omitted). Many commentators still agree. See, e.g., Louis Kaplow & Steven Shavell, Fairness Versus Welfare, 114 Harv. L.Rev. 961, 1203 n.580 (2001); Laurens Walker & John Monahan, Sampling Liability, 85 Va. L. Rev. 329 (1999) (using statistical evidence is a reliable and practical method for mass trial); see also Robert G. Bone, Statistical Adjudication: Rights, Justice, and Utility in a World of Process Scarcity, 46 Vand. L.Rev. 561 (1993); Johnathan J. Koehler & Daniel Shaviro, Veridical Verdicts: Increasing Verdict Accuracy Through the Use Of Overtly Probabilistic Evidence and Methods, 75 Cornell L. Rev. 247, 248 (1990) (although courts should carefully determine the validity of probabilistic evidence, "overtly probabilistic evidence is no less probative of legally material facts than other types of evidence"); Michael J. Saks & Robert F. Kidd, Human Information Processing and Adjudication: Trial By Heuristics, 15 L. & Soc'y Rev. 123, 151

(1989-1990) ("Much of the testimony that is commonly thought of as particularistic only seems so. It is far more probabilistic than we normally allow jurors (or judges) to realize."); cf. The Evolving Role of Statistical Assessments as Evidence in the Courts 78- 79 (Report of the American Academy of Science Panel on Statistical Assessments as Evidence in the Courts) (Stephen E. Fienberg ed. 1989) (noting the contradiction between some courts' insistence on evidence that seems certain, and such "probabilistic" institutions as plea bargaining, in which decisions are made on the basis of "probable" outcome).

As discussed below, the Federal Rules of Civil Procedure and the Federal Rules of Evidence grant district judges authority to shape the nature and scope of admissible evidence for trial. Scientific evidence – like the sampling and statistical extrapolations admitted at trial – is well suited to mass tort actions. It is particularly appropriate in massive consumer fraud cases – so long as it passes the gate-keeping criteria described in the Federal Rules of Evidence and Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993).

Many states have provided special mechanisms for handling consumer fraud claims in the aggregate, recognizing that such low value claims cannot be economically tried individually. When, as in the case at bar, the plaintiff is an entity that has suffered its injury in the aggregate, statistical evidence is notably a more accurate and comprehensible form of evidence than would be the testimony of millions of smokers. See Blue Cross & Blue Shield of N.J., Inc, 133 F. Supp. 2d at 167 (explaining propriety of statistical extrapolation for entity suffering damages in aggregate); Blue Cross & Blue Shield of N.J., Inc, 36 F. Supp. 2d at 575 (E.D.N.Y. 1999) ("[t]he aggregation of millions of alleged injuries in the instant suit can be expected to yield more accurate results with respect to the causation issue since projections based upon a large statistical

base will be available, thus reducing the size of possible error"). Extrapolated claim yields in the aggregate will properly estimate total health care costs based upon individual claims. Laurens Walker & John Monahan, Sampling Liability, 85 Va. L. Rev. 329 (1999).

* * * *

**B. Appropriateness of Sampling and Survey Techniques**

Sampling and survey techniques are a well-accepted alternative for the trial judge facing crippling discovery and evidentiary costs. Manual for Complex Litigation, Third §§ 21.422 ("statistical sampling techniques may be used to measure whether the results of the discovery fairly represent what unrestricted discovery would have been expected to produce"), 21.493 ("The use of acceptable sampling techniques in lieu of discovery and presentation of voluminous data from the entire population, may produce substantial savings in time and expense."); David H. Kaye & David A. Freedom, Reference Guide On Statistics, supra.; Shari Seidman Diamond, Reference Guide on Survey Research, supra; Hans Zeisel & David Kaye, Statistics for Social Science and Public Policy, Empirical Methods in Law and Litigation (1997); see, also, e.g., Castaneda v. Partida, 430 U.S. 482 (1977) (using statistical data to prove discrimination in jury selection) Zippo Manufacturing Co. v. Roger Imports, 216 F. Supp. 670 (S.D.N.Y. 1963) (relying on sampling methodology); United States v. 449 Cases Containing Tomato Paste, 212 F.2d 567 (2d Cir. 1954) (approving inspector's testing of samples, rather than requiring the opening of all cases); Capaci v. Katz & Besthoff, Inc., 711 F.2d 647, 653-57 (5th Cir. 1983)(using census data in gender discrimination case); Exxon Corp. v. Texas Motor Exch., Inc.,

628 F.2d 500 (5th Cir. 1980) (using statistical sampling in trademark infringement suit); Stewart v. General Motors Corp., 542 F.2d 445 (7th Cir. 1976), cert. denied, 433 U.S. 919 (1977); In re Estate of Ferdinand Marcos, Human Rights Litigation, 910 F. Supp. 1460 (D.Haw. 1995) (using sampling to determine compensatory damages through extrapolating "exposure" element of liability), aff'd sub nom Hilao v. Estate of Marcos, 103 F.3d 767 (9th Cir. 1996); Ageloff v. Delta Airlines, Inc., 860 F.2d 379 (11th Cir. 1988) (using evidence of life-expectancy tables to determine damages); G.M. Brod & Co., Inc. v. U.S. Home Corp., 759 F.2d 1526, 1538-40 (11th Cir. 1985) (using expert testimony for profit projections based on industry norms); Newberg on Class Actions § 10.05 (when aggregate proof of damages is sought to be proved on behalf of a class, no special or unique rules of evidence are involved.). In some cases sampling techniques may prove the only practicable way to collect and present relevant data. See Harold Stores v. Dillard Dep't Stores, 82 F.3d 1533, 1544 (10th Cir. 1996); Manual for Complex Litigation, Third § 21.493 (2000).

Surveys and sampling techniques have been admitted in a large variety of actions to establish causation so long as they accord with Daubert and Rule 702 of the Federal Rules of Evidence. Fed. R. Evid. 702; Daubert, 509 U.S. 579 (1993); see also Reference Manual, supra; Castaneda v. Partida, 430 U.S. 482 (1977) (statistical data to prove discrimination in jury selection); Zippo Manufacturing Co. v. Rogers Imports, Inc., 216 F. Supp. at 670 (survey data in trademark infringement case). Properly developed survey evidence is admissible subject to arguments regarding its weight and probative value. Schering Corp. v. Pfizer, Inc., 189 F.3d 218, 224 (2d Cir. 1999) (citing cases); McNeilab Inc. v. American Home Prods. Corp., 848 F.2d 34, 38 (2d. Cir. 1988). The question of whether such surveys in combination with other evidence is

legally sufficient is to be left to the jury in accordance with the "general standards for judgment as a matter of law," once the court has determined the study is viable under Federal Rule of Evidence 702. In re Joint E.& S. District Asbestos Litig. v. United States Mineral Prods. Co., 52 F.3d 1124, 1132 (2d Cir.1995) (permitting statistical evidence to go to jury); see generally Michael O . Finklestein & Bruce Levin, Statistics for Lawyers vii (2d ed. 2001) (wide expansion of statistics used in trials over past decade).

American manufacturers now mass produce goods for consumption by millions using new chemical compounds and processes, creating the potential for mass injury. Modern adjudicatory tools must be adapted to allow the fair, efficient, effective and responsive resolution of the claims of these injured masses. See, e.g., In re DES Cases, 789 F. Supp. 548 (E.D.N.Y. 1992) (market share liability applied in suits for defective design of diethylstilbestrol (DES)); In re Joint E.& S District Asbestos Litig., 726 F. Supp. 426 (E.&S.D.N.Y. 1989) (computation of damages for Brooklyn Navy Yard asbestos victims); In re "Agent Orange" Product Liability Litig., 689 F. Supp. 1250 (E.D.N.Y. 1988) (distribution scheme for victims of agent orange); see also Manual for Complex Litigation, Third § 33.21-29 (2000) (mass torts); Kenneth R. Feinberg, Lawyering in Mass Torts, 97 Colum. L. Rev. 2177, 2177 ("mass torts [litigation] requires more than the traditional view of lawyering ...."); see generally Richard A. Nagareda, In the Aftermath of the Mass Tort Class Action, 85 Geo. L.J. 295 (1996).

State legislatures, courts, and commentators have recognized that aggregate tools are especially helpful in the context of consumer fraud, when the low value of specific claims or the litigation advantages of a well-financed defendant can discourage individuals from pressing their claims in court. See Fla. Stat. Ann. §409.910(9) (West 1998) (developing aggregate procedures

for recovery of medical expenses resulting from alleged tobacco fraud); Md. Code Ann., Health-Gen. I §15-120 (West 1998) (same); Vt. Stat. Ann. tit. 33, §1911(f)(5) (same); see also Group Health Plan v. Philip Morris Inc., 621 N.W.2d. at 15 ("To impose a requirement of proof of individual reliance in the guise of causation would reinstate the strict common law reliance standard that we have concluded the legislature meant to lower for these statutory actions."); Walker v. Nat'l. Recovery Inc., 200 F.3d 500 (7th Cir. 1999); Agency for Health Care Admin. v. Associated Indus. of Florida, 678 So. 2d 1239 (Fla. 1996) (aggregation of fraud claims to recover medical expenses conformed to due process), cert. denied, 520 U.S. 1115 (1997); Samuel Issacharoff, Group Litigation of Consumer Claims: Lessons From the U.S. Experience, 34 Tex. Int'l L.J. 135 (1999) (limited resources and incentives for consumers acting individually); Laurens Walker & John Monahan, Sampling Liability, 85 Va. L. Rev. 329 (1999).

The Defendants cite City of Birmingham v. American Tobacco Co., 10 F. Supp. 2d 1257 (N.D. Ala. 1998), for the proposition that the plaintiff must provide the factual circumstances for each smoker on whose behalf it now sues. That case does not address the issue of statistical sampling. The court held – at the pleading stage – that the city could not recover for all employees under its state statute, only for some. The denial of summary judgment as to some of the city's claims in that case did not disallow the use aggregate proof to try the remaining issues.

In the bulk of the third-party tobacco cases that contemplated discovery and trial, courts properly limited the level of individual proof available. Northwest Laborers Employers Health and Sec. Trust Fund v. Philip Morris Inc., No. C97-849 (W.D. Wash. Mar. 18, 1999) (Order On Defendants' Motion to Compel Discovery Re Individual Fund Participants) ("[d]efendants' motion to compel discovery regarding individual fund participants would impose an enormous

burden on all parties and effectively would bring the litigation to a halt"); West Virginia-Ohio Valley Area IBEW Welfare Fund v. American Tobacco Co., No. 97-0978 (S.D.W.Va., May, 1999) (rejecting defendants' motion to depose every member of union trust fund); In re Mike Moore, Attorney General ex rel. State of Mississippi Tobacco Litigation, No. 94-1429 (Miss. Apr. 18, 1996) (Order on Defedant's Motion to Compel Initial Discovery Limited Number of Medicaid Recipients on Health Care Provided by the State of Mississippi) (permitting disclosure of identity and information of limited number of Medicaid recepients); State v. Philip Morris Inc, No. Cl.-94-8565 (Minn. Dec. 21, 1995) (Order to Compel Limited Depositions of Medicaid Recipients) (limiting depositions for defendants); see Sampling Liability, 85 Va. L. Rev. 329 (1999) (approving the use of sampling in pre-trial and at trial in Tobacco litigation). Such limits on individualized proof is used in other cases as well. See Howard Ross Cabot & Alan A. Matheson Jr., The Use of Statistics to Wrest Control Over the Trial of Mass Damage Claims, 7 Inside Litig. at 16 (Mar. 1993) (dealing with approximately 17,000 property damage subrogation lawsuits arising from a chemical explosion, proposed trial plan would use stratified sampling of the insurance claims at issue).

Against this backdrop, the use of statistical evidence in the instant case violates neither the Constitutional guarantee of due process nor the Constitutional right to a jury trial. See In re Chevron U.S.A., Inc., 109 F.3d at 1020 ("[t]he applicability of inferential statistics have long been recognized by courts"; collecting cases); Laurens Walker & John Monahan, Sampling Damages, 83 Iowa L. Rev. 545 (1998) ("[A] complete solution of the numbers problem in mass torts can only be achieved by . . . randomly sampling damages without apology."); cf. In re Matter of Rhone-Poulenc Rorer Inc., 51 F.3d 1293, 1304 (7th Cir. 1995) (noting with approval

idea of a "sample of trials"); Consorti v. Armstrong World Industries, 72 F.3d 1003 (2d. Cir. 1995) ("consolidation permits the federal court to furnish trials in hundreds, even thousands of cases it might otherwise not reach for many years. If carefully and properly administered . . . consolidation is also capable of producing, with efficiency and greatly reduced expense for all parties, a fairer, more rational and evenhanded delivery of justice."), rev'd on other grounds 518 U.S. 1031 (1996).

The use of aggregate proof at trial was consistent with due process and jury trial rights. It was legally sufficient to support the plaintiff's verdict under New York General Business Law section 349.

*1. Due Process*

Defendants claim that due process required individual adjudication of millions of smokers' claims implicated in the action, and discovery from millions more – family, friends, coworkers, and doctors. The reasons for rejecting this approach were set out at length in a memorandum denying summary judgment. See Blue Cross & Blue Shield of N.J., Inc., 113 F. Supp. 2d at 372.

At summary judgment, the court balanced the due process interests of allowing more individualized discovery and more individualized proof at trial. Id. It was determined that the interests of the private parties, the accuracy of the procedures, and an efficient use of court resources counseled in favor of using statistical models along with individual deposition lay testimony, expert testimony, and documentary evidence. Id. (citing Connecticut v. Doehr, 501 U.S. 1, 11 (1991)); see, also e.g., Hilao, 103 F.3d at 786 (balancing due process interests);

Michael J. Saks & Peter David Blanck, Justice Improved, 44 . L.Rev. at 826-32 (1992) (statistical sampling comports with due process in mass aggregation cases). That reasoning is worth recounting here.

The court first noted that consideration of the private interests involved favored the utilization of statistics:

> Tobacco admittedly has an interest in not paying for damages in excess of what its alleged misconduct may have caused; that interest would be furthered by Tobacco's confronting (before the jury) each of the hundreds of thousands of Empire's insured who suffered smoking-related illnesses about their reliance on Tobacco's misstatements and omissions, and about their discovery of their injuries (so as to precisely determine in each instance when the statute of limitations started to run).
>
> Practical considerations temper the weight of Tobacco's interest, however. If such a process were undertaken, it would have to continue beyond all lives in being. Assuming Tobacco was willing to expend the resources and monies necessary both in discovery and at trial to mount such an undertaking, the litigation costs in doing so would far exceed any monies saved by avoiding erroneous payments given Empire's four year limitation on recovery. . .
>
> The interest of Empire in avoiding the additional litigation costs that would arise if Tobacco was permitted to confront each Plan member at trial is enormous, particularly since Empire is presently a nonprofit entity with limited annual income appropriately dedicated to covering Plan members' health care costs. The necessary additional litigation costs Empire would have to bear would consume much of any recovery from Tobacco, making continued pursuit of the litigation fruitless. . .
>
> The interests of the injured smoking Plan members must be considered. Requiring individual proof as to each claim would unnecessarily intrude on the lives of hundreds of thousands of people. Examining each of the grains of sand on the beach is too burdensome.

Blue Cross & Blue Shield of N.J., 113 F. Supp. 2d at 372-73.

The court ruled the second element also supported allowing statistical proof subject to Daubert challenges:

> The parties have been permitted to take depositions and conduct discovery of a sufficient sample of Empire's Plan members who suffered smoking-related injuries to yield statistically significant conclusions. It is plaintiff's well supported contention that this will ensure that the ultimate damages projected by its statistical model will be within 10 percent (either higher or lower) of the actual damage caused by Tobacco's alleged misconduct.
>
> In addition to statistical evidence, parties will be permitted to present to the jury relevant lay testimony, expert testimony, and documentary evidence – subject to the constraints of the Federal Rules of Evidence and the practical considerations of trial management.

Id. at 374-75.

Finally, considering the court resources involved, it found that the third prong strongly weighed in favor of such a proceeding:

> A consolidated trial with full presentation of the individual facts of each of Empire's subrogated claims relating to smoking-related illnesses before a single jury would be unmanageable. Similarly, hundreds-of-thousands of separate trials brought by Empire to adjudicate individually the subrogation claim arising from each Plan member who has suffered a smoking- related illness would prove unnecessarily burdensome; it would "clog the docket of the district court for years."

Id. at 375-77 (citations omitted).

Extensive discussions among the parties and the court assessed how to best present the combination of aggregate and individualized evidence to the jury. The parties were ordered to confer with statisticians and survey research experts concerning the kinds of samples that would yield statistically valid inferences about whether smokers subscribing to Empire were in fact deceived by statements made by the Tobacco industry. Defendants' experts originally proposed a randomized sample of 1,600 subscribers. The parties resubmitted extensive briefing and expert affidavits measuring the appropriate sample size after some factors were left for individual discovery. Defendants' expert revised estimate called for 624 subscribers in person with

standardized questions and without witness preparation. Plaintiff's expert proposed a sample of 156 depositions taken telephonically, with alternating question and answers, and with witness preparation.

A sample of 156 deponents was determined to be consistent with statistical norms. Depositions were to be taken in person for three hours, with standardized questions, and without witness preparation, to preserve the sanctity of the sample. Deposition responses were then coded blindly in accordance with scientific norms and results were extrapolated. Relevant portions of depositions were played to the jury. The deficiencies in the study and of deposition testimony were throughly developed on cross-examination and in the defendants' case-in-chief.

Other models were used. One expert presented models quantifying that portion of smoking-related costs attributable to defendants. Applying economic models, he created a "counter factual" world to calculate a "conduct attributable fraction" for each year, representing the portion of medical costs due to smoking related illnesses resulting from defendants' fraud. The smoking attributable costs calculated by other experts were also utilized to determine damages on a per annum basis. Several thorough and prolonged hearings (in this case and in related actions) established that these statistical models satisfied Daubert and could be used in combination with individualized evidence to satisfy each element of the plaintiff's action. See, e.g., Blue Cross & Blue Shield of N.J., Inc v. Philip Morris Inc., et al., No. 98 CV 3287, 2000 WL 1880283 (E.D.N.Y. Dec. 27, 2000); Blue Cross & Blue Shield of N.J., Inc v. Philip Morris Inc., No. 98 CV 3287, 2000 WL 1805359 (E.D.N.Y. Dec. 11, 2000); Blue Cross & Blue Shield of N.J., Inc v. Philip Morris Inc., No. 98 CV 3287, 2000 WL 1738338 (E.D.N.Y. Nov. 1, 2000); Falise v. The Am. Tobacco Co., No. No. 99 CV 7392, 2000 WL 1804602 (E.D.N.Y. Nov. 30,

2000); Falise v. The Am. Tobacco Co., 107 F. Supp. 2d 200 (E.D.N.Y. July 28, 2000).

Excellent graphs, charts, schematics, as well as underlying data, were made available to the jury, which was fully attentive and appeared to understand its significance. All of the experts (both plaintiff's and defendants') were authorities in their fields. They had published extensively in peer reviewed journals. Each expert had prepared full reports with data and analysis supplied to the other side. Each was evaluated carefully for compliance with Daubert and Rule 702 requirements. The presentation of their evidence and cross-examination was thorough and comprehensive.

At trial, this statistical evidence was presented along with other studies commissioned by government and non-government agencies. Individual deposition and other testimony was also used. Relevant portions of videotaped deposition testimony of individual subscribers was played to the jury on a theater size screen by both sides. All evidence was subject to thorough cross examination, criticism by defense experts, and two full days of persuasive closing argument before the jury.

After three years of coordinated pre-trial discovery, months of negotiations between the parties and the Magistrate Judge on the fair use of aggregate procedures, two postponed trial dates to revise and permit more discovery, and two separate vigorously contested trials consuming almost five months of trial time – exposing every expert, lay witness, and document to the most detailed scrutiny – adequate procedures have afforded the parties all necessary due process.

### C. Seventh Amendment Jury Trial Right

To accept defendants' second contention – that the use of aggregated proof in plaintiff's direct and subrogation claims violates the Seventh Amendment – would require concluding that the Constitution establishes fixed limitations on the methods of proof a particular party may offer. Welding such a horse and buggy interpretation into trials in the computer-guided-rocket age seems somewhat far-fetched. Courts cannot ignore and deny themselves what the rest of the world relies upon in fact-finding.

The Seventh Amendment of the Constitution protects the right to a jury trial. It reads:

> In suits at common law, where the value in controversy shall exceed twenty Dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law.

U.S. Const. amend. VII.

The Amendment "was designed to preserve the basic institution of a jury trial in only its most fundamental elements, not the great mass of procedural forms and details, varying even at the time of adoption so widely among common-law jurisdictions." See Galloway v. United States, 319 U.S. 372, 392 (1943); Ex parte Peterson, 253 U.S. 300, 309-12 (1920).

Over the past two centuries, the primary concern in interpreting the Seventh Amendment has been to preserve the jury's role as a finder of fact, without Constitutionally freezing evidentiary and trial procedures. Justice Brandeis expounded on the necessity of adapting the jury trial right to contemporary realities in Ex parte Peterson:

> [The Seventh Amendment] does not prohibit the introduction of new methods for determining what facts are actually in issue, nor does it prohibit the introduction of new rules of evidence. . . . New devices may be used to adapt the ancient institution to present needs and to make of it an efficient instrument in the administration of justice. Indeed, such changes are essential to the preservation of the right. The limitation imposed by the Amendment is merely that enjoyment of

> the right of trial by jury be not obstructed, and that the ultimate determination of issues of fact by the jury not be interfered with.

Id. at 309-10 (citations omitted); see also Gasperini v. Center for Humanities, Inc., 518 U.S. 415, 436 n.20 (1996) ("If the meaning of the Seventh Amendment were fixed at 1791, our civil juries would remain, as they unquestionably were at common law, twelve good men and true.") (internal citations and quotations omitted); Margaret L. Moses, What The Jury Must Hear: The Supreme Court's Evolving Seventh Amendment Jurisprudence, 68 Geo. Wash. L. Rev. 183, 199-208 (2000) (citing cases); Austin Wakeman Scott, The Reform of Civil Procedure, 31 Harv. L. Rev. 669, 671-78 (1918) (describing historical evolution of jury trials).

The historical record demonstrates that the Framer's main objective in drafting the Seventh Amendment was to limit the ability of an appellate court to overturn a civil jury's finding of fact. There is no indication they intended to constrain the trial judge's substantial discretion to employ appropriate procedural mechanisms in managing a trial so as to arrive at the truth – or as near to the truth as time and humankind's limitations allow. See Simon v. Philip Morris Inc., 200 F.R.D. 21, 33 (E.D.N.Y. 2001).

Chief Justice Rehnquist has observed that whatever procedural changes are made, they cannot be allowed to invade the "jury's province" – its fact-finding power. Parklane Hosiery Co. v. Shore, 439 U.S. 322, 345-46 (1979) (Rehnquist, J., dissenting). Yet, the jury has unquestionably had much of its fact-finding authority attenuated indirectly through various "procedural devices." Fed. R. Evid. 104(a) (judicial discretion to bar evidence that fails conditional relevancy); Fed. R. Evid. 403 (judicial discretion to bar cumulative, irrelevant, prejudicial information); Moses, What The Jury Must Hear, 68 Geo. Wash. L. Rev. at 205;

Edward J. Imwinkelreid, Trial Judges – Gatekeepers or Usurpers? Can the Trial Judge Critically Assess the Admissibility of Expert Testimony Without Invading the Jury's Province to Evaluate The Credibility or the Weight fo the Testimony?, 84 Marq. L. Rev. 1 (2000) (Daubert may limit jury's fact finding role); Lisa S. Meyer, Taking the Complexity out of Complex Litigation: Preserving the Constitutional Right to a Civil Jury Trial, Val. U. L. Rev. 337 (1993) (juries replaced by bench trials in complex cases). The increasing use of bench trials, Daubert hearings, summary judgment, and directed verdict – as authorized by appellate courts – to limit fact finding and set aside verdicts poses more of a threat to the continued viability of the Seventh Amendment jury trial, than the development of new fair procedures that accord with modern statistical and informational gathering techniques for making factual determinations.

Courts must be especially careful not to hobble the jury system by excluding potential evidence. Prematurely cutting off the flow of evidence to the jury favors defendants, leading not only to a violation of the Constitution, but a tilting of the scales of justice. See, e.g., John Caher, Court Seen As Slow In Expanding Tort Claims, Criminal Defendant's Civil Rights, N.Y. L.J., Jul. 24, 2001, at 1 (describing trend against private litigants in decisions by New York Court of Appeals); Margaret A. Berger, Upsetting the Balance Between Adverse Interests: Expert Testimony in Toxic Tort Litigation, 64 L. & Contemp. Probs. 289, 325 (2001) (discussing Daubert; "The Supreme Court's trilogy on expert proof has empowered federal judges to adjust the balance in toxic tort cases to favor defendants . . . by . . . converting rulings on the admissibility of evidence into rulings on the sufficiency of evidence. The result is that the critical issue of causation in toxic tort is being decided by federal judges, not . . . jurors, and in pretrial proceedings, rather than at trial."); Kevin M. Clermont & Theodore Eisenberg, Appeal

from Jury or Judge Trial: Defendants' Advantage, 3 Am. L. & Econ. Rev. 125, 128 (2001) (appellate courts are more inclined to overturn plaintiff's verdicts because of perceived pro-plaintiff bias by juries); Kevin M. Clermont & Theodore Eisenberg, Anti-Plaintiff Bias in the Federal Appellate Courts, 84 Judicature 128 (2000) (same); Lucinda M. Finley, Guarding the Gate To The Courthouse: How Trial Judges are Using Their Evidentiary Screening Role to Remake Tort Causation Rules, 49 DePaul L. Rev. 335, 341-42 (1999) (evidentiary gate-keeping "substantially increases plaintiffs' burden of proving individual causation, and it also furthers the trend in toxic tort cases to shift the allocation of power away from juries to judges"); Samuel Issacharoff & George Loewenstein, Second Thoughts About Summary Judgment, 100 Yale L.J. 73, 75 (1990) ("[L]iberalized summary judgment inhibits the filing of otherwise meritorious suits and results in a wealth transfer from plaintiffs as a class to defendants as a class"); Jeffrey W. Stempel, A Distorted Mirror: The Supreme Court's Shimmering View of Summary Judgment, Directed Verdict, and the Adjudication Process, 49 Ohio St. L.J. 95, 99 (1988) (describing Supreme Court's 1986 trilogy of summary judgment cases as "faulty and ill-conceived ... in light of purposes for which civil litigation system exists"). Such a trend favoring defendants by limiting juries is also inconsistent with the Federal Rules of Evidence that were designed to enhance the search for truth by making more data available to the trier. Fortunately, the court of appeals for the Second Circuit generally has resisted this tendency towards obfuscation of fact finding by juries. See, e.g., Robinson v. Metro N. Commuter R.R. Co., 2001 WL 1191092, at *13 n.13 (2d Cir. Oct. 9, 2001) (approving jury bifurcation); In re Joint E.& S. District Asbestos Litig. v. United States Mineral Prods Co., 52 F.3d 1124, 1132 (2d Cir. 1995) (permitting statistical evidence to go to jury).

Many authorities demonstrate that jury fact-finding is enhanced by the use of aggregating techniques. See Manual for Complex Litigation, Third § 22.3, at 136 ("Although the presentation of the evidence at trial is normally controlled by the strategies and tactics of counsel, in complex litigation other considerations also require attention, primarily jury comprehension and the length of the trial. These are not unrelated concepts, since a shorter trial promotes jury comprehension, and effective presentation saves times."); Joe S. Cecil, Valerie P. Hans & Elizabeth C. Wiggins, Citizen Comprehension of Difficult Issues: Lessons from Civil Jury Trials, 40 Am. U. L. Rev. 727, 750-64 (1991) ("[T]he overall picture of the jury [in complex cases] that emerges from the available data indicates that juries are capable of deciding even very complex cases, especially if procedures to enhance jury competence are used."). The essential functions of the Seventh Amendment are enhanced, not limited, by procedures which streamline and focus jury fact-finding. The jurors in this district are generally educated and aware of current technology; they would justly feel insulted by being denied modern fact finding techniques. See Part II, supra.

Relying on Fifth Circuit decisions, defendants claim that the use of aggregate statistics violated their constitutional right to a jury trial. This view is misplaced. The argument was addressed and rejected in the context of plaintiff's subrogated RICO claims.

> Accepting for arguments sake the conclusions reached by the court of appeals for the Fifth Circuit in Cimino and Fibreboard – that the right to a jury is violated by the use of statistics to extrapolate findings of liability from a group of representative plaintiffs to all plaintiffs (in place of individual jury verdicts as to each plaintiff) – that question is not presented here. The present case does not arise in the posture of Cimino and Fibreboard. It involves non-class claims of a single plaintiff against five defendants. Empire is advancing its own subrogated interests; no representative group of plaintiffs have been selected to litigate from whose verdicts liability determinations will be extrapolated to the remaining

plaintiffs . . . .

Blue Cross & Blue Shield of N.J., Inc, 113 F. Supp. 2d at 375 (citations omitted).

The present case involves a single plaintiff requiring an aggregate determination of economic losses resulting from defendants' actions. The Fifth Circuit has generally approved aggregate statistical techniques to calculate a lump sum damage figures in mass tort cases, despite rejecting their use in class actions where damages needs to be apportioned among individuals. Compare In re Fibreboard Corp., 893 F.2d 706, 710 (5th Cir. 1990) ("there will inevitably be individual class members whose recovery will be greater or lesser than it would have been if tried alone") with Watson v. Shell Oil Co., 979 F.2d 1014, 1018 (5th Cir. 1992) (aggregation proper to determine total compensatory damages as a means to determine punitive damages). The result in Fibreboard in part was premised on the fact that individuals in a plaintiff class may be subjected to the risk of underpayment or overpayment because of sampling. See Hilao v. Estate of Marcos, 103 F.3d 767, 787-88 (Rymer, J., dissenting) (9th Cir. 1996); Walker & Monahan, Sampling Liability, 85 Va. L. Rev. at 345. Whatever the merit of that conclusion, that threat is not posed when a single business sues for aggregate harm it has suffered.

Defendants received their fair jury trial. The problems posed by "bellwether trials" or "extrapolated verdicts" are not before this court. Ample evidence was introduced at trial on every element of every claim before a single jury. Defendants were not prevented from introducing individual forms of evidence. The videotaped testimony of 156 individual subscribers of plaintiff and others was available to and introduced by both parties. All of this information was subject to skilled cross examination lasting several weeks, and supported by defendants' own statistical models, experts, counter designations and lay testimony in their case-

in-chief.

Excluding information on the ground that jurors are too ignorant to evaluate it properly may have been appropriate in England at a time when a rigid class society created a wide gap between royal judges and commoner juries, but it is inconsistent "with the realities of our modern American informed citizens and the responsibility of independent thought in a working society." United States v. Shonubi, 895 F. Supp. 460, 493 (E.D.N.Y. 1995), rev'd on other grounds 103 F.3d 1085 (2d Cir. 1997); see also James Bradley Thayer, Select Cases on Evidence at the Common Law 1 (1892) ("'Reasoning, the rational method of settling disputed questions, is the modern substitute for certain formal and mechanical tests which flourished among our ancestors for centuries, and in the midst of which the trial by jury emerged.'") (quoting Thayer, "Law and Fact" in Jury Trials, 4 Harv. L. Rev. 147, 157 (1890)).

[178 F. Supp. 2d at 266-271]

**IX. Evidence Sufficient To Support Low Tar Fraud**

Defendants argue that plaintiff did not introduce legally sufficient evidence to show that consumers were misled about the dangers of "light," low tar and filtered cigarettes. They also claim that plaintiff did not show what damages were connected with this kind of fraud. Both of these arguments fail.

Evidence of defendants' "low tar fraud" is only part of the misleading conduct regarding the health risks of cigarettes that supports violations of New York General Business Law section 349. It is not a separate legal claim. The attempt to inhibit marketing of a "safer" cigarette – amply supported by the trial record – is intertwined with and a part of a more general design to

deceive consumers about the effects of smoking. Blue Cross & Blue Shield of N.J., Inc. v. Philip Morris Inc, 2001 WL 811930, at *1 (E.D.N.Y. May 22, 2001).

Defendants' attack on this evidence bears on its weight – a jury question – not its legal sufficiency. The evidence demonstrated that defendants misrepresented material facts regarding a variety of subjects relating to the safety of their products – causation, addiction, the full scope of the risk, the nature of the constituents of tobacco, the quality of their own knowledge of tobacco products, and efforts to eliminate hazards. Evidence of a "low tar fraud" was also supported by the trial record. This evidence, as a whole, was properly considered by the jury.

Defendants' second contention – that plaintiff failed to properly link its damage estimates to a "low tar fraud" – is also without basis. Evidence may show the extent of the damages "as a matter of just and reasonable inference, although the result be only approximate." Story Parchment Co. v. Paterson Parchment Paper Co., 282 U.S. 555, 562-63 (1931); United States Football League v. National Football League, 842 F.2d 1335, 1379 (2d Cir. 1988). The jury was provided with expert testimony to permit a reasonable and principled basis for calculating and apportioning damages. Hearings established that this testimony satisfied Daubert and Rule 702 of the Federal Rules Of Evidence. See Parts IV C 2 & VII supra.

### A. Evidence Admissible to Support General Deception

The jury could reasonably conclude that defendants misled the public about the actual benefits of light, low tar and filtered cigarettes as actually smoked. The trial record showed that defendants knew that low tar cigarettes did not deliver any significant health benefits. See generally Part IV B & C supra. Evidence also supported the conclusion that defendants were

highly informed and deliberately exploited this deceptive phenomenon. Id. The evidence demonstrated that defendants promoted low-tar cigarettes while knowing there was no significant health benefits or that any benefit was far less then the defendants led the public to believe. Id. The evidence also proved that these practices were designed to intercept quitters. According to a 1977 BATCo memorandum:

> All work in this area should be directed towards providing consumer reassurance about cigarettes and the smoking habit. This can be provided in different ways, for example, by claiming low deliveries, by the perception of low deliveries and by the perception of mildness. Furthermore advertising for low delivery or traditional brands should be constructed in ways so as not to provoke anxiety about health but to alleviate it and enable the smoker to feel assured about the habit and confident in maintaining it over time.

PTX 9666; see also e.g., PTX 1042 (1978 Brown & Williamson Memorandum: "Perhaps answers to another question 'How do people stop smoking?' could lend insight into the creation of new products. Having answers to this latter question, we might then design products to 'intercept' people who are trying to give up smoking."). Evidence and expert testimony showed that these messages appeared in public communications. Plaintiff's subscribers testified that they purchased and smoked more low tar cigarettes rather than quit in reliance upon these communications. See Part IV C 2 B. The evidence was properly admitted for the jury to consider as part of a broader deception alleged against the defendants regarding the safety of their cigarettes.

### B. Evidence Admissible to Support Damages

Defendants also argue that Empire did not introduce evidence sufficient to connect their damages to the alleged fraud relating to low tar cigarettes. They argue the damage model relied

on by the jury could not capture the damages flowing from any misrepresentations about the safety of low tar cigarettes. They claim that this model was based only on the premise that low tar cigarettes were safer.

These arguments are misplaced. Damage models were subject to Daubert hearings and found admissible. Evidence demonstrated that models were only in part premised on defendants' decades long practice not to produce safer cigarettes for fear that, by addressing safety, companies would alert smokers to the gravity of the health risks and thereby reduce total industry sales. The jury could properly decide that the low tar issue was relevant to such a model.

The damage model was sufficiently flexible for the jury to account for or to discount these damages. Models isolated damages based on defendants' deceptive practices from damages that resulted from the failure to produce real low tar yielding cigarettes as smoked by real people. These models were also subject to lengthy cross examination and critique by defense experts. The final verdict was conservative and demonstrated that the jurors understood these models, rejected some or all in whole or in part, and made adjustments based on sound economic principles.

## X. Evidence of Post-1980 Deceptive Acts and Practices

Defendants' argument that plaintiff did not introduce evidence of defendants' misconduct after 1980 is inconsistent with the trial record. Plaintiff introduced many examples of defendants' misrepresentations made after 1980; each of them reached nationwide audiences – including those in New York – through massive media efforts. Actions of defendants prior to 1980 was also introduced as evidence of continuing activities after 1980. Separate models

confined damages to post-1980 conduct to specifically support plaintiff's section 349 claim.

### A. Law

In private suits, the New York Consumer Protection Act applies prospectively to misconduct that occurred after 1980. Blue Cross & Blue Shield of N.J., Inc, 133 F. Supp. at 166-67. In theory, plaintiff had the right not to be injured even before it could sue on its own behalf for those injuries. The rationale for limiting retroactive application of such statutes is to avoid affecting a defendant's antecedent obligations. They were obligated not to violate the Act long before 1980. New York Statutes Law § 53 (McKinney 1994) (commentary). Practically speaking, however, "[s]o long as the statute was enforceable solely by government it was largely precatory." Falise v. Am. Tobacco Co., 2000 WL 1880303, No. CV 97-7640 (E.D.N.Y. Dec. 27, 2000); see, e.g., Buccino v. Continental Assurance Co., 578 F. Supp. 1518 (S.D.N.Y. 1983); cf. Hughes Aircraft Co. v. United States, 520 U.S. 939, 950 (1997) (refusing to apply statutory amendment expanding private party standing for qui tam suits retroactively because it "essentially create[d] a new cause of action"); Landgraf v. USI Film Prods., 511 U.S. 244, 268 (1994); see also Howard M. Erichson, Coattail Class Actions: Reflections On Microsoft, Tobacco, and the Mixing of Public and Private Lawyering in Mass Litigation, 34 U.C. Davis L. Rev. 1, 41 (2000) (describing the effectiveness of combining public and private actions in enhancing deterrence). Only when private persons could bring suits and the powerful enforcement agency of the plaintiff bar was brought to bear did the Act provide teeth. Defendants were thus only responsible under section 349 for post-1980 misconduct.

* * * *

The jury was presented with more than sufficient examples of post-1980 misconduct to support its verdict. Examples of such evidence include statements widely disseminated through television, conferences, and letter campaigns:

- On October 20, 1983, a representative for the defendants referring to smoking causation, told a national audience on the ABC program "20/20": "The case is still open. The jury has not come in." PTX 1444.

- The next year, a representative of the defendants published a pamphlet, entitled, "The Cigarette Controversy: Why More Research Is Needed," which stated: There is a cigarette controversy. The causal theory – that cigarette smoking causes or is the cause of the various diseases with which it is reported to be related statistically – is just that, a theory." PTX 1444.

- On May 16, 1988, a representative on behalf of the defendants published a press release titled, "Claims That Cigarettes Are Addictive Contradict Common Sense," which stated: Smoking is a truly personal choice which can be stopped if and when a person decides to do so." PTX 1645.

- In a January 11, 1989 interview on the ABC program, "Good Morning America," a representative speaking on behalf of the defendants stated the following on behalf of the tobacco industry: "[T]he causative relationship has not been established . . . I can't allow the claim that smoking is addictive to go unchallenged. . . . It's a matter of willpower." PTX 9508.

- Walker Merryman, a representative on behalf of the defendants wrote the following in an article published on April 27, 1989, in the Washington Times: "The difference between cigarette smoking and true addictions to hard drugs is stark and compelling." PTX 9791.

- In 1992, Philip Morris published a pamphlet entitled, "Tobacco Issues and Answers," that stated: Those who term smoking an addiction do so for ideological, not scientific reasons." PTX 5786.

- On April 15, 1994, the day after its and other CEOs from the industry testified before Congress that smoking was not addictive, Philip Morris placed an advertisement in the New York Times that stated: "Fact: Philip Morris does not believe smoking is addictive." PTX 1814.

- In 1996, the parent company of Brown and Williamson stated in the Wall Street Journal: "We haven't concealed, we do not conceal, and we will never conceal.

> We have no internal research which proves that smoking causes lung cancer or other diseases, or indeed, that smoking is addictive." PTX 1862.

Letters were sent after 1980 to consumers all across the country, including many New York residents. Articles written in the 1970s denying causal connection between smoking and cancer were re-circulated in post-1980 mailings. They included the following statements:

- "Despite all the research going on, medical science has not found any conclusive evidence that any element in cigarettes, tobacco, or tobacco smoke causes human disease."

- "We firmly believe that cigarettes have been unfairly blamed as a cause of human disease."

- "With the numerous attacks being made on smoking, it is indeed refreshing to read a letter such as yours and to be reassured that not everyone has accepted without question the adverse publicity the tobacco industry has received. . . Throughout the years, the public has received a largely one-sided view of the questions that have arisen about tobacco . . . Through a series of messages appearing in national newspapers and magazines, we are attempting to provide our side of such public issues as . . . passive smoking, smoking courtesy and smoking and health."

- "[I]n the absence of the identification of the processes or mechanisms involved in cancer causation, together with experimental animal evidence which raises questions regarding causation, we believe that scientific proof that cigarette smoking causes chronic diseases in humans is still lacking."

PTX 9853 (including over 150 letters).

Post-1980 communications reached elementary school teachers and principals. A 1990 form letter responding to inquiries from fifth grade students at a New York elementary school reads in relevant part:

> "[T]he simple and unfortunate fact is that scientists do not know the cause or causes of the chronic diseases reported to be associated with smoking. The answers to many unanswered smoking and health questions – and the fundamental causes of the diseases often statistically associated with smoking – we believe can only be determined through much more scientific research."

PTX 1688.

Evidence confirmed that these communications were part of a general policy for the 1980s and beyond. See, e.g., PTX 1042 (Summarizing plans in conference titled "Marketing in the 80's": "Overall marketing policy will be such that we maintain faith and confidence in the smoking habit, whether brand choice is traditional or not in particular markets. This means that B.A.T. will not remain on the defensive, by simply reacting to alleged 'health' hazards and related competitive challenges: instead we shall actively seek out all worthwhile prospects for brand and product reassurance in marketing throughout the world.").

Sufficient evidence of post-1980 misconduct was introduced to support the jury's verdict.

Defendants' alternative argument that plaintiff did not prove that an individual subscriber specifically relied on specific post-1980 statements ignores this court's prior rulings. As it held in rejecting defendants' suggested individual reliance requirement in Falise v. American Tobacco Co.:

> Where, however, the fraudulent scheme is targeted broadly at a large proportion of the American public the requisite showing of reliance is less demanding. Such sophisticated, broad-based fraudulent schemes by their very nature are likely to be designed to distort the entire body of public knowledge rather than to individually misled millions of people. From the perspective of the fraudulent actors, clear efficiencies are gained by co-opting the media and other outlets of information as unwitting tools for the pervasive scheme.

94 F. Supp. 2d 316, 335 (E.D.N.Y. 2000). This analysis applies even more forcefully in the context of a section 349 claim – which does not require a showing of specific reliance. See Parts V and VII B 3, supra; Stutman v. Chem. Bank, 95 N.Y.2d at 29 n.2 (2000); Group Health Plan v. Philip Morris Inc., 621 N.W.2d at 15 ("[W]e are confident that the legislature would not have authorized private damages actions such as this, where the alleged misrepresentations are

claimed to have affected a large number of consumers, while retaining a strict burden of proof that depends on evidence of individual consumer reliance"); Issacharoff, The Vexing Problem of Reliance In Consumer Class Actions, 74 Tul. L. Rev. at 1633.

The jury could have concluded that plaintiff proved at trial a massive scheme to distort the body of public knowledge that continued long after 1980. The law cannot accept defendants' attempt to void liability because their deceptive scheme was so pervasive and far-reaching that it needed to rely on national media to reach its intended audience and because it totally perverted the flow of information to the public. Proof that each individual subscriber was personally addressed by the defendant was not necessary. The evidence was sufficient to support the conclusion that this fraud caused damage to plaintiff recoverable under section 349.

[178 F. Supp. 2d at 273-275]

**XII. Sufficiency of Damages**

Defendants claim that sufficient evidence did not demonstrate a connection between the defendants' conduct and the plaintiff's damages. Defendants' first claim – that plaintiff covered its smoking related costs by charging its customers premiums – was rejected in an earlier memorandum. See Blue Cross & Blue Shield of N.J., Inc v. Philip Morris Inc., 138 F. Supp. 2d 357 (E.D.N.Y. 2001). Defendants additionally claim that Dr. Harris's statistical model did not reflect the damages alleged. This claim is unfounded.

**A. Law**

A plaintiff's proof of amount of damages must provide the jury with a reasonable basis

upon which to estimate the amount of its losses caused by defendants' delicts. Certainty in damage estimates is not required. Blue Cross & Blue Shield of N.J., Inc., 36 F. Supp. 2d at 585 (E.D.N.Y. 1999) ("In any event, once the other elements of a cause of action have been proven, considerable leeway and flexibility in establishing damages is permitted."); see also Bigelow. RKO Radio Pictures, 327 U.S. 251, 265 (1946) ("the wrongdoers may not object to the plaintiff's reasonable estimate of the cause of injury and of its amount, supported by the evidence, because not based on more accurate data which the wrongdoer's misconduct has rendered unavailable"). Models must be sufficiently flexible for jurors to assess damages fairly and segregate between "damages attributable to lawful conduct and an unlawful scheme." See Farley Transp. Co. v. Santa Fe Trail Transp. Co., 786 F.2d 1342, 1352 (9th Cir. 1985) (court reversed jury award because of plaintiff's "utter failure to make any segregation between damages attributable to lawful competition and that attributable to [defendant's] unlawful scheme"). As the court of appeals has recently emphasized, the jury is free to believe some testimony and to not believe, or not rely upon other testimony of the same or other witnesses. See [Girden] v. Sandals Int'l,, 262 F.3d at [204].

**B. Application**

Models segregated year-by-year damages flowing from an information effect and damages flowing from an innovation effect. Given the amount of damages the jury awarded, the jury might have entirely disregarded damages flowing from the innovation effect relied on by Dr. Harris.

The jury was properly instructed on the law of section 349. They were told in relevant

part:

> In order to prove its claim under General Business Law Section 349, Empire must prove that the challenged acts or practices were misrepresentations and were misleading in a material way.
>
> "Misleading" means that the acts or practices must have been likely to mislead a reasonable consumer acting reasonably under the circumstances.
>
> "Misleading in a material way," means that the misrepresentations must be ones which would reasonably be expected to be important to a reasonable consumer in making his or her decision.
>
> In order to prove its claim under General Business Law Section 349, Empire must prove that it suffered actual injury as a result of smoking that was caused by the deceptive acts or practices of a defendant, or one acting within the scope of its agency as an agent of that defendant, causing damage to the health of a subscriber whose health care costs were paid by Empire. It need not show that Empire itself was deceived by the acts or practices of the defendant.

Trial Tr. at 8217-18.

Under the instructions, the jury could only award damages under section 349 for injuries that resulted from defendants' misrepresentations during the relevant statute of limitations period. Plaintiff's model did not, nor because of the pervasiveness of the defendants' fraud could it, perfectly determine what the world would look like had the defendants not deliberately misled the public about its products. The assumptions developed in the Harris model were based on the conception that different information could "move" smoking rates. These assumptions were Daubert tested and approved.

Dr. Harris's reliance on case studies and other literature assessing the impact of communications which affirmatively discouraged smoking was reasonable in describing how initiation and quit rates of smokers would have changed had defendants not been deceptive. To the extent that Dr. Harris's separately accounted for damages that resulted from defendants'

“gentlemen’s agreement” not to innovate, the jury could find this evidence relevant to establishing defendants’ overall intent to conceal the hazards of its products.

## APPENDIX C

Findings of fact in *Price v. Philip Morris*, No. 00-L-112, 2003 WL 22597608 (Ill.Cir. Mar. 21, 2003), *rev'd on other grounds*, 219 Ill.2d 182, 848 N.E.2d 1 (Ill. 2005) (suit barred by provision of state statute).

[The findings of fact and law in this opinion were made by the presiding judge after a full non-jury trial.]

1. . . . Specifically, the Court finds that the Class is defined as follows:

> All persons who purchased Defendant's Cambridge Lights and Marlboro Lights cigarettes in Illinois for personal consumption, between the first date the Defendant placed its Cambridge Lights and Marlboro Lights cigarettes into the stream of commerce through-February 8, 2001.

Excluded from the Class is Defendant, any parent, subsidiary, affiliate, or controlled person of Defendant, as well as the officers, directors, agents, servants, or employees of Defendant, and the immediate family members of such persons. Also excluded is any trial judge who may preside over this case.

2. This Class Action is brought pursuant to the Illinois Consumer Fraud and Deceptive Business Practices Act, 815 ILCS 505/1 *et seq.* ("Illinois Consumer Fraud Act"). Based upon the findings and conclusions herein, the Court finds that Defendant Philip Morris has violated the Illinois Consumer Fraud Act (815 ILCS 505/2) and the Uniform Deceptive Trade Practices Act (815 ILCS § 510/2). As a direct and proximate result of Defendant's violation of these statutes, Plaintiffs and the Class have suffered compensatory damages in the amount of $7.1005 Billion.

3. The trial in this case commenced on January 21, 2003 and continued through March 6, 2003. The findings contained within this Order are based upon the trial testimony in this action and

evidence admitted during trial.

4. This Court has presided over this action since its inception and is familiar with the issues of fact and law it presents. The Court has heard, read and considered all of the admitted evidence and testimony pertinent to the Consumer Fraud Act Claims at issue in this case. The Court has had the opportunity to consider the documents and materials admitted into evidence and to observe the demeanor, evaluate the credibility and weigh the testimony of the parties' fact and opinion witnesses and the arguments of counsel.

5. The Court, after considering all of the evidence, the demeanor and the credibility of the witnesses, makes the overall observation that the expert and fact witnesses who testified for the Plaintiffs in this case were credible and reputable. Specifically, many of the experts who offered opinions on behalf of the Plaintiffs in this case are leaders in their scientific fields, and national leaders of the public health community. The Court did not find the expert and fact testimony of Philip Morris' witnesses to be as credible as the testimony of witnesses for the Plaintiffs in this case.

6. During the course of this trial, the Court allowed both parties latitude with respect to their offer of expert testimony based upon their disclosures of opinion testimony under Illinois Supreme Court Rule 213. Both parties were permitted to offer opinion testimony over opposing counsel's objection in this regard. Although the Court allowed this evidence into the record, the Court finds (as a matter of fact) that my rulings in this case would be unchanged in any respect in the event the Court had disallowed the opinion testimony that was objected to by either party

on the basis of alleged inadequate Rule 213 disclosure.

* * * *

10. Based upon the facts, testimony and evidence presented at trial, the Court first revisits its prior Certification Order entered on February 8, 2001.

Under 735 ILCS 5/2-801, a Class may be certified under Illinois Law if:

1. the Class is so numerous that joinder of all members is impracticable;

2. there are questions of fact or law common to the Class, which common question predominate over any questions affecting only individual members;

3. the representative parties will fairly and adequately protect the interests of the Class; and,

4. the Class Action is an appropriate method for the fair and efficient adjudication of the controversy.

The Court finds that each of the prerequisites for the maintenance of a Class Action has been met.

11. With respect to numerosity, the Court finds Plaintiff have met their burden that the Class in this case includes over one million members and finds, based on the evidence introduced, that this Class is so numerous that joinder of all members is not only impracticable but virtually impossible. In addition, individual actions by each Class member would be impracticable.

12. Based upon the evidence introduced at trial, commonality has been demonstrated, because

the claims of all Class members are based upon both common questions of law and fact which predominate over any questions affecting individual Class members. *Miner v. Gillette Co.,* 87 Ill.2d 7 (1981). Philip Morris has engaged in a course of conduct that affects this Class in such a way that all members share various elements of this cause of action.

13. The common issues of law predominate because the Illinois Consumer Fraud Act applies to the claims of all Class members.

14. In addition, the Court finds, based upon the evidence introduced at trial, that the following common issues applicable to the entire Class:

a. whether Class members understood the descriptor “lights” and “lowered tar and nicotine” to mean less harmful, safer and/or delivering less tar;

b. whether these representations were false and/or misleading to Class members;

c. whether Defendant Philip Morris intended for the Class to rely upon these representations;

c. [sic] whether Philip Morris' conduct violated the Illinois Commerce Fraud Act and whether this violation was willful and wanton; and

d. whether Class members sustained damages as a result of Philip Morris' deceptive conduct.

15. Based upon the testimony of the representative parties-Sharon Price and Michael Fruth-offered during the trial of this action as well as these Class Representatives' attendance and participation in the trial of this matter, the Court finds that these representative parties have claims which are typical of claims of the Class members, that there is a substantial alignment between their interests and the interests of the Class in prosecuting this action, and that they have

indeed fairly and adequately protected the interest of the Class.

16. Based upon the trial in this matter, the Court finds that the law firm of Carr Korein Tillery was and is competent Class Counsel and adequately represents the interests of the Class in this action.

17. Based upon the evidence introduced at trial, a Class Action is not only the appropriate method for the fair and efficient adjudication of this controversy but is the only practicable method for such adjudication.

* * * *

20. The elements of Plaintiffs' claim under the Illinois Consumer Fraud Act are as follows:

a. a deceptive act or practice by Philip Morris;

b. Philip Morris' intent that the Plaintiffs rely on the deception;

c. the occurrence of the deception in the course of conduct involving trade or commerce; and,

d. actual damage to the Plaintiffs;

e. proximately caused by the deception.

See *Oliveira v. Amoco Oil Co.*, 201 Ill.2d 134 (2002).

21. With respect to Marlboro Lights, two specific representations are at issue: (1) the descriptor “Lights” in the name and (2) the “Lowered Tar and Nicotine” representation. Both of these

representations appeared on every pack of Marlboro Lights sold in Illinois from 1971 through the end of the Class Period.

22. With respect to Cambridge Lights, the representation at issue is the descriptor “Lights” in the brand name. This descriptor appeared on every package of Cambridge Lights from 1986 through the end of this Class Period.

23. The representations at issue in this case are alleged by Plaintiffs to have violated the Illinois Consumer Fraud Act in two distinct ways. First, Plaintiffs allege that the representations of “Lights” and “Lowered Tar and Nicotine” are material and false. Second, Plaintiffs allege that the representation of lower tar explicitly contained within “Lowered Tar and Nicotine” representation and implicitly communicated by the descriptor “Lights” is false and misleading because members of the Class did not receive lower tar and nicotine and, even if some few members of the Class did receive some small reduction in tar, this representation is still fraudulent and misleading because it does not state matters which materially qualify the statement as made.

24. The matters not stated are that the “tar” from Marlboro Lights and Cambridge Lights cigarettes is higher in toxic substances and more mutagenic than the tar from regular Marlboro and Cambridge cigarettes. Therefore, even if it were possible that for some Class members the representation of “lowered tar” were true, the representation (without the material qualification that the delivered tar is more harmful) is fraudulent.

* * * *

27. With respect to the definition of a “deceptive act” under the Act, 815 ILCS 501/1 *et seq.* provides in pertinent part:

Unfair methods of competition and unfair or deceptive acts or practices, including but not limited to the use or employment of any deception, fraud, false pretense, false promise, misrepresentation or the concealment, suppression, or omission of any material fact, with intent that others rely upon the concealment, suppression or omission of such material fact, or the use or employment of any practices described in Section 2 of the ‘Uniform Deceptive Trade Practices Act’, approved August 6, 1965, in conduct of any trade or commerce are hereby declared unlawful; whether any person has in fact been mislead, deceived, or damaged thereby.

28. Plaintiffs offered credible testimonial and documentary evidence to establish that prior to the release of Marlboro Lights and Cambridge Lights, Philip Morris recognized that smokers had become increasingly concerned about the health issues related to smoking beginning in the 1950's. Specifically, Dr. Joel Cohen, a Professor at the University of Florida who has studied consumer behavior (specifically in the context of tobacco) for over twenty years, established as a factual matter that Philip Morris fully understood (prior to the launch of Marlboro Lights and Cambridge Lights) smokers' concerns regarding the negative health impact of smoking.

29. The testimony and documents offered at trial demonstrate that Philip Morris' initial response to this growing health concern was to create a disinformation environment wherein Philip Morris through its own public statements (and through its participation in the Tobacco Institute)

knowingly and falsely disputed scientific conclusions that established a connection between smoking and diseases. Philip Morris' strategy was to create doubt about the negative health implications of smoking without actually denying these allegations. The evidence offered at trial establishes that Philip Morris continued this disinformation campaign through the mid-1990's.

30. Dr. Cohen and several other witnesses who testified in this case also offered credible testimony (based in part upon internal Philip Morris documents) that Philip Morris intentionally marketed Marlboro Lights with the descriptor “Lights” and the representation “Lowered Tar and Nicotine” on every package of Marlboro Lights with the intention of communicating to consumers that the Marlboro Lights cigarette was less harmful or safer than a regular Marlboro cigarette.

31. The Court finds, based upon the evidence introduced at trial, that Marlboro Lights and Cambridge Lights were introduced into the market by Philip Morris with the intent to provide smokers who were concerned about their health with a product that could reduce the cognitive dissonance associated with smoking and thereby allow them to continue to smoke cigarettes.

32. The Court finds, based upon the evidence introduced at trial, that Philip Morris' implicit health representations embodied by the descriptor “Lights”-although clearly understood by all Class members in this case-were not explicit, because Philip Morris (while at the same time intentionally and falsely misrepresenting these cigarette products as less harmful or less hazardous than their regular counterparts) was engaged in a disinformation campaign whereby it disputed that any cigarette was harmful or hazardous. As a consequence, Philip Morris chose to

make implicit health claims for these products rather than explicit claims so as not to contradict its separate and contemporaneous disinformation efforts directed to the smoking public.

33. The internal Philip Morris documents and testimony introduced as evidence at trial conclusively demonstrate that, as a factual matter, Philip Morris intended to deceive consumers into believing that Marlboro Lights and Cambridge Lights cigarettes were less harmful or safer than their regular counterparts.

34. This Court finds that based upon the expert testimony and documentary evidence introduced at trial, the positive health attribute associated with Marlboro Lights and Cambridge Lights created by Philip Morris' misrepresentations constitutes a universally positive and desirable product attribute for the Class members in this case in the form of a health reassurance.

35. Marlboro Lights and Cambridge Lights were health reassurance cigarettes in that they expressly and impliedly conveyed the notion of a positive health attribute through the representations of “Lights” (with respect to Marlboro Lights and Cambridge Lights) and the representation of ‘Lowered Tar and Nicotine” (with respect to Marlboro Lights).

36. The Court finds that the term “Lights” not only conveyed a message of reduced harm and safety, but also conveyed to Class members that the “Lights” cigarette product was lower in tar and nicotine.

37. The Court finds that the representation of “Lowered Tar and Nicotine” on the package of

Marlboro Lights not only conveyed the message to all consumers that Marlboro Lights possessed a positive health attribute as compared to a regular Marlboro, but also explicitly communicated that the Marlboro Lights cigarette would deliver less tar and nicotine to the consumer than a regular Marlboro.

38. Although Philip Morris' misrepresentations in this case were not in the form of an explicit statement that Marlboro Lights and Cambridge Lights were healthier or safer, the Court finds that Class members universally understood the message of reduced risk from these products.

39. Based upon the information environment existing at the time of the launch of Marlboro Lights and existing throughout the Class Period, the phrase “Lowered Tar and Nicotine” inescapably communicates that the Marlboro Lights cigarette is safer. The evidence at trial demonstrates that all consumers who chose a Marlboro Lights cigarette understood that tar and nicotine were the “bad” components in cigarette smoke and, therefore, lower levels of these components would reduce negative health affects of the cigarette product.

40. Although Philip Morris introduced evidence at trial in an attempt to contradict the universal reliance by Class members on the health representations implicit and explicit in the descriptors “Lights” and “Lowered Tar and Nicotine”, this evidence does not persuade the Court. If anything, this evidence only demonstrates that Class members may have relied to different degrees or in different ways upon these health representations. In all events, however, the testimony at trial demonstrates that all Class members in this case understood the positive health attribute associated with “Lights” on both the Marlboro Lights and Cambridge Lights package

and “Lowered Tar and Nicotine” on the Marlboro Lights package. The testimony and evidence also establishes that this understanding was relied upon as a causative or determining factor for all Class members even if the degree or extent may have varied between Class members.

41. Class members' belief that Marlboro Lights and Cambridge Lights cigarettes were healthier than their regular counterparts was reinforced by the feel or impact of the smoke from these cigarettes in a person's mouth, throat and lungs. Although Philip Morris contends that some smokers preferred the taste of Marlboro Lights and Cambridge Lights, the evidence indicates that this preference was actually an additional health reassurance enforcement.

42. Plaintiffs also offered the credible expert testimony of Robert Cialdini, a Professor of Psychology with special expertise in human behavior, social influence and persuasion focusing specifically on persuasion and influence in the consumer context. Dr. Cialdini testified that the words “Lights” and “Lowered Tar and Nicotine” on the cigarette products at issue in this case meant “less hazardous” to all Class members. Dr. Cialdini also explained the various psychological principles influencing Class members' purchase decision in this case.

43. Dr. Cialdini credibly testified that the four Principles of Influence: association, consistency, authority and social proof, all reinforced and reaffirmed the association of these Light cigarettes with improved health. As a consequence of these Principles of Influence, Dr. Cialdini concluded that improved health was at least one of the determinative reasons for every Class Member to purchase either Marlboro Lights or Cambridge Lights during the Class Period (with the possible exception of individuals with an irrational death wish).

44. In addition to the internal Philip Morris documents that demonstrate Philip Morris' specific intent to market Marlboro Lights and Cambridge Lights as healthier and less harmful cigarette products, many of the current and former marketing executives at Philip Morris also testified that these products were, indeed, intentionally marketed to the health conscious consumer with the intent that consumers rely upon the implicit representation of safety. This testimony includes, but is not limited to, statements of intent from the decision-makers at Philip Morris at the time of the launch of Marlboro Lights and internal Philip Morris documents demonstrating such intent.

45. The Court finds the testimony and argument presented by Philip Morris that these Light cigarettes were at least in part marketed based upon taste characteristics as not credible and unconvincing. Evidence, including testimony from Philip Morris' own personnel, was introduced at trial that at the time of the launch of Marlboro Lights, Philip Morris and the advertising agency responsible for marketing Marlboro Lights understood the taste of Marlboro Lights to be a negative product attribute that needed to be overcome by the implicit health representation.

46. As Defendant has correctly pointed out, the individual Class members who testified in this case started smoking at different ages, smoked different amounts, and varied in other respects in their smoking behavior. In my view, this would certainly be expected. However, some very important common facts came out in the testimony of all Class members: while acknowledging that all cigarettes are unsafe, they all believed that buying and smoking a Light cigarette would be a safer or healthier alternative to a regular cigarette. All Class members who were asked the question thought that the words “Lowered Tar and Nicotine” meant just that-that they were getting less tar and nicotine when they smoked Marlboro Lights than they would get from a

regular Marlboro. Most importantly, they all testified that their belief that Marlboro Lights (or Cambridge Lights) were safer or healthier or contained less of the “bad stuff” than the regular cigarette counterparts resulted from their being denominated “lights” and contributed to their decision to buy Marlboro Lights and Cambridge Lights cigarettes.

47. The testimony of Defendant's expert, Dr. Timothy Meyer, that people may smoke for a variety of reasons and may also choose Lights cigarettes for a variety of reasons misses the crux of Plaintiffs' case and is, therefore, unpersuasive. As a threshold matter, the mere existence of potential other reasons for a consumer to prefer the products at issue in this case does not vitiate or eliminate the fraud associated with the health representation as a causative influence on all Class members' purchase decisions. “A person is liable for his or her conduct whether it contributed wholly or partly to the plaintiffs' injury as long as it was one of the proximate causes of the injury.” *Leonardi v. Loyola of Chicago,* 168 Ill.2d 83, 658 N.E.2d 450, 455 (1995).

48. Dr. Meyer testified that the belief that Marlboro Lights and Cambridge Lights are safer was not a factor in the cigarette choice of all Class members because the health hazards of smoking are irrelevant to some smokers and some young smokers are actually attracted to the health hazard of smoking. The Court finds it altogether implausible that any smokers who have no concerns about the hazards of smoking or who actually want to defy death by smoking the most hazardous cigarettes available would choose specifically to smoke a low tar cigarette like Marlboro Lights and Cambridge Lights. Indeed, in making these assertions, Dr. Meyer had no empirical or other data specifically with respect to Marlboro Lights or Cambridge Lights and he had failed to avail himself of any of the relevant internal studies and documentation accumulated

by the Defendant on whose behalf he was testifying.

* * * *

50. Based upon the testimony and evidence introduced at trial, the Court finds that the term "Lights" and the phrase "Lowered Tar and Nicotine" universally communicated a reduced harm message to all Class members in this case and that all Class members relied upon this representation as at least one of the determining factors for their purchase decision.

51. Philip Morris offered survey evidence in an attempt to establish that only a portion of the Class was deceived by the misrepresentations of "Lights" and "Lowered Tar and Nicotine". On rebuttal, Plaintiffs offered the testimony of Dr. Stanley Presser to explain the significance and meaning of the survey data offered by Philip Morris.

52. The Court finds Dr. Stanley Presser to be one of the preeminent survey researchers and methodologists in this country and the court finds his testimony to be credible. Dr. Presser explained that none of the survey data presented by Philip Morris was informative of the question as to what percentage of Light smokers believed Light cigarettes were safer. In addition, none of the survey data offered by Philip Morris is informative of the question relating to what percentage of Light smokers purchased Light cigarettes for health or safety-related reasons. Dr. Presser explained that most of these surveys measured the wrong population. The surveys relied upon by Philip Morris included both non-smokers and smokers of cigarette products other than Lights cigarettes. Therefore, the survey data was not representative of any

percentage of Light smokers specifically. Other survey data offered by Philip Morris asked questions not related in any way to the critical questions at issue in this case.

53. Based upon the comparative credibility and persuasiveness of the evidence and testimony presented by Philip Morris in opposition to Plaintiffs' testimony that all Class members understood “Lights” and “Lowered Tar and Nicotine” to mean safer and all Class members purchased their cigarettes based at least in part upon this representation, the Court finds Philip Morris' evidence and testimony to be neither credible nor persuasive on this issue.

54. Philip Morris argued at trial that these representations were not the only source of information regarding Marlboro Lights and Cambridge Lights being safer than their regular counterparts. Philip Morris specifically argued that the public health community as a whole, and specific components of the public health community (including the authors of the Reports of the Surgeon General and statements issued by the American Cancer Society) were the reasons some consumers believed these products to be safer. The Court finds this testimony and evidence neither credible nor persuasive as a defense to liability in this Action. As a threshold matter, the fact that the public health community recommended to those smokers who could not quit that a lower delivery cigarette would reduce risk is not misleading. There is apparently no dispute that actual lower delivery of toxic substances may reduce harm. The fact that Marlboro Lights and Cambridge Lights did not reduce the actual delivery of harmful toxins does not convert the message from the public health community into a defense to Philip Morris' intentional fraudulent conduct.

55. Morever, a significant body of credible evidence was introduced at trial demonstrating that Philip Morris had specific scientific and cigarette design knowledge that the public health community did not possess related to Lights cigarettes generally as well as Marlboro Lights and Cambridge Lights cigarettes specifically. This demonstrates that although Philip Morris knew their Lights cigarettes were not safer, the public health community did not know this fact. The Court finds that Philip Morris took advantage of the message of the public health community in selling their cigarettes which delivered neither lower tar and nicotine, nor less harm to the Class members in this case.

56. The testimony from Dr. William Farone (a high ranking scientist within Philip Morris from 1976 through 1984), demonstrates credibly that Philip Morris knew Light cigarettes (and specifically Marlboro Lights and Cambridge Lights) did not reduce the delivery of tar or nicotine to the consumer compared to their regular counterparts and that these cigarettes were not designed to reduce actual delivery to smokers.

57. Philip Morris internal documents and the testimony offered at trial demonstrate that Philip Morris, prior to the launch of Marlboro Lights and Cambridge Lights, knew that smokers adjusted their smoking behavior through largely unconscious means so as to receive the same dose of nicotine and tar from a Light cigarette as from a regular cigarette. In fact, the testimony and evidence clearly establish that Marlboro Lights and Cambridge Lights were specifically designed in such a way as to reduce the machine-measured tar and nicotine delivery while at the same time allowing consumers to extract the same levels of tar and nicotine from these products as they would extract from their regular Marlboro and Cambridge counterparts.

58. The evidence establishes that the primary design distinction between Marlboro Lights and Cambridge Lights as compared to their regular counterparts is increased ventilation. Ventilation is measured by Philip Morris as the percent of air that is drawn in through the filter to dilute the smoke of the cigarette when smoked. This design distinction of ventilation provides for a lower machine measurement of tar and nicotine for “Lights” cigarettes, while still allowing the consumer to receive the same delivery of tar and nicotine from the “Lights” and regular cigarettes.

59. Although Philip Morris offered factual testimony through Willie Houck as to Philip Morris' intent and purpose in designing Marlboro Lights, the Court finds this testimony to not be credible. At the time of the design of Marlboro Lights, Willie Houck was a sophomore in college attending night school. He was an extremely junior member of the filter design group and did not have responsibility or authority to design and create Marlboro Lights (which is the way his testimony was offered by Philip Morris). Furthermore, he admittedly had absolutely no involvement in marketing these cigarettes in any fashion, particularly as “Lights,” or representing them to deliver “lowered tar and nicotine” on the packaging.

60. Plaintiffs offered testimony and documentary evidence credibly demonstrating that the representations of “Lights” and “Lowered Tar and Nicotine” were false for all Class members in this case. For example, Dr. Neal Benowitz testified that Class members who smoked Marlboro Lights and Cambridge Lights would receive the same amount of tar and nicotine from these products as they would receive from a regular Marlboro or a regular Cambridge respectively. Dr. Benowitz specifically concluded, based upon his extensive scientific research, that smokers of

these Marlboro Lights and Cambridge Lights cigarettes engage in what is called compensatory smoking behavior so as to receive 100% of the tar and nicotine that would be received by this smoker from the regular counterpart cigarette.

61. Compensatory smoking behavior consists of unconscious acts-including but not limited to inhaling deeper, more frequent puffs, larger puffs and holding the smoke in the lungs for a longer period of time-that enable the smoker to regulate the amount of nicotine, and hence tar, received by the smoker. Dr. Benowitz credibly testified that these unconscious acts result in there being no difference for an individual smoker between the tar and nicotine delivery from a Marlboro Lights cigarettes as compared to a regular Marlboro cigarette (the same being true of Cambridge Lights cigarettes and regular Cambridge cigarettes).

62. Dr. Benowitz and other expert witnesses explained that the reason compensation occurs is that smokers regulate their intake of nicotine, a pharmacologically active drug. Smokers change their smoking behavior in largely unconscious ways, particularly with respect to the products at issue in this case, to obtain the dose of nicotine required by each individual smoker. Although the nicotine level required by each smoker may vary among smokers, the fact that each smoker will obtain the same amount of nicotine and tar from these Lights cigarettes as from their regular counterparts does not vary.

63. Dr. Benowitz is the leading researcher in the fields of nicotine, addiction and compensatory smoking behavior. He analyzed several different kinds of scientific studies measuring compensatory smoking behavior, including: forced switching studies, cross-sectional studies and

spontaneous brand switching studies. Based upon all of his research, experience and his expertise in these scientific areas, Dr. Benowitz offered the scientific conclusion that compensation for this Class is 100%. Significantly, this conclusion was never rebutted by the Defendant.

64. In fact, Philip Morris has publicly taken the position as of November 2002 that people who switch to Light cigarettes are likely to inhale the same levels of cancer-causing toxins. In addition, Philip Morris' own scientific expert, Dr. Richard Carchman, agreed that Philip Morris' public position regarding compensatory smoking behavior means that consumers are compensating 100% when they switch from a regular cigarette like Marlboro to a Light cigarette like Marlboro Lights.

65. Philip Morris' own internal research regarding compensatory smoking behavior demonstrates that Philip Morris knew since before the launch of Marlboro Lights and Cambridge Lights that smokers will adjust their behavior to receive the same level of tar and nicotine from these Light cigarettes as they would receive from the their regular cigarette counterparts. Although Philip Morris attempted to contradict its own internal studies through the factual testimony of Barbro Goodman, this Court finds this testimony to be not credible and unpersuasive.

66. Based in part upon the fact that smokers of Marlboro Lights and Cambridge Lights engage in complete compensatory smoking behaviors, the Court finds that Marlboro Lights and Cambridge Lights are just as harmful as regular Marlboro and regular Cambridge for all Class members in this case.

67. Plaintiffs also demonstrated that Light cigarettes are just as harmful as regular cigarettes through the unrebutted testimony of Dr. Michael Thun. Dr. Thun is a medical doctor, an expert in epidemiology, and also a co-author of Chapter 4, Monograph 13 (discussed below). Dr. Thun has specifically studied epidemiology for the past twenty-five years while working at the Centers for Disease Control and the American Cancer Society.

68. Dr. Thun testified, based upon all of his epidemiological experience and all of the studies that he has reviewed, that the machine-measured tar difference between Marlboro Lights and Marlboro (as well as Cambridge Lights and Cambridge) does not lead to any disease reduction whatsoever among these comparative smoking populations. The evidence also establishes that the same is true for the population of Class members in this case. The Court finds this testimony to be both credible and persuasive, as well as un-rebutted on this record.

69. Dr. Thun (along with other witnesses) also credibly testified that Light cigarettes have had other negative impacts on disease risk. Specifically, the false perception that a smoker is reducing risk may cause smokers to delay cessation and cessation has been proven to reduce risk from all forms of disease caused by cigarette smoke. In addition, Dr. Thun testified that Light cigarettes may have impacted initiation rates in a way that has led to negative health consequences for the Class.

70. The evidence at trial demonstrates not only that Marlboro Lights and Cambridge Lights are just as harmful as their regular counterparts, but that these products are actually more harmful and more hazardous than their regular counterparts. The Court finds that Philip Morris was

aware of the increased harm from these Light cigarettes based upon their own scientific testing. Philip Morris' knowledge and understanding of increased harm from Lights cigarettes is also demonstrated by Philip Morris' refusal to conduct any additional testing to reconfirm this scientific conclusion of increased harm.

71. Philip Morris' documents, as well as the testimony of Dr. William Farone and Dr. Peter Shields, establish as a factual matter that Philip Morris has known for over twenty-five years that Lights cigarettes like Marlboro Lights and Cambridge Lights-with increased ventilation-are more mutagenic than cigarettes with less ventilation.

72. Philip Morris conducted mutagenesis studies as part of its toxicological evaluation in order to predict the carcinogenic potential of their products and product design changes. The testimony at trial established that Philip Morris believed its biological test results (in the form of Ames mutagenicity testing) to be both meaningful and predictive of carcinogenesis. In fact, several of Philip Morris' scientists testified that the Ames test was the primary biological test relied upon by Philip Morris. This testing was and is used by Philip Morris to demonstrate reduced harm from cigarettes. It is therefore quite significant that their test results have consistently demonstrated for the past twenty five years that increased ventilation (the primary design distinction between Light cigarettes and their regular counterparts) increases the specific mutagenicity of cigarette smoke.

73. Although Philip Morris attempted to reduce the evidentiary significance of its own testing through the testimony of Dr. Richard Carchman, the Court does not find this testimony to be

credible. The biological testing over the past twenty five years has consistently demonstrated an increase in specific mutagenicity associated with an increase in ventilation.

74. The fact that Philip Morris intentionally prevented its scientists in the United States from performing additional testing does not undermine the credibility and reliability of the testing that Philip Morris did perform. In fact, this intentional failure to conduct additional testing further demonstrates Philip Morris' belief that Light cigarettes were and are more harmful than their regular counterparts.

75. Plaintiffs also introduced credible testimony regarding the specific toxicity levels of cigarette smoke comparing Marlboro Lights cigarettes to regular Marlboro. Based upon the constituent toxicity testing results performed by Philip Morris itself and other tobacco manufacturers in the context of the Massachusetts Benchmark Study ("MBS"), Plaintiffs demonstrated through Dr. Jeffrey Harris that Marlboro Lights has higher specific toxicity levels for almost all of the toxic substances measured in cigarette smoke in the MBS.

76. This testimony and evidence is particularly persuasive and disturbing. These toxicity levels measured in the MBS study demonstrate that even if a smoker does not compensate completely (a fact itself which is contrary to the evidence presented), a smoker of Marlboro Lights will receive higher levels of most of the toxic substances found in cigarette smoke from a Marlboro Lights than they will receive from a regular Marlboro. The Court notes that the constituent toxicity testimony was completely unrebutted.

77. Specifically with respect to the two toxic substances Philip Morris itself has targeted for reduction as a means of demonstrating harm reduction (Acrolein and 1,3-Butadiene), a smoker of Marlboro Lights need only compensate 14% to receive higher levels of these two specific toxic substances. Therefore, the Court finds that Marlboro Lights and Cambridge Lights, based upon the similar design distinction of increased ventilation, are more harmful for every Class Member than a regular Marlboro or a regular Cambridge cigarette.

78. Plaintiffs introduced credible scientific and epidemiological evidence that connected the dramatic increase in adenocarcinomas (lung cancer of the peripheral lung cells) to the increased prevalence of Light cigarettes like Marlboro Lights and Cambridge Lights. The unrebutted expert testimony of Dr. Peter Shields and Dr. Michael Thun establish that Marlboro Lights and Cambridge Lights have contributed to the dramatic rise in adenocarcinoma cancer rates, thereby demonstrating another line of evidence that establishes increased harm from these "Light" cigarette products.

79. Plaintiffs offered extensive evidence, both documentary and through expert witnesses, relating to the October 2001 consensus public health publication entitled *Monograph 13-Risks Associated with Smoking Cigarettes with Low Machine-Measured Yields of Tar and Nicotine*-published by the United States Department of Public Health and Human Services-Public Health Service-National Institutes of Health-National Cancer Institute. Monograph 13 represents the first public health community consensus that cigarettes with lower machine-measured yields of tar and nicotine (including Light cigarettes like Marlboro Lights and Cambridge Lights) do not lower the risk of disease as compared to higher yield cigarettes (like regular Marlboro and

regular Cambridge).

80. Philip Morris made no attempt to rebut the testimony that Monograph 13 represented the first scientific consensus regarding the lack of any harm reduction associated with Light cigarettes. In fact, Philip Morris made no attempt to contradict any of the conclusions within Monograph 13. Based upon the fact that Monograph 13 represents the first consensus within the public health community as to the lack of any harm reduction from Light cigarettes, the Court finds that Class in this case could not have known of the fraud associated with Marlboro Lights and Cambridge Lights prior to the publication of Monograph 13 in October 2001. Further, the conclusions of Monograph 13 itself establish that Philip Morris recognized the inherent deception of offering cigarettes as “Light” and “Lowered Tar and Nicotine”.

81. Although Philip Morris offered isolated references in scientific publications prior to the issuance of Monograph 13 of the potential for the benefit of low tar cigarettes to have been overestimated, the first public community consensus on the lack of any benefit from Light cigarettes as compared to regular cigarettes occurred after the Class Period in this case. As discussed previously, Philip Morris' contention that the public health community should somehow be blamed for the fraud associated with Lights cigarettes is both morally abhorrent and factually incorrect. At all times since the inception of their Lights products, Philip Morris was aware of their deception and was aware that the public health community was among those deceived by the fact that their products did not deliver the promised lower tar and nicotine and were not “light” as represented. Yet, it was not until the fall of 2002 that they disseminated this knowledge. As such, they cannot assert that the Class should have known information which

they chose not to publicly reveal until November 2002. The fact that Philip Morris found it necessary to reveal this information so prominently on their website, in newspaper inserts, and by placing onserts in their cigarette packs demonstrates that Philip Morris understood that consumers of their product were not aware of the information contained in these materials.

82. The proper measure of damages under the Illinois Consumer Fraud Act is to measure the difference between the value the product would have had at the time of the sale if the representations had been true and the actual value to the consumer of the property sold. *See Gerill Corp. v. Jack L. Hargrove Builders, Inc.*, 538 N.E.2d 530, 537-38 (Ill.1989). *See also Manjal v. Baird & Worner, In/c.*, 92 Ill.Dec. 809, 820 (2nd Dist.1985).

83. Both Plaintiffs and Defendant offered testimony from economists regarding the proper economic method to measure the damages to the Class. Plaintiffs offered the testimony of Dr. Jeffrey Harris, an expert economist from MIT who is not only a Professor of Economics but also a full time practicing physician. Defendant offered Dr. Kip Viscussi, a Professor of Law and Economics at Harvard Law School. Both of these economic experts were qualified to render opinions regarding economic theory. However, the Court finds the testimony of Dr. Jeffrey Harris more credible and more persuasive than the testimony of Dr. Kip Viscussi.

84. Dr. Harris and Dr. Viscussi essentially agree that the correct economic model for measuring damages in this case should be the difference between the price paid by the consumers in the Class and the value to the consumer of the "misrepresented" cigarette they actually received. The critical distinction between the two models proposed by the two economists in this case is

whether the promised product with the promised attributes is made available when determining the value to the consumer (or willingness to pay) for the “misrepresented” Lights.

85. Dr. Harris testified that the only way to accurately measure the damages at the time of the sale or transaction caused by the fraud is to provide as an alternative in the comparative valuation of the product that was promised by Philip Morris.

86. There is no dispute that the promised product in this case is a “genuine” harm reducing “Light” cigarette. Dr. Harris credibly testified that if you do not include the product that was promised in the comparative valuation, you cannot measure the value of the promise, i.e. the harm reduction promise of Marlboro Lights and Cambridge Lights.

87. Dr. Viscussi testified that because the promised product does not exist in the “real world,” it should not exist in the valuation measure for this case. This Court rejects the testimony of Dr. Viscussi in this regard. The reason the promised product (i.e. a “real” light cigarette that actually reduces the harm from cigarettes and delivers lowered tar and nicotine) does not exist in the “real world” is that Philip Morris never offered a “real” Marlboro Light or Cambridge Light cigarette to the Class. Philip Morris cannot escape liability in this case from its fraud because of the fact that it never created the product that it promised in Marlboro Lights and Cambridge Lights.

88. Philip Morris acknowledges as of November 2002 that it has never and does not now sell or market any “safer” cigarettes. The newspaper insert distributed throughout the United States

through major newspapers and the “onsert” placed on packages of Marlboro Lights for a very brief time in November 2002 both state unequivocally that there is no such thing as a safer cigarette and a consumer should not believe that Lights cigarettes are safer. This Court finds that this disclosure does not minimize but rather dramatizes the deception which took place throughout the Class period. This disclosure certainly cannot serve to avoid liability made, as it was, long after this case was filed. However, these disclosures do establish that even Philip Morris agrees that Marlboro Lights and Cambridge Lights are not any safer than their regular counterparts.

89. In order to measure the damages proximately caused by Philip Morris' misrepresentation, Plaintiffs offered into evidence a valuation study conducted by Dr. Dennis of Knowledge Networks. Knowledge Networks has created a web-enabled probability sample of nationally representative survey respondents in the United States population. Within that population, Dr. Dennis conducted a survey for purposes of this case of Marlboro Lights smokers to measure the value of the health attribute aspect of Marlboro Lights to consumers in order to determine the damage caused by Philip Morris' fraud.)

90. The Court finds that the measured value of this health attribute is the damage proximately caused by Philip Morris' fraud in this case Philip Morris implicitly represented Marlboro Lights and Cambridge Lights as less harmful or safer. The Knowledge Networks survey provided an accurate measure of damages to the Class members in this case by measuring the difference between the price paid for the cigarettes purchased during the Class Period and the value to the Class members of the product actually received-a product that not only was just as harmful as a

regular cigarette but in fact could be more harmful. The aggregate diminution in value measured by the Knowledge Networks survey caused by Philip Morris' fraud was calculated to be 92.3%.

91. Although the Knowledge Networks survey measured damages as an aggregate average for a representative sample of Marlboro Lights smokers and not for Cambridge Lights smokers, the Court finds, based upon all of the testimony offered in this case, that there is no reason to believe that Cambridge Lights smokers would have a different aggregate average valuation of the health attribute of their Light cigarette than Marlboro Lights smokers. In fact, this Court finds as a factual matter that the damages from the fraud relating to the “Lights” descriptor for Class members who purchased Marlboro Lights is, in the aggregate average, the same as the aggregate average damages to Class members who purchased Cambridge Lights.

92. The Court finds, based in part upon the testimony of Dr. Dennis who designed and implemented the Knowledge Networks valuation survey, that the survey conducted by Knowledge Networks did provide an accurate measure of the damage suffered by the Class members in this case.

93. Philip Morris attempted to challenge the accuracy of the survey measurement through the testimony of Dr. Nancy Mathiowetz. However, the Court finds that the survey criticisms offered by Dr. Nancy Mathiowetz were neither credible nor persuasive. In fact, Dr. Mathiowetz admitted that she had no opinion whatsoever as to the directional impact of any of the criticisms she identified with respect to this data. Moreover, the criticisms identified by Dr. Mathiowetz were specifically refuted by Dr. Stanley Presser. The Court finds the testimony of Dr. Presser on the

issues relating to survey data to be credible and persuasive.

94. Philip Morris offered the testimony of Dr. Viscussi to also criticize the survey data and to try to establish that a report conducted for the National Oceanic and Atmospheric Administration ("NOAA") contained relevant survey guidelines for this case. However, Dr. Presser credibly testified that these NOAA criteria have no applicability to the Knowledge Networks survey conducted to measure damages in this case.

95. Based upon the diminution in value measured by Dr. Dennis' survey, Dr. Jeffrey Harris, a qualified medical doctor and economist with over 25 years experience in health economics, calculated the total damages to Class members in this case.

96. First, Dr. Harris calculated the total consumer expenditure for Class members on both Marlboro Lights and Cambridge Lights for the relevant portion of the Class period. Because the private cause of action under Section 2 of the Illinois Consumer Fraud Act was not effective until October 1973, the Court finds the appropriate period for damages calculation in this case to be from October 1973 through February 8, 2001. Dr. Harris calculated the relevant total consumer expenditure to be $7.6298 Billion. None of this consumer expenditure testimony was rebutted in any way by Philip Morris.

97. The next step in Dr. Harris' damages calculation was to compute the aggregate damages by multiplying the appropriate diminution in value (92.3%) times the relevant total consumer expenditure of Class members in this case. Based upon this time period for determining the

relevant total consumer expenditure, Dr. Harris calculated the compensatory damages to Class members to be $7 .1005 billion.

98. This compensatory damage calculation includes a 5% non-compounded prejudgment interest component-in the amount of $2.1137 Billion. The Court finds under the circumstances of this case (and under the Illinois Consumer Fraud Act) that prejudgment interest is appropriate generally to this case and for this amount to be appropriate specifically.

* * * *

105. Philip Morris' First Affirmative Defense-Statute of Limitations-is denied as legally insufficient because none of the allegations relate to knowledge that would trigger a Statute of Limitations for the claims in this case. Philip Morris has the burden of establishing that Class members knew of the fraud and failed to act on that knowledge. However, even if Class members knew all of the facts alleged here, they did not have knowledge of the fraud. With respect to subparagraphs (a) through (e), these allegations are legally insufficient because they relate to alleged knowledge of the general dangers of smoking as opposed to the fraud allegations related to Marlboro Lights and Cambridge Lights. Sub-paragraph (f) is legally insufficient because whether Class members knew the intention of the FTC machine measurements is not relevant to the claims at issue in this case. As to sub-paragraph (g), even if these factual allegations were known to some Class members, this knowledge is legally insufficient for the Statute of Limitations Affirmative Defense, because it does not establish knowledge of the increased harm relating to Marlboro Lights and Cambridge Lights cigarettes.

106. Philip Morris' Statute of Limitations Affirmative Defense also fails based upon the discovery rule. The discovery rule, which “delays the commencement of the relevant statute of limitations until the plaintiff knows or reasonably should know that he has been injured and that his injury has been wrongfully caused[,]” applies to consumer fraud cases. *Hermitage Corp. v. Contractors Adjustment Co.*, 651 N.E.2d 1132, 1135-36 (Ill.1995).

107. “When a plaintiff uses the discovery rule to delay commencement of the statute of limitations, the plaintiff has the burden of proving the date of discovery.” *Id.* at 1138. Both Plaintiffs allege that they were “without knowledge of the conduct by Defendant alleged in this Complaint, or of any facts from which it might reasonably be concluded that Defendant was so acting, or which would have lead to the discovery of such action, until after the filing of this action.” Second Amended Complaint ¶ 13, 14. The Court finds that neither Plaintiffs nor Class members had either actual or constructive knowledge prior to the filing of this case of the essential injury which is the subject of Plaintiffs' Complaint: economic loss caused by Philip Morris' descriptors representing that Marlboro Lights and Cambridge Lights are safer than their regular counterparts when, in fact; these Lights cigarettes are more harmful than regular cigarettes.

108. Philip Morris' Second Affirmative Defense of Laches is an equitable defense and does not apply to Plaintiffs' claims under the Illinois Consumer Fraud Act. Even if such a defense would apply, the factual basis for laches is insufficient as a matter of law for the reasons identified in the discussion regarding their proposed Statute of Limitations defense.

* * * *

110. Philip Morris' Fourth Affirmative Defense-Impermissible Claims Splitting-is denied for the reasons identified in this Court's Certification Order entered on February 8, 2001.

111. Philip Morris' Fifth Affirmative Defense-Federal Preemption-is denied. Philip Morris has argued in its summary judgment briefs and throughout this trial that Plaintiffs claims in this case are preempted by the Federal Cigarette Advertising and Labeling Act, 15 U.S.C. § 1331, *et seq.* ("FCLAA"). 1334(b) of the FCLAA which provides that "no requirement or prohibition based on smoking and health shall be imposed under state law with respect to the advertising or promotion of any cigarettes, the packages of which are labeled in conformity with the provisions of this Act." 15 U.S.C. 1334(b). Philip Morris contends that this provision expressly preempts the claims brought by Plaintiffs in this case. The Court finds that none of Plaintiffs' claims in this case are expressly preempted by the FCLAA.

112. The United States Supreme Court in *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504 (1992), in interpreting the FCLAA, held that claims relating to Philip Morris' failure "to provide adequate warnings of the health consequences of cigarette smoking" and claims that Philip Morris attempted to "neutralize the warning labels" would both be preempted. 505 U.S. at 510, 524 & 528. However, Plaintiffs claims in this case are neither based upon a failure of Philip Morris to provide adequate warnings nor based upon a neutralization claim. Instead, Plaintiffs claims in this case "are predicated not on a duty, based on smoking and health, but rather on a more general obligation-the duty not to deceive." *Id.* at 528-29.

113. The Illinois Consumer Fraud Act makes unlawful “unfair or deceptive acts or practices including but not limited to the use or employment of any deception, fraud, pretense, false promise, misrepresentation or concealment, suppression or omission of any material fact ... in the conduct of any trade or commerce[.]” 815 ILCS 505/2. The Court finds that Plaintiffs' claims in this case are based upon the independent duty not to deceive under state law. “[T]he predicate of this claim is a state-law duty not to make false statements of material fact or to conceal such facts.” *Cipollone*, 505 U.S. at 528.

114. Plaintiffs have alleged essentially two types of misrepresentation claims under the Illinois Consumer Fraud Act. First, Plaintiffs have asserted that Philip Morris' representations that their Marlboro Lights and Cambridge Lights cigarettes are “Light” and that Marlboro Lights are “Lowered Tar and Nicotine” are false. The Court finds this claim to be wholly unrelated to any failure to warn claim and, therefore, not preempted.

115. Plaintiffs second type of misrepresentation claim relates to Philip Morris' representations of lower tar (both explicitly and implicitly through the use of the descriptor “Lights” which communicates lower tar). Here, even if for some consumers the statements relating to lower tar could be technically true as far as that statement goes (which is contrary to the evidence presented), these statements are nevertheless fraudulent and misleading, because the tar from these “light” cigarettes is more harmful and higher in toxic substances. Therefore, this claim, whether characterized as an omission or simply as a false and misleading statement, does not implicate a failure to warn claim as Philip Morris contends and is not preempted.

116. Philip Morris is not under any obligation to warn or provide any additional information regarding the tar content in its cigarettes based upon Plaintiffs' misrepresentation / omission claims. Philip Morris' representations regarding the lower tar level of Light cigarettes (while knowing that the tar from these cigarettes is actually more harmful and of a different constituency) is false and misleading and violates Philip Morris' independent state law duty not to deceive. In *Cipollone*, the Supreme Court noted that "Congress offered no sign that it wished to insulate cigarette manufacturers from long standing rules governing fraud." 505 U.S. at 529.

117. Therefore, the Court holds that Plaintiffs' claims regarding the fraudulent misrepresentations of lower tar-without materially qualifying that statement-are not preempted. It is irrelevant for this analysis whether this claim is characterized as an omission or not. In either event, no failure to warn is being claimed in this context. Instead, all of Plaintiffs' claims are "intentional fraud and misrepresentation both by false representation of a material fact and by concealment of a material fact"[.] *See Cipollone*, 508 U.S. at 528.

118. Philip Morris also contends that Plaintiffs' claims in this case somehow conflict with the regulations and policies of the Federal Trade Commission ("FTC"). In support of this position, Philip Morris offered testimony of John Peterman, an economist formerly with the FTC Bureau of Economics. The Court finds this testimony to be unpersuasive on the issue of conflict preemption. Further, the Court finds the testimony of Mr. Peterman to be unrelated to any potential areas of his expertise. Instead, he offered a narrative summary of historical facts. The Court finds that he has no expertise in assessing FTC involvement in regulation of the issues surrounding the allegations of Plaintiffs' Complaint. Based upon the evidence presented in this

case, both in the form of testimony and documents, the Court finds that Plaintiffs' claims in this case do not conflict with the FCLAA or with any regulations or policies of the Federal Trade Commission.

119. Neither the FCLAA nor any regulation of the FTC governs the conduct at issue in this case- Philip Morris' voluntary use of “Lights” and “Lowered Tar and Nicotine” descriptors on its cigarette packages. Under the facts and circumstances in this case, the fact that the FTC has not adopted regulations regarding the use of the “Lights” and “Lowered Tar and Nicotine” descriptors (even if the FTC has at certain points in time considered such regulations) does not create conflict preemption. See *Sprietsma v. Mercury Marine,* 123 S.Ct. 518, 527-29 (2002).

* * * *

121. Philip Morris has failed to demonstrate through evidence offered at trial that the FTC has some specific specialized or technical expertise such that this Court should defer to the FTC rather than adjudicating this matter. In fact, the Court finds that the evidence and testimony at trial demonstrates that the FTC lacks such expertise and has publicly acknowledged this lack of expertise on numerous occasions. The claims in this case concern fraud and deception under the Illinois Consumer Fraud Act and the Uniform Deceptive Trade Practices Act. This Court is well equipped to determine these issues. See *Crain v. Lucent Technologies,* 317 Ill.App.3d 486, 495 (5th Dist.2000).

122. The Court notes that Philip Morris has attempted to mis-characterize Plaintiffs' claims in an

attempt to succeed on its affirmative defenses. Plaintiffs' claims in this case are not based upon any challenge to the FTC machine measuring procedures or the tar and nicotine ratings published based upon those testing procedure. Plaintiffs' claims in this case are related to Philip Morris' specific intentional misrepresentations on the packages of Marlboro Lights and Cambridge Lights.

123. The fact that Philip Morris intentionally designed these “Lights” products to register lower on the FTC machine measurements than actually delivered to the consumer is only relevant to the extent Philip Morris has used these lower FTC machine measurements as an attempted justification for the use of its fraudulent descriptors. Based upon the evidence introduced at trial, the lower machine measurements of tar and nicotine on the FTC machine do not justify Philip Morris' use of these descriptors. In any event, the fact that Philip Morris attempted to defend its fraudulent misrepresentations based upon FTC measurements does not convert Plaintiffs' claims into claims based upon those measurements.

124. Philip Morris' Seventh Affirmative Defense-Compliance with Government Regulations-is denied. The false and misleading use of the descriptors “Lights” and “Lowered Tar and Nicotine” has never been specifically authorized by law. Philip Morris voluntarily chose to use these terms on its packages of Marlboro Lights and Cambridge Lights. No regulatory body has ever required (or even specifically approved) the use of these terms by Philip Morris. The Court finds that Philip Morris has not established that its conduct is “specifically authorized” by law. See *Aurora Fire Fighters Credit Union v. Harvey,* 516 N.E.2d 1028, 1036 (Ill.Ct.App.1987).

125. Philip Morris' Eighth Affirmative Defense-First Amendment to the United States Constitution-is denied. Philip Morris' claims that the descriptors “Lights” and “Lowered Tar and Nicotine” provide accurate information regarding the FTC machine-measured tar and nicotine yields of Marlboro Lights and Cambridge Lights cigarettes. Here again, Philip Morris attempts to inject the FTC measurements as an apparent justification for the fraudulent use of these descriptors.

* * * *

129. Philip Morris' Eleventh Affirmative Defense-Failure to Mitigate-is denied as a matter of law. The Court finds as a threshold matter that this contention of Class members' failure to mitigate has no applicability to the facts and circumstances of this case. Moreover, Philip Morris has failed to offer evidence that establishes Class members knew about the fraud during the Class Period and failed to take reasonable steps to prevent new harm or damages.

130. Philip Morris' Twelfth Affirmative Defense-Assumption of the Risk-is denied. Even if Class members knew all of the factual allegations identified in paragraph 43, any risk related to the fraud at issue in this case would not be “assumed.” These allegations relate largely to the harmful aspects of cigarettes generally as opposed to the fact that Light cigarettes are more harmful than their regular counterparts.

131. Philip Morris' Thirteenth Affirmative Defense-Common Knowledge-is denied. Even if Class members knew of these facts, this would not establish the defense of common knowledge

to the claims in this case. Moreover, this is not a proper Affirmative Defense but simply a re-characterization of Philip Morris' defense against causation.

132. Philip Morris' Fourteenth Affirmative Defense-Information in the Public Domain-is denied for the same reasons as the Thirteenth Affirmative Defense.

133. Philip Morris' Fifteenth Affirmative Defense-Inappropriate Retroactive Application of the Law-is granted only to the extent that Plaintiffs' claims for damages on sales prior to October 1, 1973 are denied.

* * * *

137. Philip Morris' Nineteenth Affirmative Defense-Master Settlement Agreement Release-is denied. The Court holds that the claims at issue in this case were not released under the Master Settlement Agreement.

138. Philip Morris' Twentieth Affirmative Defense-Comparative Fault-is denied. Even if the allegations in support of this Affirmative Defense were true, Plaintiffs and Class members did not violate any duty to exercise reasonable care and caution to prevent the harm alleged in Plaintiffs' Complaint.

* * * *

146. After considering all the testimony and evidence admitted at trial, the Court finds that the Plaintiffs have proven that Philip Morris has violated the Consumer Fraud Act through the deceptive act of misrepresenting its Cambridge Lights and Marlboro Lights products as “Lights” and misrepresenting Marlboro Lights as “Lowered Tar and Nicotine”. The Court further finds that Philip Morris intended that the Class members in this case rely upon the deception created by these misrepresentations. These misrepresentations occurred in the course of conduct involving trade or commerce and caused actual damage to the Plaintiffs in the amount of $7,1005 Billion. This actual damage to the Plaintiffs was proximately caused by the misrepresentations of Philip Morris.

* * * *

157. The Court is mindful of the fact that in determining the amount of a punitive damages award, the Court should consider the nature and enormity of the wrong in addition to the Defendant's financial status and potential liability in other cases. The Court has considered these factors and determined that an award of three billion dollars ($3 billion) is appropriate under the facts and circumstances of this case. This entire sum of punitive damages is, hereby, awarded to the State of Illinois.

* * * *

IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

1. That the Plaintiffs in this Illinois Consumer Fraud Act Class Action shall recover from Defendant Philip Morris the sum of $7.1005 billion in compensatory damages.

2. That Philip Morris is ordered to pay punitive damages in the amount of three billion dollars ($3 billion). The entire amount of punitive damages is awarded to the State of Illinois.

* * * *

4. That the Court reserves continuing jurisdiction over this action to enforce all provisions of this judgment and to administer and distribute the judgment award among the Class members, based upon appropriate proof of Class membership and claims and to oversee the distribution of all unclaimed funds as provided in Par. 7 hereinbelow.

* * * *

7. That in the event there should remain unclaimed funds in the compensatory award rendered herein; then, under the Doctrine of Cy Pres, all said unclaimed funds, when so finally determined by this Court, hereby, are ordered then to be distributed to the following institutions through the Illinois Bar Foundation. Whereupon, the Illinois Bar Foundation is, hereby, appointed to receive, account, protect and so distribute said funds.

* * * *

## APPENDIX D

Excerpts from *In re Simon II Litigation*, 211 F.R.D. 86 (E.D.N.Y. 2002), *vac'd on other grounds*, 407 F.3d 125 (2d Cir. 2005).

[This opinion was issued before trial, granting plaintiffs' class certification motion and denying defendants' motion to dismiss.]

[211 F.R.D. at 114-131]

### III. Facts

* * * *

#### B. Industry Conspiracy

##### *1. Formation and Execution*

While the most persuasive evidence of defendants' wrongdoing pertains to years up to the early 1990s, evidence of its illegal activities continued well beyond any statute of limitations bar. This was particularly true with respect to misleading smokers about the favorable effects of smoking "light" cigarettes. Many smokers who switched to lighter tar and nicotine cigarettes changed their smoking habits to obtain the amount of nicotine they were used to. This resulted in deeper and more dangerous inhaling of cigarette smoke. The earlier illegal activities were evidence of later continuing conspiracies and misleading practices.

Plaintiffs allege, and can provide supporting evidence, that, beginning with a clandestine meeting in December 1953 at the Plaza Hotel in New York City among the presidents of Philip Morris, R.J. Reynolds, American Tobacco, Brown & Williamson, Lorillard and U.S. Tobacco, tobacco companies embarked on a systematic, half-century long scheme to (according to the complaint and evidence in the Blue Cross litigation):

> (a) stop competing with each other in making or developing less harmful cigarettes; (b) continue knowingly and willfully to engage in misrepresentations and deceptive acts by, among other things, denying knowledge that cigarettes caused disease and death and agreeing not to disseminate harmful information showing the destructive effects of nicotine and tobacco consumption; (c) shut down research efforts and suppress medical information that appeared to be adverse to the Tobacco Companies' position that tobacco was not harmful; (d) not compete with respect to making any claims relating to the relative health-superiority of specific tobacco products; and (e) to confuse the public about, and otherwise distort, whatever accurate information about the harmful effects of their products became known despite their [efforts to conceal such information.]"

Blue Cross Compl. ¶ 104; see also Falise v. American Tobacco Co., 94 F.Supp.2d 316, 329-33 (E.D.N.Y. 2000).

This meeting was called in response to a series of epidemiological and toxicological reports linking tobacco consumption with lung cancer. See also Kenneth R. Foster, David E. Bernstein, & Peter W. Huber, Phantom Risk: Scientific Inference and the Law 4 (1994) ("Epidemiologic studies by Doll and Hill (1952) conducted in the early 1950s strongly indicated that a pack-a-day smoker has a tenfold higher chance of developing lung cancer than a nonuser."); see generally David L. Faigman, David H. Kaye, Michael J. Saks, & Joseph Sanders, 2 Modern Scientific Evidence: The Law and Science of Expert Testimony §§ 27-1.0 to 28-2.4 (1997) (epidemiological studies and toxicological studies); Linda A. Bailey, Leon Gordis and Michael Green, Reference Guide on Epidemiology, in Federal Judicial Ctr., Reference Manual on Scientific Evidence 121 (1994) (hereinafter Reference Manual 1994); Bernard D. Goldstein and Mary Sue Henifin, Reference Guide on Toxicology, in Reference Manual 1994, supra, at 181. These studies threatened dramatic reduction in tobacco product sales and industry stock prices.

To carry out their conspiracy to mislead as to health risks of smoking, Philip Morris, R.J. Reynolds, Brown & Williamson, American Tobacco, Lorillard and U.S. Tobacco — with the assistance of the New York-based public relations firm of Hill and Knowlton — formed the Tobacco Industry Research Committee ("TIRC") in January 1954. Renamed the Council for Tobacco Research ("CTR") in 1964 when Liggett became a member, it was designed and operated to create the false impression that defendants were carrying out "objective, independent, and unbiased" research into the health effects of tobacco consumption, all the while actually "conduct[ing] a campaign of deceit, misrepresentation and misinformation . . . about the [real] health risks of smoking."

In support of their claims that the TIRC, and later the CTR, were integral to the alleged conspiracy to deceive the public, plaintiffs in other trials relied heavily on the "Frank Statement to Cigarette Smokers," a joint statement by five of the tobacco manufacturers. It was published in newspapers in virtually every city with a population of 50,000 or more, reaching more than 43 million Americans out of a population at the time of approximately 150 million. Signed by the presidents of the defendant tobacco manufacturers, it denied that cigarette smoking was hazardous to health and promised that the tobacco industry would conduct independent research to address questions surrounding smoking and disease. It explicitly announced that:

- Recent reports on experiments with mice have given wide publicity to a theory that cigarette smoking is in some way linked with lung cancer in human beings. Although conducted by doctors of professional standing these experiments are not regarded as conclusive in the field of cancer research.

- [T]here is no proof that cigarette smoking is one of the causes of lung cancer.

- [Tobacco companies] always have and always will cooperate closely with those whose task it is to safeguard the public health.

- [Tobacco companies are] pledging aid and assistance to the research effort into all phases of tobacco [product] use and health.

- For this purpose [tobacco companies are] establishing a joint industry group . . . . This group will be known as TOBACCO INDUSTRY RESEARCH COMMITTEE." (capital letters in original).

- In charge of the research activities of the Committee will be a scientist of unimpeachable integrity and national repute. In addition there will be an Advisory Board of scientists disinterested in the cigarette industry.

It is plaintiffs' contention, supported by evidence, that tobacco companies intended the public to rely upon the reports, research, and communications of the TIRC — and the companies generally — in assessing the dangers of tobacco use. As support for their allegation that the TIRC was never intended as the objective research council advertised, plaintiffs have relied on disclosures in internal documents such as the following:

- [TIRC] was set up as an industry shield in 1954. That was the year statistical accusations relating smoking to diseases were leveled at the Industry; litigation began; and the Wynder/Graham reports were issued. [TIRC] has helped out legal counsel by giving advice and technical information, which was needed at trials . . . . [T]he public relations value of [TIRC] must be considered and continued. . . . It is very important the industry continue to spend their [sic] dollars on research to show that we don't agree that the case against smoking is closed.;

- Historically, the joint industry funded smoking and health research programs have not been selected against specific scientific goals, but rather for various purposes such as public relations, political relations, position for litigation, etc. . . . In general, these programs have provided some buffer to public and political attack of the industry, as well as background for litigious [sic] strategy.;

- To date, the TIRC program has carried its fair share of the public relations load in providing materials to stamp out brush fires as they arose. While effective in the past, this whole approach requires both revision and expansion. The public relations program . . . was like the early symptoms of diabetes — certain dietary controls kept public opinion reasonably healthy. When some new symptom appeared, a shot of insulin in the way of a news release . . . kept the patient going.;

and

- For nearly twenty years, this industry has employed a single strategy to defend itself on three major fronts — litigation, politics, and public opinion. While the strategy was brilliantly conceived and executed over the years helping us win important battles, it is only fair to say that it is not — nor was it intended to be — a vehicle for victory. On the contrary, it has always been a holding strategy, consisting of creating doubt about the health charge without actually denying it.

To complement the fraudulent efforts of the TIRC and CTR, defendants in 1958 formed The Tobacco Institute ("TI") — a New York non-profit corporation that operated in New York and Washington, D.C. — as a lobbying arm for the industry. In 1969, U.S. Tobacco, the largest manufacturer of smokeless tobacco products in the United States, formed a third organization, The Smokeless Tobacco Council, Inc. ("STC"), as a propaganda and lobbying agent. Though ostensibly focused on protecting the interests of smokeless tobacco manufacturers, plaintiffs allege, with supporting evidence, that STC operated in conjunction with the tobacco industry generally, receiving financial support from Brown & Williamson, Lorillard and R.J. Reynolds.

When significant medical research indicated a statistical relationship between smoking and cancer in the early 1940s and 1950s, defendants embarked on a campaign to discredit this research and reassure the public that their products were safe. Defendants recognized that the publication in the early 1950s of retrospective epidemiological studies showing a link between smoking and lung cancer, as well as mouse skin painting studies that confirmed the results of earlier research, threatened cigarette sales and tobacco stock prices. See generally David L. Faigman, David H. Kaye, Michael J. Saks, & Joseph Sanders, 2 Modern Scientific Evidence: The Law and Science of Expert Testimony §§ 27-1.0 to 28-2.4 (1997) (epidemiological studies and toxicological studies); Michael D. Green, D. Michal Freedman, & Leon Gordis, Reference

Guide on Epidemiology, in Federal Judicial Ctr., Reference Manual 333 (2000); Bernard D. Goldstein and Mary Sue Henifin, Reference Guide on Toxicology, in Reference Manual 1994 at 181. Documents prepared by Hill & Knowlton, a representative of the tobacco industry, reveal:

> As another indication of how serious the problem is, the officials stated that salesmen in the industry are frantically alarmed and that the decline in tobacco stocks on the stock market has caused grave concern . . .
>
> This is, of course, the most challenging problem our organization has ever faced – and perhaps the most challenging problem that ever faced a great industry, one with annual sales of almost 5 billions [sic] at retail, and with economic roots that reach clear back to the farm.

To meet the "grave nature" of this threat, the evidence suggests, defendants developed a joint plan to rebut the mounting proof indicating that cigarettes were hazardous and to reassure the American public that the defendants would assume responsibility for bona fide research to determine whether smoking was dangerous to health:

> The underlying purpose of any activity at this stage should be reassurance of the public through wider communication of facts to the public. It is important that the public recognize the existence of weighty scientific views which hold there is no proof that smoking causes cancer.

Statements of defendants' good faith were belied by internal documents from the defendants' own scientists suggesting that they possessed significant proof of the causal relationship between smoking and disease, contradicting their denials. The incongruity between defendants' public statements and internal documents lasted from the 1950s into the late 1990s.

*2. Public statements from the 1950s to the present*

The evidence supports the inference that in public speeches, press releases, stockholder reports, television interviews, scientific studies, and letters to consumers and potential smokers,

the defendants consistently denied the causal relationship between smoking and disease and argued to the public that more research was needed before a finding of danger was justified. In May 1957, George Weissman, vice president of Philip Morris, stated:

> Being as close to the picture as we are, we know that most of the attack is a lot of sound and fury. Without rehashing the arguments I'll merely assert that there's not one shred of conclusive evidence to support the link between cigarette smoking and lung cancer, certainly a lot less than the evidence concerning the inhalation of exhaust fumes from the automobiles driven around New York City and the smog fumes in Los Angeles.

The Tobacco Information Committee, an arm of the TIRC, issued bi-monthly newsletters and press-releases to doctors, public health officials and members of the public. Early resulting publicity by tobacco companies in the 1950s and 1960s included statements that cast doubt on ties between smoking and cancer. Statements included: "Six experts state doubts on smoking-cancer theory" (1957); "Study suggests that bronchitis may be the prime factor in lung cancer" (1958); "Many Scientific Reports Show Uncertainties, Doubts About Causation of Lung Cancer" (November-December 1959); "Smoker's Personality Key To Cancer" (October 1960); "Lung Cancer Rare in Bald Men" (March-April 1964); "Genetic Factors Affect Heart, Lung Syndromes. Smoking Is Probably Not Associated With Coronary Disease." (Winter 1967-68).

Deliberately misleading materials promulgated by tobacco companies appeared all over the country in various forms. In a 1964 press release, George Allen on behalf of the defendants stated:

> If there is something in tobacco that is causally related to cancer or any other disease, the tobacco industry wants to find out, what it is and the sooner the better . . .
>
> Research to date has not established whether smoking is or is not causally involved in such diseases as lung cancer and heart disease, despite efforts to make

> it seem otherwise. The matter remains an open question – for resolution by scientists.

In 1969, the American Tobacco Company mailed to more than 140,000 of its share holders a booklet entitled "The Cigarette Controversy." The accompanying press release concluded:

> Despite the volume and virulence of anti tobacco propaganda, the cold fact remains that no clinical or biological evidence has been produced which demonstrates how cigarettes relate to cancer or any other disease in human beings.

In 1969, representatives of the defendants published "The Cigarette Controversy Eight Questions and Answers," which stated in part:

> For many adults, cigarette smoking is one of life's pleasures. Does it cause a difference – even death. No one knows.
>
> The case against smoking is based almost entirely on inferences drawn from statistics and no causal relationship has actually been established. Many respected scientists find that cigarette smoking has not been shown to cause any human disease.
>
> From these developments have come many public warnings:
>
> "Don't smoke." "Stop smoking." A concerned public needs the truth about smoking and health. This requires that both sides of the controversy must be known. Statistics are not enough. If smoking does cause disease, why has it not been proved, after 15 years of intensive research, how this occurs?"
> . . .
> Does smoking cause disease? That question is still an open one.

That same year, representatives of Brown & Williamson stated in the advertising copy for "Project Truth:"

> Ten years ago, there was a cancer scare over the wax in milk cartons. And over using iodine to get a suntan. These theories are about as valid as the one that says toads cause warts.
>
> And they're about as valid as today's scare tactics surrounding cigarettes.

> Because no one has been able to produce conclusive proof that cigarette smoking causes cancer. Scientific, biological, clinical or any other kind.

According to an internal document produced from the files of defendant Liggett Group that discusses the defendants' response to the 1964 Surgeon General report critical of smoking, the approach of the tobacco industry was to speak on these issues in a united voice:

> It is considered to be of prime importance that the industry maintain a united front and that if one or more companies were to conduct themselves as a matter of self interest, particularly in advertising, obvious vulnerability would be the result.

Public pronouncements continued into the 1970s, 1980s, and 1990s. In anticipation of the 1979 Surgeon General Report on Smoking and Health, which defendants knew would be adverse to them, representatives of the defendants released, "Smoking and Health: The Continuing Controversy." The 168 page text included the following statements:

> Indeed, many scientists are becoming concerned that the preoccupation with smoking may be both unfounded and dangerous. Unfounded because evidence on many critical points is conflicting. Dangerous because it diverts attention from other suspected hazards. . .
>
> Scientists have not proven that cigarette smoke or any of the thousands of constituents as found in cigarette smoke cause human disease. . . .

Examples of such post 1980 denials also included statements widely disseminated through television, conferences, and letter campaigns. Among them are the following material submitted in the Blue Cross case:

- On October 20, 1983, Tobacco Institute spokesperson, Anne Browder, referring to smoking causation, told a national audience on the ABC program "20/20": "The case is still open. The jury has not come in."

- The next year, the Tobacco Institute published a pamphlet, entitled, "The Cigarette Controversy: Why More Research Is Needed," which stated: There is a cigarette controversy. The causal theory – that cigarette smoking causes or is the cause of the various diseases with which it is reported to be related statistically –

is just that, a theory."

- On May 16, 1988, the Tobacco Institute published a press release titled, "Claims That Cigarettes Are Addictive Contradict Common Sense," which stated: Smoking is a truly personal choice which can be stopped if and when a person decides to do so."

- In a January 11, 1989 interview on the ABC program, "Good Morning America," Tobacco Institute representative Brennan Dawson stated the following on behalf of the tobacco industry: "[T]he causative relationship has not been established . . . I can't allow the claim that smoking is addictive to go unchallenged. . . . It's a matter of willpower."

- Walker Merryman, Vice President of Tobacco Institute, wrote the following in an article published on April 27, 1989, in the Washington Times: "The difference between cigarette smoking and true addictions to hard drugs is stark and compelling."

- In 1992, Philip Morris published a pamphlet entitled, "Tobacco Issues and Answers," that stated: Those who term smoking an addiction do so for ideological, not scientific reasons."

- On April 15, 1994, the day after its and other CEOs from the industry testified before Congress that smoking was not addictive, Philip Morris placed an advertisement in the New York Times that stated: "Fact: Philip Morris does not believe smoking is addictive."

Letters were sent to consumers all across the country, including many New York residents. Articles like the "Continuing Controversy" written in the 1970s denying causal connection between smoking and cancer were re-circulated in mailings after 1980. Letters included the following statements:

- Despite all the research going on, medical science has not found any conclusive evidence that any element in cigarettes, tobacco, or tobacco smoke causes human disease.

- We firmly believe that cigarettes have been unfairly blamed as a cause of human disease.

- With the numerous attacks being made on smoking, it is indeed refreshing to read

> a letter such as yours and to be reassured that not everyone has accepted without question the adverse publicity the tobacco industry has received. . . Throughout the years, the public has received a largely one-sided view of the questions that have arisen about tobacco . . . Through a series of messages appearing in national newspapers and magazines, we are attempting to provide our side of such public issues as . . . passive smoking, smoking courtesy and smoking and health.

– [I]n the absence of the identification of the processes or mechanisms involved in cancer causation, together with experimental animal evidence which raises questions regarding causation, we believe that scientific proof that cigarette smoking causes chronic diseases in humans is still lacking.

Communications reached elementary school teachers and principals. A 1990 form letter responding to inquiries from fifth grade students at a New York elementary school reads in relevant part:

> [T]he simple and unfortunate fact is that scientists do not know the cause or causes of the chronic diseases reported to be associated with smoking. The answers to many unanswered smoking and health questions – and the fundamental causes of the diseases often statistically associated with smoking – we believe can only be determined through much more scientific research.

These communications were part of a general policy for the 1980s and beyond. A summary of plans in conference titled “Marketing in the 80's” stated “Overall marketing policy will be such that we maintain faith and confidence in the smoking habit, whether brand choice is traditional or not in particular markets. This means that B.A.T. [a British holding company] will not remain on the defensive, by simply reacting to alleged ‘health’ hazards and related competitive challenges: instead we shall actively seek out all worthwhile prospects for brand and product reassurance in marketing throughout the world.”

### *3. Knowledge from the 1950s to the present*

Although the representatives of the defendants continued to release public statements and

reports suggesting that smoking neither caused adverse health effects nor was addictive – as well as to finance purported research to support these inappropriate claims – evidence demonstrated that defendants knew the contrary to be true: that smoking is both lethal and addictive.

Internal documents from defendants indicate that through independent company research and the sharing of this research through the TIRC and CTR, each of the major tobacco product manufacturers was aware that tobacco contributed to lung cancer. For example, a 1956 confidential memorandum from a Philip Morris Vice President of Research and Development to top executives at the company regarding the advantages of "ventilated cigarettes" stated: "Decreased carbon monoxide and nicotine are related to decreased harm to the circulatory system as a result of smoking .... [D]ecreased irritation is desirable ... as a partial elimination of a potential cancer hazard."

Similarly, a British American Tobacco Company (BATCo) document produced in 1958 following a series of meetings between BATCo representatives and twenty American scientists and researchers--including at least nine representatives of the tobacco companies and the Scientific Advisory Board of TIRC--stated that all of the tobacco company researchers with whom they met in the United States (and all but one of the outside people) "believed that smoking causes lung cancer" and noted that there was "general acceptance [among the group] that the most likely means of causation is that tobacco smoke contains carcinogenic substances present in sufficient quantity to promote lung cancer when acting for a long time in a sensitive individual." That same year, a Philip Morris Vice President of Research, who later joined its Board of Directors, stated in a confidential internal memorandum that "the evidence . . . is building up that heavy cigarette smoking contributes to lung cancer either alone or in association

with physical and physiological factors." A 1963 confidential internal memorandum from Liggett's research consulting firm admitted: "Basically we accept the inference of a causal relationship between the chemical properties of ingested tobacco smoke and the development of carcinoma . . .”

In addition to knowing that smoking is linked to lung cancer, it can be concluded that defendants were aware of other major deleterious health effects caused by smoking, including bronchitis, emphysema, and cardiovascular disease. Supporting this contention, plaintiff in Blue Cross introduced among other documents the following excerpts from internal company materials:

- A 1963 confidential memorandum to Philip Morris's President and CEO describes components of cigarette smoke as "known carcinogens" and states: "Irritation problems are now receiving greater attention because of the general medical belief that irritation leads to chronic bronchitis and emphysema. Emphysema is often fatal either directly or through other respiratory complications. A number of experts have predicted that the cigarette industry ultimately may be in greater trouble in this area than in the lung cancer field."

- An internal memo produced for a B.A.T. Group Conference (e.g., BATCo, Brown & Williamson, and other subsidiaries of B.A.T. Industries) in November 1970 that states "nicotine may be implicated in the aetiology of cardiovascular disease."

Defendants understood at least for the past four decades that many smokers continue to smoke not by choice, but because of nicotine addiction. The evidence includes confidential BATCo documents related to BATCo's "Project Hippo" that indicate that at least as early as 1962 defendants were aware of the physiological and pharmacological effects of nicotine. Copies of Project Hippo reports were circulated to TIRC, BATCo, Brown & Williamson, and R.J. Reynolds.

A 1963 memorandum written by Addison Yeaman, General Counsel at Brown &

Williamson, concludes by stating that the company is "in the business of selling nicotine, an addictive drug." Similarly, a 1978 internal Brown & Williamson memorandum acknowledges that "very few consumers are aware of the effects of nicotine, i.e., its addictive nature and that nicotine is a poison." Evidence that tobacco companies were aware of nicotine's addictive properties is incorporated in a 1972 report by Philip Morris presented at a CTR conference; it states:

- [N]icotine is the active constituent of cigarette smoke;
- Without nicotine . . . there would be no smoking.;
- Why then is there not a market for nicotine per se, to be eaten, sucked, drunk, injected, inserted or inhaled as a pure aerosol? The answer, and I feel quite strongly about this, is that the cigarette is in fact among the most awe-inspiring examples of the ingenuity of man.;
- The cigarette should be conceived not as a product but as a package. The product is nicotine . . .;
- Think of the cigarette pack as a storage container for a day's supply of nicotine ....;
- Think of the cigarette as a dispenser for a dose unit of nicotine.

Other internal memoranda suggest that the defendants knew that nicotine addiction could lead smokers of low-tar cigarettes to compensate, that is take longer and deeper puffs of cigarettes or to smoke more until the health benefits of these marketed products became negligible. A 1976 Lorillard memorandum stated:

> The consensus of opinion derived from a review of the literature on the subject indicates the most probable reason for the addictive properties of smoke is nicotine. Indications are that the smoker adjusts his smoking habits to satisfy the desire for nicotine, either by frequent or large puffs on the cigarette, or smoking a large number of cigarettes.

Another inside document says, “given a cigarette that delivers less nicotine than he desires, the

smoker will subconsciously adjust his puff volume and frequency, so as to obtain and maintain his per hour, per day requirement for nicotine . . . .”

All the while the TIRC, CTR, and TI continued to release public statements and reports indicating smoking neither caused adverse health effects nor was addictive — as well as to finance research to support these claims — defendants in fact knew that the contrary was true: that smoking is both lethal and addictive, that it contributed not only to lung cancer but to harm to the circulatory system.

*4. Coverup*

Despite knowing that tobacco use is injurious and addictive, evidence suggests that defendants — in part through the efforts of the TIRC, CTR, TI and STI — intentionally engaged in a campaign of deceit, misrepresentation and misinformation directed at misleading the public about the health risks and addictiveness of smoking.

Efforts undertaken by defendants to hide this information include what is suggested as the termination and destruction of Philip Morris research regarding nicotine’s addictive properties. For example, in the early 1980s researchers working at a Philip Morris laboratory in Richmond confirmed that nicotine demonstrated addictive qualities and that the laboratory research animals self-administered the substance by pressing levers to obtain nicotine. Less than a year after a briefing to top Philip Morris executives on these findings by the director of the research, Dr. Victor J. DeNoble, Philip Morris representatives instructed the researchers to stop work, to kill all the laboratory animals, to turn in their security badges, and to withdraw a paper on the addictive qualities of nicotine that had been accepted for publication by a scientific journal.

Philip Morris then closed the laboratory, and discharged the researchers, requiring them to agree to remain quiet about their work with the sanction of legal action if they published their findings.

Plaintiffs can also point to confidential research conducted by Brown & Williamson's British affiliate on behalf of Brown & Williamson. In the course of this research, Brown & Williamson suppressed confidential findings of a "causal relation" between ZEPHYR, Brown & Williamson's code name for cancer, and tobacco smoking.

As part of the central role the TIRC and CTR played in defendants' deceptive coverup, TIRC established a "Special Projects" division where research revealing the dangers and addictiveness of smoking was secreted from the public and concealed from discovery in litigation. A 1970 advertisement placed in newspapers around the nation by the TIRC at the direction of tobacco companies claimed that there was no known link between cigarettes and disease despite, according to the advertisement, decades of "totally independent research." A public statement in 1982 by Edward A. Horrigan, Jr., then Chairman of the Executive Committee of the TI, claimed:

> After three decades of investigation and millions of dollars invested by the government, the Tobacco Industry and private organizations, the smoking and health controversy remains unresolved. The net result of all of this effort has been that no causal link between smoking and disease has been established. That is not merely the opinion of Tobacco Industry executives. That is scientific fact readily available to anyone willing to make an objective, unemotional study of the existing evidence.

Defendants funded scientific studies to discredit scholarship demonstrating causation. Evidence at the Blue Cross trial also suggested that defendants never intended to fund and produce the objective research it had advertised. Internal documents such as the following acknowledged that research grants and studies sponsored by TIRC and CTR were intended to

reassure the public, driven by litigation, and designed to sow doubts about the hazards associated with smoking:

> It has been stated that CTR is a program to find out 'the truth about smoking and health.' What is truth to one is false to another. CTR and the Industry have publicly and frequently denied what others find as "truth." Let's face it. We are interested in evidence which we believe denies the allegation that cigarette smoking causes disease. . . [A]ll caveats and platitudes aside, we must assume that CTR exists for the good of the [tobacco] industry.

Defendants deliberately refrained from conducting in-house biological research demonstrating the causal relationship between smoking of commercially produced cigarettes and cancer. They agreed to refrain from conducting biological testing, of its products as marketed, on animals, allegedly in order to suppress research that was expected to lead to scientific confirmation that cigarettes being smoked by the public were hazardous. It included internal memoranda which referred to a "gentlemen's agreement" not to conduct animal laboratory experiments. An internal document, written by Associate Director of Scientific Issues for R.J. Reynolds, Frank G. Colby, dated December 9, 1981, states:

> Information was obtained that Philip Morris U.S.A. does not live up to the alleged "gentlemen's agreement" of not having animal laboratory facilities on their premises in this country.

Evidence also showed the tobacco industry purposefully concealed research in the United States. As one industry document stated, "[t]he burden of proof has shifted. It is no longer up to the scientists to prove that cigarettes cause lung cancer. It is the duty of all concerned to prove that they do not." (internal quotations omitted). Other documents reveal members of the industry diverted correspondence through lawyers that contained "contentious information" – i.e., adverse health information sought to be covered up. There was a "mechanism for [] sending

scientific information to B&W. In principle it will mean [] mailing contentious information to a legal man called Maddox ... with a covering letter ... saying that Millbank has asked that [Maddox] receive it."

Documents directed subordinates to "root out" adverse information that would generate negative implications and to produce information that would encourage consumers to continue to smoke. One reads: "RD&E is interested in information pertaining to the role of nicotine in the smoker's subjective perception of smoke quality. If the reports stick to research data, the reports would be interesting. However, if the reports include discussions of pharmacological effects of nicotine, the information will not be interesting and would be helpful to the plaintiff. RD&E will begin receiving reports from this activity and be prepared to inform BAT to cease sending the data to B&W if the science is not interesting."

Some reports were to be withheld from the United States Surgeon General as well as from TIRC members if one of the defendants was disturbed at the report's "implications [regarding] cardiovascular disorders." "TIRC agreed to withhold disclosure [of] Battelle Reports to TIRC members or SAB until further notice ... [and submission of] Battelle or Griffith Developments to [the] Surgeon General [is] undesirable and ... continuance of Battelle work [is] useful but [the company is] disturbed at its implications [regarding] cardiovascular disorders." Information pertaining to the "carcinogenicity" of tobacco smoke was vetted from reports.

### *5. Other Deceptive Conduct*

In addition to covering up the health risks and addictiveness of smoking, defendants are alleged to have intentionally enhanced nicotine concentration in cigarettes to increase smoker-

addiction. They misled the public to believe smoke from “lighter” cigarettes contained reduced levels of tar and nicotine relative to that released by conventional cigarettes, and suppressed research into less harmful cigarettes. By now almost all smokers have switched to “lighter” cigarettes on the premise that they are not substantially dangerous to health, when in fact defendants withheld their knowledge that such cigarettes as actually used were lethal.

Supporting their contention that tobacco companies manipulated nicotine levels, the plaintiffs can identify various patents filed by defendants that provide the technological capability to manipulate nicotine levels in cigarettes “to an exacting degree.” Examples include the following:

- A Philip Morris patent application for an invention that “permits the release . . . in controlled amounts and when desired, of nicotine in tobacco smoke.”;

- Another Philip Morris patent application explaining that the proposed invention is “particularly useful for the maintenance of the proper amount of nicotine in tobacco smoke” and noting that “previous efforts have been made to add nicotine to Tobacco Products when the nicotine level in the tobacco was undesirably low.”; and

- A 1991 R.J. Reynolds patent application stating that “processed tobaccos can be manufactured under conditions suitable to provide products having various nicotine levels.”

In addition to covering up the health risks and addictiveness of smoking, evidence can be introduced to show that defendants misled the public into believing that smoke from "lighter" cigarettes, containing reduced levels of tar and nicotine relative to that released by conventional cigarettes, would result in substantially less danger. The defendants suppressed research into less harmful cigarettes allegedly as part of the cover-up of the continuing danger from low tar cigarettes.

Evidence can be used to demonstrate that defendants fraudulently promoted filtered and low-tar cigarettes as safer or healthier cigarettes than conventional ones. "Light" cigarettes, the evidence showed, often lacked significant health benefits over conventional cigarettes, and in many instances may have increased the risk of emphysema, heart disease, and other diseases caused by smoking. This is because of an effect called compensation: smokers of light cigarettes tend to smoke more, inhale more deeply, and hold the smoke in their lungs longer, in order to maximize their absorption of nicotine. A jury could find that any real health benefit was far less than defendants led the public to believe and that their conduct was particularly insidious and effective in misleading smokers.

One goal in designing new products was, plaintiff's evidence could show, to "intercept" quitters. As a 1978 Brown and Williamson internal memorandum put it: "Perhaps answers to another question 'How do people stop smoking?' could lend insight into the creation of new products. Having answers to this latter question, we might then design products to 'intercept' people who are trying to give up smoking." Another internal memorandum stated:

> All work in this area should be directed towards providing consumer reassurance about cigarettes and the smoking habit. This can be provided in different ways, for example, by claimed low deliveries, by the perception of low deliveries and by the perception of mildness. Furthermore, advertising for low delivery or traditional brands should be constructed in ways so as not to provoke anxiety about health but to alleviate it and enable the smoker to feel assured about the habit and confident in maintaining it over time.

Advertisements for low tar cigarettes had express or implied health messages. It was not seriously disputed at a prior trial that defendants failed to inform the public about their knowledge of the limited health benefits of low tar cigarettes and their knowledge of smoker compensation by a change in the smoker's habits.

The evidence in Blue Cross could be found to have demonstrated that a second reason to delay the development of "safer" cigarettes stemmed from a general fear by defendants that over-aggressive marketing of low-tar products would alert the public to the dangers of stronger cigarettes. For example, documents from B.A.T. Industries, the parent company of Brown and Williamson, revealed that in 1978 Chairman Sir Patrick Sheehy, warned its affiliates against attempting to develop truly safer products:

> I thought I should write to explain why it is that I cannot support your contention that we should give a higher priority to projects aimed at developing a 'safe' cigarette (as perceived by those who claim our product is unsafe), by either eliminating, or at least reducing to acceptable levels, all components claimed by our critics to be carcinogenic...
>
> [I]n attempting to develop a safe cigarette you are, by implication, in danger of being interpreted as accepting that the current product is 'unsafe' and this is not a position that I think we should take.

Documents illustrated that this practice of delaying attempts to improve cigarette safety could be traced back to the 1950s. For example, a 1953 Hill and Knowlton memorandum to defendants' representatives entitled "Some Things To Do" states:

> Develop some understanding with companies that, on this problem, none is going to seek a competitive advantage by inferring to its public that its product is less risky than others. No claims that special filters or toasting, or expert selection of tobacco, or extra length in the butt, or anything else, makes a brand any less likely to cause you-know-what. No "Play-Safe-with-Luckies" idea – or with Camels or with anything else.

The tactic of broad denials of knowledge of harm by the industry could be found to have been reflected in its research strategy. Evidence revealed that despite the continuing growth of each defendants' in-house research efforts, the defendants as a whole continued throughout the 1980s and 1990s to adhere to a "gentlemen's agreement" to avoid actual marketing of any

significant risk reducing innovation that would redound to one defendant's benefit. Potentially innovative risk reducing products were actually developed, but never, it might be argued, seriously marketed. Others were introduced but without much attention to the fact that they might reduce health risks.

Testimony through depositions confirmed that through defendants' misstatements and omissions, defendants were successful in influencing some people to purchase and smoke low tar cigarettes (rather than quitting) in reliance upon the supposed health benefit communicated by defendants. A jury could conclude that this strategy had a misleading "informational effect" on emerging markets of tobacco consumers. It could have misled more "health conscious" consumers to continue to smoke a product just about as dangerous as regular tar brands, while limiting the total information available to the public about the relative risks of smoking.

Plaintiffs can contend that tobacco companies knowingly designed so-called "light" products so that advertised tar and nicotine levels understate the amounts of tar and nicotine actually ingested by human smokers. It has already been noted that such design features include a technique called filter ventilation in which nearly invisible holes are drilled in the filter paper, or the filter paper is made more porous. Many smokers of advertised low-tar and nicotine cigarettes block the tiny, laser generated perforations in ventilated filters with their fingers or lips, thereby resulting in greater tar and nicotine yields to those smokers than those measured by the Federal Trade Commission's smoking testing machines.

It can be claimed by plaintiffs that tobacco companies knew that the ability to block ventilation holes allows smokers to 'compensate' for nicotine losses that would otherwise be caused by tar-reducing modifications. Tobacco companies allegedly studied smoker behavior in

order to design cigarettes that allow smokers to compensate for lower nicotine yields while appearing to deliver less nicotine in FTC tests. To support this contention, a research study presented at a 1974 BATCO conference concluded that "'whatever the characteristics of cigarettes as determined by smoking machines, the smoker adjusts his pattern [of smoke inhalation] to deliver his own nicotine requirements (about 0.8 mg. per cigarette).'"

Rather than actually develop a less-harmful cigarette, as light cigarettes were advertised to be, defendants may be shown to have conspired by way of a "gentlemen's agreement" to suppress independent research, development and marketing of such a cigarette. According to plaintiffs' theory, defendants recognized a difference between "health-oriented" cigarettes, which were never marketed on a wide basis, and "health-image" cigarettes, such as low-tar and low-nicotine products. The latter were arguably only a marketing tool to give the illusion of a safer product.

As plaintiffs may describe it, the situation among the six major tobacco manufacturers represented a dilemma: no company wanted a "safer" cigarette, but any company, by being the first to produce such a cigarette, stood to gain substantial market share. Lorillard's Director of Research and Development wrote to Lorillard's president in 1966 regarding the development of a safer cigarette: "if we fail to pursue this research and/or a competitor marketed a cigarette whose smoke condensate gives little tumorigenic response, . . . a significant sales loss could result." This is a variant of the classic prisoner's dilemma.

Production of such a "safer" cigarette by even one manufacturer would have represented an indictment of the whole industry, potentially unleashing litigation for earlier injuries and illnesses due to conventional cigarettes. As Jeffrey Wigand, a former Vice President for

Research and Development for Brown & Williamson testified at a prior trial, "'[a]ny research on a safer cigarette would clearly expose every other product as being unsafe and, therefore, present a liability issue in terms of any type of litigation.'"

Allegedly faced with the choice between abandoning the conspiracy and developing a less harmful cigarette on the one hand, or maintaining the conspiracy and avoiding potential liability for injuries resulting from conventional cigarettes on the other, the major tobacco manufacturers arguably opted to maintain the scheme, aided in part by the highly concentrated industry market structure. Such a conscious decision to trade-off decreased public injury from smoking for maintenance of its corporate profits could be inferred from a confidential internal Philip Morris memorandum regarding its decision not to market a less harmful cigarette:

> [A]fter much discussion we decided not to tell the physiological story [regarding the health effects and addictiveness of conventional cigarettes] which might have appealed to a health conscious segment of the market. The product as test marketed . . . was unacceptable to the public ignorant of its physiological superiority.

Plaintiffs may identify two additional areas of deceptive conduct central to the conspiracy: the target marketing of cigarettes and other tobacco products to children; and the intentional deflecting of tobacco-related healthcare costs to smokers and their health plan providers. Plaintiffs can contend that defendants — with the use of sophisticated marketing tools such as Joe Camel — "systematically targeted" youth to encourage them to purchase cigarettes in violation of various state laws, including New York's, in order to replace dying adult smokers. Support for this contention can come from a 1974 R.J. Reynolds marketing plan that highlighted as an "opportunity area" a plan to "increase our young adult franchise," with "young adults" described as including those children 14 to 17 years of age. This evidence was

excluded at the Blue Cross trial on grounds that it was too prejudicial under Rule 403 of the Federal Rules of Evidence, but it may have more salience in computing punitive damages.

Recent media reports suggest that tobacco companies also opposed marketing of drugs designed to help smokers stop smoking. See Kenneth Chang, Tobacco Industry Fought Drugs' Marketing, New York Times, August 14, 2002, at A17.

### C. Consumer Harm from Deceptive Practices

Evidence has been found to demonstrate that defendants knew such deceptive practices would cause – and that their practices did cause – plaintiffs' harm.

#### *1. Knowledge that Consumers Would Act Upon Deceptive Practices*

The tobacco industry can be charged with knowing that the consequences of prolonging the debate over the adverse effects of smoking would be to reassure addicted consumers in order to induce them to continue using their products. Documents substantiate this view of defendants' program designed to mislead and string along smokers. Proof includes such defendants' statements as follows:

- The CTR (then TIRC), was formed in the early 1950's in response to published reports linking cigarette smoking with various diseases. The primary purpose for the initial formation was a public relations one. . . . The CTR, with the help of others, has kept certain questions open when a large body of anti-tobacco scientists claimed the easy answers had been found.

- The long established policy of CTR, carried out through [the Scientific Advisory Board is to] . . . maintain the position that the existing evidence of a relationship between the use of tobacco and health is inadequate to justify research more closely related to tobacco; and . . . the study of the disease keeps constantly alive the argument that, until basic knowledge of the disease itself is further advanced,

it is scientifically inappropriate to devote the major effort to tobacco.

- The BAT objective is and should be to make the whole subject of smoking acceptable to the authorities and to the public at large since this is the real challenge facing the Industry. Not only . . . is [this] the right objective but . . . it is an achievable one.

A public relations campaign was suggested to "describe more or less truthfully the dramatic efforts" of Philip Morris to safeguard the public. The company also sought to take steps so that the public could be

> Assured that Parliament (Marlboro) would immediately bring them any tar and nicotine reducing innovations that were consistent with good smoking and that [Philip Morris] would do this no matter how much effort and expense were required. . . . [T]he attempt would be made to build an image of the brand as a brand that was made and sold by people who were genuinely concerned about the health of their customers and did not believe in taking chances with the health of their customers.

*2. Evidence that Misrepresentations Caused Consumers Harm*

Evidence in the form of documents, lay and expert testimony, and depositions may establish that plaintiffs will meet their burden of proving that defendants' deceptive practices caused them injury. A key question was whether plaintiffs' smoking behavior would have been different if defendants had been truthful rather than deceitful.

Expert witnesses in a prior trial testified that: (1) members of the American public underestimated the health risks of smoking at the time they started smoking and afterward; and (2) early public acknowledgment by the tobacco companies that they believed smoking causes lung cancer and other diseases would have led the American public not to start smoking, or to smoke less, or to quit smoking earlier.

* * * *

[211 F.R.D. at 135-138]

## IV. Procedural History

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### G. Tobacco Cases Nationwide

Nationwide, a large number of tobacco lawsuits have been brought. According to tobacco manufacturers, approximately 1500 lawsuits were pending in 2001. See Philip Morris Annual Report, 2001, at 50. Their presence is a factor which must be considered. Most litigation has resulted in a successful defense on legal grounds or because juries found for the defendants.

(Note that in some instances in this section the court cites to some of the extensive information on tobacco litigation available online through the Tobacco Control Resource Center at Northeastern University School of Law, http://www.tobacco.neu.edu. Citation to this web site is for informational purposes, since consolidated information is otherwise difficult to locate; it is not an endorsement of the positions that organization has taken in lawsuits.)

Among the prominent suits are the following:

State Settlements. On November 20, 1998, forty-six states settled with the five biggest cigarette makers, in which the latter agreed to pay $206 billion over twenty-five years. The participating companies include: Philip Morris, R.J. Reynolds, Lorillard Tobacco, and Brown & Williamson. The fifth largest cigarette maker, Liggett & Myers, was not a party to the negotiations but participated in the agreement. The abstaining states were: Florida, Minnesota, Mississippi, and Texas. These states had previously settled with the companies for a total of $40

billion to be paid over twenty-five years. Except for Minnesota, which settled while the case was being tried before it was to go to the jury, the states settled prior to the start of trials. See 46 States Agree to $206 Billion Tobacco Settlement, Liability Week, Vol. 13, No. 44, Nov. 23, 1998 available at 1998 WL 12498764. Materials made available from discovery in the Minnesota case and released by Congress form a large part of the evidence supporting Part III, Facts, supra. See Emily Heller, Documents Led to Tobacco Win, National L.J., April 15, 2002, at B10.

The settlement replaced an earlier proposed (1997) more comprehensive agreement calling for the companies to pay $368.5 billion over twenty-five years; that proposal required Federal participation. Id. Congress failed to act, preventing what might have resulted in a settlement ending all tobacco litigation. See generally Brown & Williamson Tobacco Corp., et al. v. Stanley M. Chesley, et al., No. 117050/01, N.Y. Sup. Ct. (N.Y. Co.), Sept. 25, 2002 (background of settlement in a litigation to reduce excessive legal fees). The concord with the states obligated the companies to pay $13 billion upfront through 2003, and $9 billion in each subsequent successive year. Pete du Pont, Tobacco Lawyers Target HMOs, and Kids Still Smoke, National Center for Policy Analysis, available at http://www.ncpa.org/~ncpa/oped/dupont/dup121800.html.

The understanding also contained guidelines targeted at the companies' sales practices. First, sales and distribution of apparel and merchandise with cigarette brand logos was prohibited. Id. This includes extended restrictions on outdoor and stadium/arena advertising. Second, complimentary packs are now only permissible in adult establishments. Third, pack size was capped. Fourth, in order to prevent children-targeting in advertising, the use of cartoon characters in advertisements was prohibited. Id. Fifth, the companies agreed to provide $50

million to an enforcement fund for states to pursue violators of the settlement. Finally, the companies agreed to contribute $1.5 billion to a public education fund over five years and to pay $250 million for a teen smoking reduction program. Liability Week, supra, at *2.

Some of the states have been criticized for their unwillingness to do more in furtherance of the settlement's goal to reduce smoking. Collectively, they have earmarked $1.45 billion (less than one percent of the total settlement) as their contribution to a five year educational campaign. Alicia Lukachko, Philip Morris Antismoking Campaign and Tobacco Settlement, The Wall Street Journal, April 22, 1999, available at http://www.acsh.org/press/editorials/antismokcam042299.html. Although state leaders declared that the money would be spent on tobacco prevention and health priorities, there were no such express obligation on the states in the settlement. See Liz Chandler, N.C. Spends Settlement on Tobacco, Not Health, The Charlotte Observer, June 23, 2002, available at http://www.charlotte.com/mld/charlotte/news/3526693.htm. According to the Government Accounting Office, states are collectively using less than a tenth of the settlement money on anti-smoking programs. Dave Barry, In War on Tobacco, Money Goes Up in Smoke, The Miami Herald, Sep. 15, 2002, available at http://www.miami.com/mld/miamiherald/living/columnists/dave_barry/4069054.htm. The majority of the money is going toward projects quite unrelated to discouraging smoking, such as highways, bridges, museums, and subsidization of tobacco growers. Id.; Chandler, supra. Meanwhile, the most recent statistics from the Center for Disease Control estimate that the percentage of eight, tenth, and twelfth grade students who smoke daily has not changed much in the last twenty years.

United States v. Philip Morris Inc. et al. The federal government sued Philip Morris and ten other major tobacco companies, seeking both monetary and injunctive relief. United States v. Philip Morris Inc. et al.,116 F.Supp.2d 131 (D. D.C. 2000). The government asserted four claims pursuant to three federal statutes. The first, the Medical Care Recovery Act ("MCRA") authorizes the government to recover costs expended on behalf of victims of tortious conduct. The second, the Medicare Secondary Payer provisions ("MSP") permits the government to obtain reimbursement for certain Medicare expenditures when another entity is primarily responsible for those expenditures. The governments remaining two claims alleged RICO violations. The government's MCRA and MSP claims were dismissed on defendants' motion because the MCRA claim was contrary to statutory design and the MSP claim was unsupported by the evidence. Id. RICO counts remain active and the subject of intense discovery and motion practice. The government was permitted to pursue its request for disgorgement of all defendants' profits from 1953 until the present.

Bullock v. Philip Morris. In October 2002, a jury awarded $28 billion in punitive damages to former smoker plaintiff Bullock, as well as close to $1 million in compensatory damages. The plaintiff argued theories of conspiracy and fraudulent concealment. See Gary Gentile, California Jury Awards Former Smoker $28 Billion in Punitive Damages, Brooklyn Daily Eagle (Associated Press), October 7, 2002, at 2. Defendants are likely to file post-verdict motions and appeal any award upheld by the trial court.

Burton v. R.J. Reynolds Co., 208 F.Supp.2d 1187 (D.Kan 2002). In February 2002, a federal jury in Kansas City awarded compensatory damages of $198,400 to plaintiff Burton, who lost his legs to peripheral vascular disease as a result of smoking. Burton, 208 F.Supp.2d 1187;

see also Court Orders Tobacco Firms to Pay Amputee, Wall Street Journal, Feb. 25, 2002. After a hearing on punitive damages, held on May 16, 2002, the judge then awarded plaintiff $15 million in punitive damages. See Burton v. R.J. Reynolds Tobacco Co., 205 F.Supp.2d 1253; see also Dan Margolies, Punitive Damages Urged in Kansas City Smoker's Verdict Against R.J. Reynolds, Kansas City Star, May 17, 2002; Burton, 208 F.Supp.2d at 1214 (ordering parties to appear for punitive damage hearing). Among the theories plaintiff asserted were "fraud and misrepresentation, negligence, strict liability, breach of express warranty, conspiracy and violation of consumer protection statutes." Burton v. Reynolds Tobacco Co., 884 F.Supp. 1515, 1517–18 (D.Kan. 1995). The judge imposed exceptional punitive damages, exceeding the normal cap permitted under state law, because defendant's behavior was judged "particularly nefarious." Burton, 205 F.Supp.2d at 1256.

Henley v. Philip Morris Inc., 113 Cal. Rptr.2d 494 (Cal. App. 1 Dist 2001). A California jury awarded $1.5 million in compensatory damages and $50 million in punitive damages, which was later reduced to $25 million by the judge; that reduced verdict was upheld by the appellate court. Id.; see also Myron Levin, $26.5-Million Award Is Upheld in Smoking Case, Los Angeles Times, November 8, 2001. The Henley jury found defendants liable for product liability, failure to warn, negligence, fraud, false promise, warranty breach, and conspiracy. See generally http://www.tobacco.neu.edu/upcoming.html (background information on several cases including Henley).

Schwarz v. Philip Morris, Circuit Court of the State of Oregon Docket # 0002-01376 (2002). The jury awarded $168,000 in compensatory damages and $150 million in punitive damages. Plaintiff claimed the defendants mislead consumers by suggesting that low tar

cigarettes were less hazardous. See Oregon Smoker's Estate wins Second largest award, The Seattle Times, March 23, 2002. The punitive damages were later reduced to $100 million by the court. See Bloomberg News, Judge Cuts Damages against Philip Morris, Los Angeles Times, May 11, 2002.

Boeken v. Philip Morris, 2001 WL 1894403 (Cal. Super. 2001). A Los Angeles jury found the defendant liable for plaintiff's lung cancer. Plaintiff claimed that the company portrayed smoking as "cool" but hid the dangers. Boeken was awarded $5.5 million in compensatory damages and $3 billion in punitive damages. The court reduced the punitive award to $100 million. See The Associated Press, Judge: $3B Smoking Verdict Excessive, Newsday (New York, NY), August 10, 2001.

Engle, et al. v. RJ Reynolds et al., Florida 2000. The jury awarded the Florida class $144 billion in punitive damages. Pending appeal, in order to avoid a prohibitive appeal bond, the tobacco companies stipulated to pay at least $700,000,000 even if they win on appeal. See Myron Levin, 3 Tobacco Firms to Forfeit Funds, Los Angeles Times, May 8, 2001. Compensatory awards will be made in mini-trials.

Whiteley et al. v. Philip Morris Inc., Sup. Ct. of CA, SF Case No 303184 (2000). A San Francisco jury found the defendants liable for negligence and fraud. The plaintiff was awarded $1.72 million in compensatory damages and $20 million in punitive damages. Plaintiff won the case, despite having started smoking after tobacco companies were required to put warning labels on cigarette packs. See Gina Piccalo, Cancer Patient Savors Victory in Tobacco Suit, Los Angeles Times, April 13, 2000.

Connor v. Lorillard et al., No 97-210501/CX1634 (Md Cir Court 1999). Plaintiff was

awarded $2.2 million in damages. The jury found the defendants liable for the mesothelioma the plaintiff suffered as a result of the asbestos in the filters of a particular brand of cigarettes made by defendants. See Myron Levin, Smoker wins $2.2 million in asbestos case, Los Angeles Times, May 1, 1999.

Joann Williams-Branch v. Philip Morris, No 9705-03959 Circuit Court for the County of Maryland (Portland 1999). A Portland jury awarded the plaintiff $81 million in punitive damages for wrongful death caused by lung cancer. See Saundra Torry, Record $81 million award in Tobacco Case; Oregon jury orders Philip Morris to pay high punitive damages to Smoker's family, The Washington Post, March 31, 1999. The trial judge lowered the punitive damages to $32 million, but the Court of Appeals of the State of Oregon reversed, remanding with instructions to reinstate the original punitive damage award. See Williams v. Philip Morris Inc. et al., 9705-03957; A106791 (Or. Ct. App. 2002).

Kenyon v. RJ Reynolds, Florida 2001. A Tampa jury found the defendant liable for $165,000 compensatory damages. No punitive damages were awarded. The jury found that the defendant had "marketed a defectively designed product by selling Camel and Salem brand cigarettes." http://www.tobacco.neu.edu/PR/backgrounders/kenyon_verdict.htm

McCabe v. British American Tobacco, Australia 2002. A Melbourne jury awarded the plaintiff $700,000 Australian in damages. The jury did not consider liability because the judge found that the company had purposefully destroyed documents necessary for a proper trial. McCabe was the first Australian smoker to win a lawsuit against a global cigarette company. See Reuters, World Business Brief: Australia: Verdict for Smoker, New York Times, April 12, 2002.

Hundreds of millions of dollars have been awarded in these and other tobacco lawsuits.

One effect of this large number of scattered suits in different courts across the country is to create a possibility of disparate verdicts, or of one or more large awards exhausting funds available to plaintiffs through constitutionally limited punitive damages.

### H. Difficulty in Prosecuting Tobacco Lawsuits

Notwithstanding the lawsuits sampled above, some of which have resulted in recovery against tobacco companies, tobacco lawsuits remain difficult to prosecute. The District Court in Haines v. Liggett Group explained in some detail the financial problems involved in prosecuting claims against tobacco. See Haines v. Liggett Group, Inc., 814 F.Supp. 414 (D.N.J. 1993). That court noted tobacco's policy of expending vast sums in litigation while avoiding settlement in any case. See id. at n.13 (citing statement of Murray Bring, Vice President and General Counsel of Philip Morris, in the Summer 1988 *Philip Morris Magazine*, that "[a]lmost 200 lawsuits have been brought in the last five and a half years and the cigarette manufacturers have not . . . paid a penny to settle one."). The Haines court noted that plaintiffs had incurred several million dollars in out-of-pocket costs, which eventually bankrupted plaintiffs' attorneys and led to their withdrawal from the case, after they had prevailed on preemption before the Supreme Court. Id. at 418–25.

The costs of trials is immense. A recently developed counterbalance, not as strongly present when Haines was litigated, is the existence of well-funded plaintiffs' firms. Large settlements with manufacturers of tobacco, asbestos, and other mass torts, in private and public litigation, have enhanced the finances of leading plaintiffs' firms. A small number of plaintiffs' firms now have great resources. In addition, publicly accessible documentation supporting

claims is now generally available on line or even in litigation kits. Defendants are still able to conduct debilitating litigation against individual plaintiffs.

[211 F.R.D. at 146-157]

## V. Substantive Law

### E. Individualized Proof of Causation and Damages

Plaintiff's use of aggregate proof does not violate defendants' Constitutional rights. It is consonant with New York law. The appropriateness of such proof has been analyzed in numerous memoranda by this court. See, e.g., Blue Cross, 178 F.Supp.2d 198. Three years of coordinated discovery among nine related tobacco cases and two full trials, has strengthened the conclusion that statistical proof combined with other evidence is a necessary, pragmatic and evidentiary approach that reflects full due process in this and many other massive tort cases. It is consistent with the defendants' Constitutional rights and legally available to support plaintiffs' state law claims.

The idea that due process and jury trial rights require a particularized traditional form of evidence for each element would make this case and cases like it impossible to try. There is little harm in retaining a requirement for "particularistic" evidence of causation and damages in sporadic individual accidents where there are few medical histories and witnesses; such evidence is almost always available and convenient in such litigation. See, e.g., In re Agent Orange Prod. Liab. Litig., 597 F. Supp. 740, 832-34 (E.D.N.Y. 1984). Even in such cases, of course, use of almost any experts, whether doctors or DNA masters, depend upon implied or express probabilistic underpinning of their professional judgments.

In mass exposure cases with hundreds of thousands or millions of injured the cost of one-on-one procedures is insuperable and unsuitable for either a jury or a bench trial. The consequence of requiring individual proof from each smoker would be to allow defendants who have injured millions of people and caused billions of dollars in damages, to escape almost all liability.

* * * *

The Federal Rules of Civil Procedure and the Federal Rules of Evidence grant district judges broad authority to shape the nature and scope of admissible evidence for trial. Scientific evidence – such as the sampling and statistical extrapolations – is well suited to mass tort actions. It is particularly appropriate in massive consumer fraud cases – so long as it passes the gate-keeping criteria described in the Federal Rules of Evidence and Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993) and related cases.

Many states have provided special mechanisms for handling consumer fraud claims in the aggregate, recognizing that many such claims cannot be economically tried individually. When, as in the case at bar, the plaintiffs are a widely spread group suffering injury from a common action of defendants, statistical analysis may provide a more accurate and comprehensible form of evidence than would the testimony of millions of individual smokers. See Blue Cross & Blue Shield of N.J., Inc, 133 F. Supp. 2d at 172 (explaining propriety of statistical extrapolation for entity suffering damages in aggregate); Blue Cross & Blue Shield of N.J., Inc, 36 F. Supp. 2d at 575 (E.D.N.Y. 1999) ("[t]he aggregation of millions of alleged injuries in the instant suit can be expected to yield more accurate results with respect to the causation issue since projections based upon a large statistical base will be available, thus reducing the size of the possible error").

Extrapolated claim yields in the aggregate can with appropriate approximations provide a reliable estimate of total health care costs based upon individual claims. Laurens Walker & John Monahan, Sampling Liability, 85 Va. L. Rev. 329 (1999).

Resolving mass tort disputes on a case-by-case basis may create a systematic bias against plaintiffs because, "[w]hile defendants spread the risk of adverse judgments across all test trials, each trial decides the fate of each plaintiff party on a single roll of the dice." David Rosenberg, Mass Tort Class Actions: What Defendants Have and Plaintiffs Don't, 37 Harv. J. on Legis. 393, 430 (2000); Marc Galanter, Why the "Haves" Come out Ahead: Speculations on the Limits of Legal Change, 9 L. & Soc'y Rev. 95 (1974) (importance of defendants role as repeat players). The defendant who successfully resolves a mass tort dispute with aggregate tools enjoys the economic benefit of a final resolution to all proceedings, not just a single case. Cf. Simon v. Philip Morris Inc., 200 F.R.D. 21, 43-46 (E.D.N.Y. 2001) (discussing public policy supporting aggregation).

* * * *

*2. Appropriateness of Sampling and Survey Techniques*

Sampling and survey techniques are a well-accepted alternative for the trial judge facing crippling discovery and evidentiary costs.

* * * *

*3. Due Process*

"'Due Process,' unlike some legal rules, is not a technical conception with a fixed content unrelated to time, place and circumstances." Cafeteria and Restaurant Workers Union, Local 473 v. McElroy, 367 U.S. 886, 895, 81 S.Ct. 1743, 6 L.Ed.2d 1230 (1961) ("The very nature of due

process negates any concept of inflexible procedures universally applicable to every imaginable situation.”). Whether a procedural device utilized where a private party invokes state authority to deprive another person or entity of property comports with due process is determined by a balancing of interests:

> [F]irst, consideration of the private interest that will be affected by the [procedure]; second, an examination of the risk of erroneous deprivation through the procedures under attack and the probable value of additional or alternative safeguards; and third, . . . principal attention to the interest of the party seeking the [procedure], with, nonetheless, due regard for any ancillary interest the government may have in providing the procedure or forgoing the added burden of providing greater protections.

Connecticut v. Doehr, 501 U.S. 1, 11, 111 S.Ct. 2105, 115 L.Ed.2d 1 (1991); see also Hilao, 103 F.3d at 786.

Consideration of the private interests at issue counsels in favor of utilizing statistical methods. Tobacco companies admittedly have an interest in not paying for damages in excess of what alleged misconduct may have caused; that interest would be furthered by their confronting (before a jury) each of the hundreds of thousands of plaintiffs who suffered smoking-related illnesses with respect to their reliance on tobacco company misstatements and omissions, and about their discovery of their injuries (so as to precisely determine in each instance when the statute of limitations started to run).

Practical considerations temper the weight of tobacco companies’ interest, however. If such an individualized process were undertaken, it would have to continue beyond all lives in being. Assuming tobacco companies were willing to expend the resources and monies necessary both in discovery and at trial to mount such an undertaking, the litigation costs in doing so would far exceed any monies saved by avoiding erroneous payments especially given appropriate

statutes of limitations. See supra Part V.C. (discussing statutes of limitations).

Transactional costs would be enormous. Much of these costs would be borne by the public through financing of a court system that would require expansion.

The interest of plaintiffs in avoiding the additional litigation costs that would arise if defendants were permitted to confront each possible plaintiff at trial is enormous. The necessary additional litigation costs plaintiffs would have to bear would consume much of any recovery from defendants, making continued pursuit of the litigation fruitless. See, e.g., Hilao, 103 F.3d at 786 ("[Plaintiffs'] interest in the use of the statistical method . . . is enormous[] since adversarial resolution of each class member's claim would pose insurmountable practical hurdles.").

The interests of the injured plaintiffs must be considered. Requiring individual proof as to each claim would unnecessarily intrude on the lives of hundreds of thousands of people. Examining each grain of sand is too burdensome in a survey of a beach.

The second element of the due process balancing test — examination of the risk of erroneous deprivation through the procedures under attack and the probable value of additional or alternative safeguards — also supports allowance of the proffered statistical proof, subject to appropriate Daubert challenges. See Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993); see also Falise v. American Tobacco Co., 107 F.Supp.2d 200 (E.D.N.Y. 2000); cf. International Bhd. of Teamsters, Local 734 v. Philip Morris Inc., 196 F.3d 818, 823 (7th Cir. 1999) ("Statistical methods could provide a decent answer — likely a more accurate answer than is possible when addressing the equivalent causation question in a single person's suit.").

Experts have developed appropriate modeling techniques for reaching statistically

significant and reliable conclusions. See Michael O. Finkelstein & Bruce Levin, Statistics for Lawyers §§ 5.6-5.12, at 170-86 (1990) (confidence intervals); id. §§ 9.1-9.8, at 258-83 (sampling); id. §§ 12.1-12.37, at 323-464 (1990) (regression modeling); David H. Kaye and David A. Freedman, Reference Guide on Statistics, in Reference Manual 1994, supra, at 331; Daniel L. Rubinfeld, Reference Guide on Multiple Regression, in Reference Manual 1994, supra, at 415; see generally Geoffrey R. Norman & David L. Streiner, PDQ Statistics 27-77 (1986) (statistical inference and regression analysis).

In the Blue Cross case, such techniques were employed to ensure that the ultimate damages projected by statistical models was within a narrow percent (either higher or lower) of the actual damage caused by defendants' alleged misconduct. See Blue Cross, 178 F.Supp.2d at 286–89. The jury's evaluation of this data was conservative and helpful to defendants.

In addition to statistical evidence, parties will be permitted to present to the jury relevant lay testimony, expert testimony, and documentary evidence — subject to the constraints of the Federal Rules of Evidence and the practical considerations of trial management.

The third due process consideration — regard for any interest the government may have in procedures — heavily weighs in support of allowing plaintiffs to rely on statistical evidence. A consolidated trial with full presentation of the individual facts of each of plaintiffs' claims relating to smoking-related illnesses before a single jury would be unmanageable. See Manual for Complex Litigation § 22.3, at 136 ("Although the presentation of the evidence at trial is normally controlled by the strategies and tactics of counsel, in complex litigation other considerations also require attention, primarily jury comprehension and the length of the trial. These are not unrelated concepts, since a shorter trial promotes jury comprehension, and

effective presentation saves time."); Joe S. Cecil, Valerie P. Hans & Elizabeth C. Wiggins, Citizen Comprehension of Difficult Issues: Lessons from Civil Jury Trials, 40 Am. U. L. Rev. 727, 764 (1991) ("[T]he overall picture of the jury [in complex cases] that emerges from the available data indicates that juries are capable of deciding even very complex cases, especially if procedures to enhance jury competence are used."). Hundreds-of-thousands of separate trials brought by individuals who suffered a smoking-related illness would prove unnecessarily burdensome; it would "clog the docket of the district court for years." Hilao, 103 F.3d at 786-87; see also Laurens Walker & John Monahan, Sampling Liability, 85 Va. L.Rev. 329, 343 (1999) ("Individualized information should be used where it is practical — i.e., cost effective — to obtain. If individual information is not practical to obtain, however, sampling should be used so that a judgment can be reached efficiently and expeditiously.").

Under the balancing test set forth in Doehr, the use of statistical evidence (subject to satisfaction of the Daubert criteria) by plaintiffs does not violate due process strictures. See Michael J. Saks & Peter David Blanck, Justice Improved: The Unrecognized Benefits of Aggregation and Sampling in the Trial of Mass Torts, 44 Stan. L.Rev. 815, 826-832 (1992) (statistical sampling comports with due process in mass aggregation cases).

The interests of the private parties, the accuracy of the procedures, and an efficient use of court resources argue in favor of using statistical models along with individual deposition lay testimony, expert testimony, and documentary evidence. See Connecticut v. Doehr, 501 U.S. 1, 11 (1991); see, also e.g., Hilao, 103 F.3d at 786 (balancing due process interests); Michael J. Saks & Peter David Blanck, Justice Improved, 44 Stan. L. Rev. 815, 826-32 (1992) (statistical sampling comports with due process in mass aggregation cases).

Several thorough and prolonged hearings in the Blue Cross litigation established that the statistical models used there satisfied Daubert and could be used in combination with individualized evidence to satisfy each element of that plaintiff's cause of action. See, e.g., Blue Cross & Blue Shield of N.J., Inc v. Philip Morris Inc., et al., No. 98 CV 3287, 2000 WL 1880283 (E.D.N.Y. Dec. 27, 2000); Blue Cross & Blue Shield of N.J., Inc v. Philip Morris Inc., No. 98 CV 3287, 2000 WL 1805359 (E.D.N.Y. Dec. 11, 2000); Blue Cross & Blue Shield of N.J., Inc v. Philip Morris Inc., No. 98 CV 3287, 2000 WL 1738338 (E.D.N.Y. Nov. 1, 2000); Falise v. The Am. Tobacco Co., No. No. 99 CV 7392, 2000 WL 1804602 (E.D.N.Y. Nov. 30, 2000); Falise v. The Am. Tobacco Co., 107 F. Supp. 2d 200 (E.D.N.Y. July 28, 2000). Since the plaintiffs' claims were ultimately based on consolidated proof of their clients' individual claims, there appears to be no good reason why the proofs in the Blue Cross trial should not be available in the current case.

*4. Jury Right*

The use of aggregated proof in plaintiffs' claims does not violate the Seventh Amendment.

* * * *

[211 F.R.D. at 179]

**VIII. Class Certification Analysis**

The standard case-by-case process for adjudicating mass tort claims generally denies efficiencies to plaintiffs, but automatically affords those litigation advantages to defendants, who are repeat litigators of the same issues. See generally David Rosenberg, Mass Tort Class

Actions: What Defendants Have and Plaintiffs Don't, 37 Harv. J. Legis. 393, 404 (2000) ("Systemic bias . . . poses a major obstacle by preventing plaintiffs from investing optimally in developing the aggregate value of their claims, while the defendant engages in precisely that investment strategy to strengthen its case on the common questions and further drive down its adversary's expected benefit . . . .[T]he systemic bias favoring the defendant subverts the goal of fully internalizing the costs of tortious harm."); Marc Galanter, Why the "Haves" Come out Ahead: Speculations on the Limits of Legal Change, 9 L. & Soc'y Rev. 95 (1974) (analyzing repeat player issue). The aggregation of claims in a multiple action as in the case at bar restores balance in litigation power to ensure one of the primary goals of tort law: effective and administratively efficient deterrence and compensation. David Rosenberg, Individual Justice and Collectivizing Risk-Based Claims In Mass Exposure Cases, 71 N.Y.U. L. Rev. 210 (1996) (calling for consideration of collectivization in mass exposure cases from the perspective of the deterrence and compensation policies underlying tort law); cf. Kenneth S. Abraham, Individual Action and Collective Responsibility: The Dilemma of Mass Tort Reform, 73 Va. L. Rev. 845, 896-97 (1987) (proposing a compensation fund with quasi-subrogation rights of punitive damages against a tortfeasor).

## APPENDIX E

Excerpts from *Monograph 13: Risks Associated with Smoking Cigarettes with Low Machine-Measured Yields of Tar and Nicotine*, by United States Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute (2001).

[Some references, some charts, and most footnotes omitted.]

[Pages 1-10]

**Chapter 1. Public Health Implications of Changes in Cigarette Design and Marketing**
David M. Burns, Neal L. Benowitz

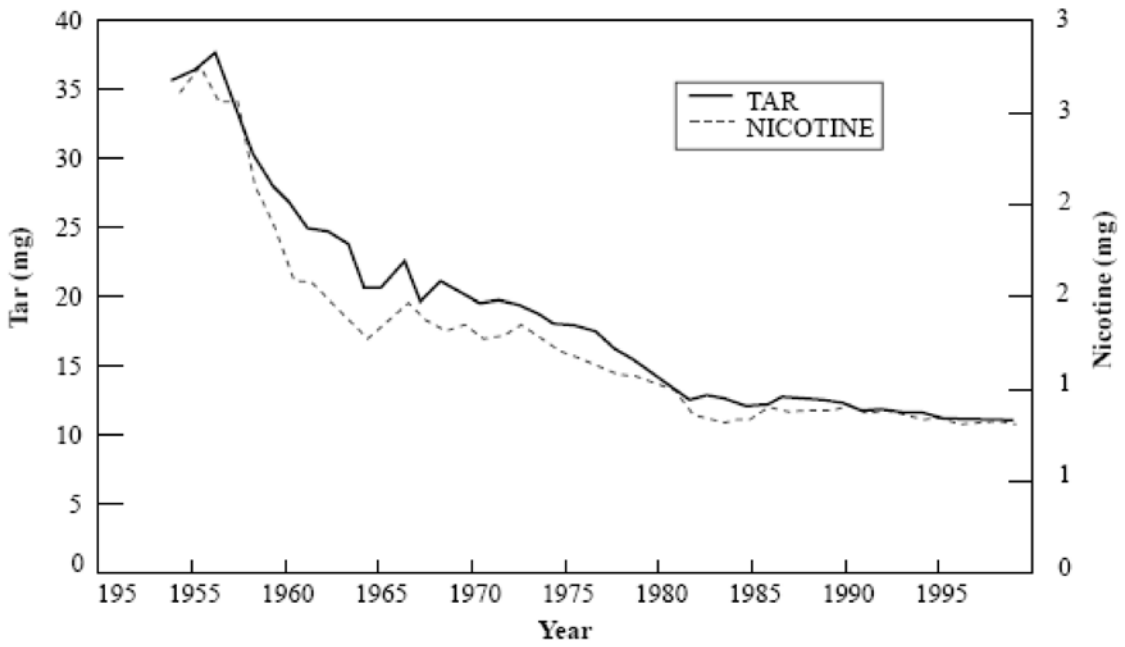
### Introduction

Cigarettes have changed dramatically over the last 50 years, but the data contained in this volume make it clear that the disease risks associated with smoking have not. Following the demonstration that cigarettes could cause cancer in the 1950s (Wynder and Graham, 1950; Doll and Hill, 1952, 1954; Hammond and Horn, 1958), cigarette manufacturers added filters to their products. They also embarked on an effort to lower the machine-measured tar and nicotine yields produced by their cigarettes when tested under a protocol specified by the Federal Trade Commission (FTC) (Pillsbury, 1996). These changes led to more than a 60-percent reduction in machine-measured tar yields of U.S. cigarettes over the last 50 years (see Figure 1-1).

However, it appears that many of the same changes in cigarette design that reduced machine-measured tar yields also led to a disassociation between the machine-measured yield of the cigarette and the amount of tar and nicotine actually received by the smoker (see Chapters 2 and 3). As a result, tar and nicotine measurements made by the FTC method for current cigarettes have little meaning for the smoker, either for how much he or she will receive from a given cigarette or for differences in the amount of tar and nicotine received when he or she smokes

different brands of cigarettes.

Figure 1-1
**Sales-Weighted Tar and Nicotine Values for U.S. Cigarettes as Measured Using the FTC Method 1954*-1998**




*Values before 1968 are estimated from available data, D. Hoffmann personal communication.

The absence of meaningful differences in smoke exposure when different brands of cigarettes are smoked (see Chapter 3) and the resultant absence of meaningful differences in risk (see Chapter 4) make the marketing of these cigarettes as lower-delivery and lower-risk products deceptive for the smoker (see Chapters 6 and 7). The reality that many smokers chose these products as an alternative to cessation—a change that would produce real reductions in disease risks—makes this deception an urgent public health issue.

**How Did it Happen?**

Epidemiological studies established an increased risk of lung cancer among cigarette

smokers in the 1950s (Wynder and Graham, 1950; Doll and Hill, 1952, 1954; Hammond and Horn, 1958). At the same time, it was discovered that painting tobacco tar on the backs of mice could produce cancers (Wynder et al., 1953). Widespread public dissemination of the results of these studies led many smokers to quit (Burns et al., 1997), but the majority of smokers were addicted and were unable to quit or unwilling to try. Faced with the continuing exposure of large numbers of smokers to the cancer-causing substances in tobacco smoke, public health authorities made the valid conclusion that cigarettes that delivered less tar to smokers would be likely to produce less cancer as well (U.S. Congress, 1967), and the effort to produce and market low-tar cigarettes began to gather momentum.

The recommendations by public health authorities to produce low-tar cigarettes failed to appreciate two important realities. First, smokers were powerfully addicted to the nicotine in cigarettes. They actively changed the way they smoked individual cigarettes (see Chapters 2 and 3)—and some smokers increased the number of cigarettes they smoked per day (see Chapter 4)—in order to preserve their moment-to-moment and daily intake of nicotine. Because cigarettes deliver smoke with a relatively fixed ratio of tar to nicotine, smokers also preserved their dose of tar when they preserved their dose of nicotine.

Second, public health authorities dramatically underestimated the ability of cigarette manufacturers to engineer cigarettes that would yield very low tar and nicotine values when machine smoked, but yielded much higher levels of tar and nicotine when smoked by the smoker. Cigarettes were designed with an elasticity of delivery that allowed smokers to get much higher yields of tar and nicotine by altering their pattern of puffing. Smokers may also obtain higher yields of tar and nicotine by blocking ventilation holes in the filters with their fingers or lips (see

Chapter 2). Low-yield cigarettes were designed in such a way that the same alterations in puff profile (e.g., larger, faster puffs) that resulted from a smoker's effort to compensate for a reduced nicotine delivery also generated much higher deliveries of tar and nicotine from the cigarette. In addition, the ventilation holes in cigarette filters were placed in locations where they could easily be blocked by smokers' lips or fingers. The combination of these two phenomena—compensation on the part of the smoker and elasticity of delivery in the cigarette—meant that most, perhaps nearly all, smokers who switched to these low-yield brands did not substantially alter their exposure to tar and nicotine and, correspondingly, did not lower their risk.

**Compensation in Smokers**

Nicotine intake is a principal reason why most smokers smoke (U.S. DHHS, 1988). In the absence of nicotine, smokers do not continue the compulsive use of cigarettes that characterizes addiction. Tobacco companies recognized early in the process of developing lower yield cigarettes that smokers would attempt to preserve the amount of nicotine derived from smoking (Wakeham, 1961). Compensation for reduced delivery of nicotine takes many forms and develops over time after shifting to lower yield cigarettes (see Chapter 3). Smokers may take larger puffs, inhale more deeply, take more rapid or more frequent puffs, block ventilation holes in the filters with their fingers or lips, or increase the number of cigarettes they smoke per day.

The most important question on compensatory smoking is the extent to which it occurs when smokers actually switch brands of cigarettes through their own choice. Unfortunately, this is also the most difficult circumstance under which to obtain detailed measurements of large

numbers of smokers. Many studies have examined smokers when smoking in a laboratory setting or when asked to switch at specific points in time or to specific brands of cigarettes. These studies offer some insight into how smokers compensate, but may not reflect smokers' behavior when they are switching of their own volition to a brand of their choice.

Some compensatory smoking changes are evident immediately upon switching to lower yield cigarettes, but it is common for smokers to require some time to learn how to smoke lower yield cigarettes in ways that increase the delivery of nicotine to the smoker. Even under laboratory conditions, when smokers are rapidly switched to lower yield cigarettes, considerable compensation is evident. The extent of compensation increases in smokers who are allowed longer periods to adapt to smoking the new cigarettes or who are switched under conditions that more closely mimic the voluntary switching of smokers to lower yield cigarettes. When smokers of cigarettes with different machine-measured nicotine yields from the general population are examined, there is little or no relationship between the nominal nicotine yield of the cigarette smoked and measures of nicotine intake by the smoker, such as blood cotinine levels (Benowitz et al., 1983: Benowitz, 1996; Jarvis et al., 2001). These observations suggest that, at least when considering modern cigarettes, switching from higher to lower yield cigarettes per se is not likely to reduce tar intake and resultant disease risks.

**Elasticity of Demand in the Cigarette**

Early in the 1950s, cigarette manufacturers began to place filters on the end of the cigarette rod. Many different filters were developed, but the most common type used in the United States was made of cellulose acetate. A variety of other approaches to tar reduction was

also utilized, including “puffing” the tobacco to reduce the weight of tobacco in a cigarette, altering the blends of tobacco and porosity of the paper wrapper, changing the density of the tobacco rod, using tobacco stems and reconstituted tobacco sheet, and using a wide variety of filter materials (see Chapter 5).

In exploring these approaches, cigarette manufacturers recognized that approaches to reduction of tar yields that actually reduced the nicotine (and tar) delivery to smokers resulted in smokers discontinuing the use of those brands of cigarettes. This led to an effort to design into the cigarette an elasticity of delivery so that smokers could extract from the cigarette as much nicotine as they needed by changing the pattern of puffing on the cigarette (see Chapter 2). The goal of this effort was to develop cigarettes that would produce very low yields of tar when tested by machine smoking using the FTC protocol, but would deliver a much higher dose of nicotine when these cigarettes were smoked by actual smokers with the puffing profiles the companies knew they would use.

An important cigarette design feature allowing a low machine-measured yield with a higher actual yield is the use of ventilated filters. Holes are cut into the paper wrapping the filter in locations where they are not covered when the cigarettes are placed into the smoking machine. However, the lips or fingers of the smoker can easily cover the holes. When the holes are uncovered and the low draw rates specified by the FTC protocol are used, air is drawn into the smoking machine, diluting the smoke coming through the rod of tobacco and lowering the machine-measured tar values. When the holes are covered or when the smoker draws more rapidly on the cigarette, much more of the puff volume is composed of smoke drawn through the rod of tobacco and much less is composed of air drawn from the ventilation holes. The result

is a dramatic rise in the tar and nicotine delivered to the smoker by the cigarette.

A given cigarette can be made to deliver any lower level of tar in machine measurements by increasing the size or number of the ventilation holes in the filter. The amount of nicotine in the unburned tobacco is similar for cigarettes with a wide range of machine-measured nicotine yields, as is the tar-to-nicotine ratios of the smoke from these cigarettes when they are smoked under conditions that mimic those of actual smokers (see Chapter 3). This combination of factors, plus the learned compensatory behaviors of the smoker, allows most cigarettes to deliver similar amounts of tar and nicotine to cigarette smokers without regard to the amount of tar and nicotine reported using the FTC method.

This effort by cigarette manufacturers to design cigarettes that could yield very low levels of tar when smoked by the machine while delivering full doses of tar and nicotine to smokers was not the only option available to the cigarette manufacturers. Internal tobacco company documents are replete with descriptions of filters that could selectively remove toxic smoke constituents, of treatments of tobacco with catalysts like palladium that reduced levels of carcinogens in the smoke, and of other promising modifications of cigarette toxicity. Many of the changes in cigarette design developed by cigarette manufacturers lowered levels of the toxic constituents in cigarette smoke, at least as the cigarettes were smoked using the FTC protocol. However, these paths were not pursued to the point of bringing products to market with scientifically established reductions in toxicity or carcinogenicity for smokers. The principal marketing advantage of a cigarette design scientifically established to cause less harm would be the reduced toxicity of the product. Because cigarette manufacturers persistently maintained that cigarette smoking did not cause any disease, they could not advertise a product as safer since it

would be necessary to acknowledge the risks of their existing products.

One unfortunate outcome of the tobacco companies' position that cigarettes had not been established to cause any disease is the lost opportunity to develop cigarettes that have actual reductions in biological toxicity rather than simply the ability to reassure smokers concerned about the risk of smoking. The more unfortunate outcome of this position was the marketing of cigarettes with no real difference in disease risks as "safer" products.

**Marketing of Low-Yield Cigarettes**

The link between tar and cancer risk also led to marketing of cigarettes with lower machine-measured tar yields as reduced-risk cigarettes. Terms such as 'Light' and 'Ultra-Light' were added to brand names, and substantial numbers of smokers switched to these brands in an effort to reduce their disease risks (see Chapter 6). Marketing this illusion of risk reduction would have been of concern even if the target for these brands had been confined to continuing smokers. Instead, these brands were targeted at those smokers who were thinking of quitting in an effort to intercept the smokers and keep them smoking cigarettes (see Chapter 7). The switch to low machine-measured-yield cigarettes with the illusion of risk reduction was, therefore, substituted for a real risk reduction that would have occurred had the smoker quit smoking altogether.

Beginning in the 1950s, filter cigarettes were advertised using claims of scientific discoveries, modern pure materials, and implied endorsements from medical and scientific organizations. These claims were not supported by testing that demonstrated lower deliveries of tar and nicotine to smokers or by studies of actual disease risks. However, the clear message

delivered to smokers by the advertising was that these cigarettes were safer.

With the endorsement of lower tar cigarettes by public health authorities in the 1960s (U.S. Congress, 1967), cigarette marketing began to focus on machine-measured tar deliveries. Tobacco industry research and engineering efforts recognized that at least two directions were possible with the development of either a health-image (health reassurance) cigarette or a cigarette with minimal biological activity (one that would actually produce less disease) (Green, 1968). Unfortunately, the dominant direction taken was the production of health reassurance cigarettes engineered so that they would deliver low yields of tar under FTC machine-smoking conditions. These low machine yields were touted in the advertisements and incorporated into cigarette brand names with terms such as 'Light' and 'Ultra-Light'. However, the promise of low tar delivery was only valid for the smoking machine. Smokers received a much higher dose of tar and enough nicotine to satisfy their addiction.

This dichotomy of delivery between smokers and machines was the intended result of the engineering effort to design elasticity of delivery into cigarettes. Testing of these design concepts on actual smokers revealed that Light and Regular cigarettes delivered the same levels of tar and nicotine when smoked by smokers (Goodman, 1975) and that advertising these cigarettes as low-tar-yield cigarettes was deceptive (Peeples, 1976). But these cigarettes satisfied the demand for cigarettes that could be marketed as low-tar cigarettes with full flavor or taste (See Figure 1-2). The low-tar claim presented in the ad only existed for machine smoking and the full flavor received by the smoker was accompanied by full yields of tar and full disease risks.

Figure 1-2
Low Tar is Important to Me

**Disease Risks**

Having demonstrated that smokers derive similar amounts of nicotine from cigarettes with a wide variety of machine-measured nicotine yields because those cigarettes were designed to deliver a full dose of nicotine (and tar) to the smoker, one might expect that there would be little or no difference in disease risks among groups of smokers who smoke cigarettes with different machine-measured tar and nicotine yields. However, epidemiological studies have demonstrated that smokers of lower tar or filtered cigarettes had lower lung cancer risks (see Chapter 4). These findings, made in the late 1960s and 1970s, were particularly exciting since smokers had been smoking these reduced-yield cigarettes for only short periods of time. As more individuals used these products for longer periods of time, the reduction in disease risk would be expected to increase and national lung cancer death rates would fall.

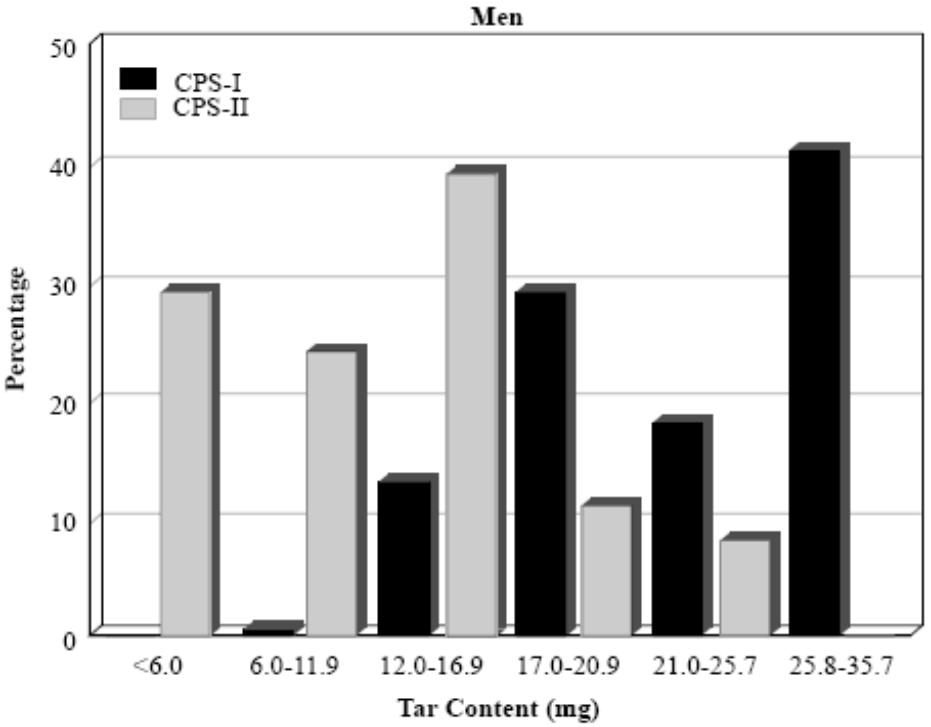
Use of lower yield cigarettes grew until they were the dominant type of cigarette on the U.S. market, with 97 percent of the cigarettes currently sold in the United States being filtered cigarettes, but lung cancer rates continued to rise. Lung cancer death rates finally peaked in 1990 among White males; they continue to rise among women in spite of a higher prevalence of low-yield cigarette use among females. Examination of these trends show that they are explained by changes in smoking prevalence without postulating reductions in disease risks due to changes

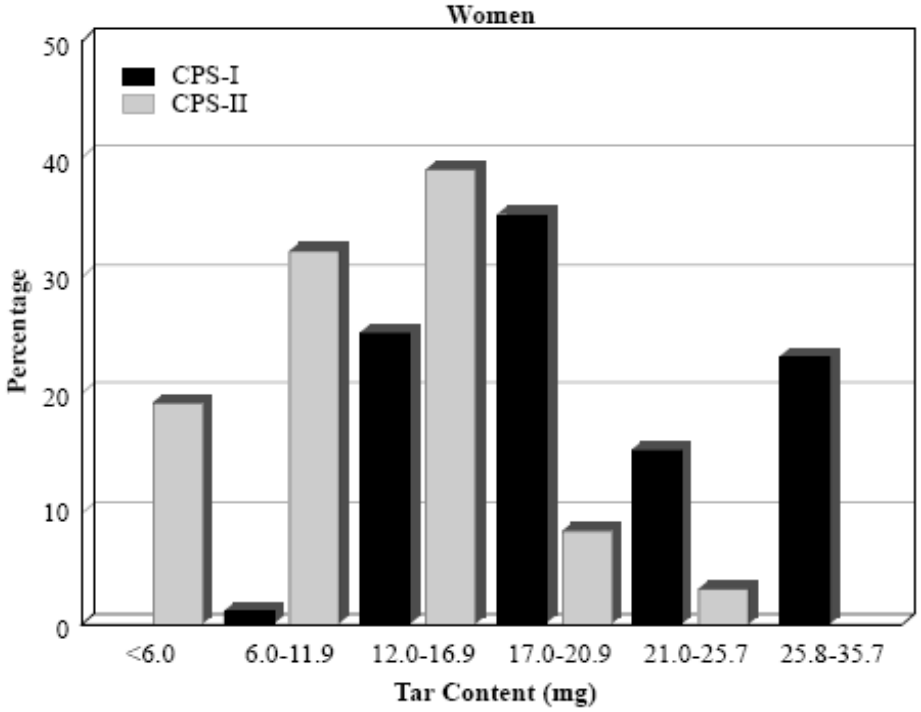
in cigarette design (Mannino et al., 2001; see Chapter 4).

In addition, prospective mortality studies examining smokers in the United States (Thun and Heath, 1997; Thun et al., 1997) and the United Kingdom (Doll et al., 1994) revealed an increase—rather than a decrease—in the risk of smoking over a period when tar and nicotine yields of cigarettes were declining. Data from two large prospective mortality studies conducted by the American Cancer Society (ACS) more than 20 years apart are particularly compelling (Thun and Heath, 1997). Machine-measured tar and nicotine yields of U.S. cigarettes declined dramatically in the interval between these two studies (see Figure 1-1), and the machine-measured yields of the cigarettes actually smoked by the participants in these two studies were dramatically different as a result (see Figure 1-3). Despite the substantive reduction in tar yield of the cigarettes smoked in CPS (Cancer Prevention Study)-II, lung cancer disease risks increased, rather than decreased, compared to CPS-I, even when controlled for differences between the two studies in number of cigarettes smoked per day and duration of smoking.

The risk reduction with use of lower yield cigarettes demonstrated in epidemiological studies and the absence of a risk reduction in U.S. lung cancer mortality trends or in the two ACS studies with changing cigarette design are observations that offer apparently conflicting interpretations of the likely disease consequences of smoking lower yield cigarettes. The epidemiological observation of lower risks with use of filtered and lower tar cigarettes has been reproduced in multiple populations and cannot be dismissed as an artifact of a single analysis or a single population. Similarly, national death rate trends are real observations not easily dismissed.

Figure 1-3
**Percentage Distribution of Tar Content, as Measured by Machine Smoking, of the Cigarette Brand Smoked at Enrollment**



Epidemiological studies and national death rates both measure the impact of low-yield cigarettes in somewhat different ways. Epidemiological studies of disease risks compare disease rates among populations of smokers who use cigarettes with different characteristics. These studies can define whether the disease experiences of smokers of different types of cigarettes are different. However, attributing differences in disease experience to the type of cigarette smoked requires careful consideration of, and adjustment for, characteristics of the two groups that may influence disease risks other than the type of cigarette smoked.

National mortality rate trends are the cumulative result of all of the changes in smoking behavior over time, changes in cigarette design, demographic changes, and changes in smoking behavior. However, smokers of different types of cigarettes cannot be examined directly for their contribution to these trends.

The marketing of low-yield cigarettes as less risky (see Chapters 6 and 7) results in smokers switching from higher to lower yield cigarettes in an effort to reduce their disease risks (Cohen, 1996a & b; see Chapters 6 and 7), in an effort to quit, or in an effort to substantially reduce their smoking (Giovino et al., 1996). Because of these health concerns and an ongoing interest in cessation, these same low-yield cigarette smokers may also have higher rates of successful long-term smoking cessation or may voluntarily reduce the amount that they smoke for health reasons. Risk reductions that accompany cessation or lowered smoking intensity may appear to be related to the tar level of the cigarette smoked when a population is followed longitudinally for assessment of disease risk without repeated follow-up assessment of smoking status. This effect and other differences in health-related behaviors linked to low-yield cigarette use may confound the analysis of disease risk in prospective studies of low yield cigarettes.

Many published epidemiological studies of low-yield cigarettes have adjusted for the number of cigarettes smoked per day because it is the most readily available quantitative measure of smoking intensity. The potential for smokers to increase the number of cigarettes they smoke per day when they switch to lower yield cigarettes can confound analyses of disease risks among smokers of different types of cigarettes in both case-control and prospective epidemiological evaluations (see Chapter 4). Data presented in Chapter 4 show that smokers who switched to low-yield cigarettes in the ACS CPS-I increased the number of cigarettes that they smoked per day, and that smokers of ultralow-nicotine-yield cigarettes smoked more cigarettes per day in recent California tobacco surveys.

The differences between self-selected populations of smokers of different types of cigarettes and the potential for confounding between type of cigarette smoked and the number of cigarettes smoked per day may explain why epidemiological studies have demonstrated a risk difference when one has not appeared in national death rates.

However, it is clear that the expected lung cancer risk reduction offered by the reduction in lung cancer rates in epidemiological studies has not been realized in national lung cancer death rate trends. When all of the epidemiological evidence is considered in the context of what is currently known about cigarette design and compensation, it does not support the conclusion that a reduction in disease risks has occurred in the population of smokers due to the design changes that occurred in cigarettes over the last 50 years.

This report reviews evidence on the FTC method for measuring tar and nicotine yields and the disease risks of machine-measured low-tar cigarettes. The evidence is derived from research on human behavior and exposures, cigarette design and yields, smoke chemistry,

epidemiological other and population-based data on human disease risk. In conducting this review, the objective was to determine whether the evidence taken as a whole shows that the cumulative effect of engineering changes in cigarette design over the last 50 years has reduced disease risks in smokers. Traditional scientific judgment requires compelling evidence of a difference before concluding that use of lower yield products reduces disease risk. These judgments are especially important for harm reduction claims, as they may deter smokers from cessation of tobacco use. Moreover, there have been previous public policy statements on the likely benefits of lower yield products. These prior statements may lead to confusion by creating an implication that the appropriate standard for judgment would require proof of the absence of an effect before the policy recommendations should be withdrawn. Given the consequences of being wrong on the advice given to smokers, the burden of proof should not be shifted from proving the presence of an effect. The perspective of this report is whether the existing evidence is sufficient to support claims that disease risks are reduced when smokers switch to lower yield cigarettes and policy recommendations that smokers who cannot quit should switch to these products. The answers to these questions are that current evidence does not support either claims of reduced harm or policy recommendations to switch to these products.

Many questions remain unanswered. For example, the disease risks of recently introduced cigarettes or cigarette-like products are not known. Similarly, the cancer risks for individuals who have only used low and ultra-low cigarettes, and who may have different intensities of smoking as a result, have yet to be fully described. Changes in age-specific lung cancer death rates at younger ages in the United Kingdom suggest that the future lung cancer experiences of these young smokers may differ from that of prior generations of smokers. In addition, the

possibility exists that individual product design changes, or future changes in tobacco industry produced nicotine delivery devices, may reduce disease risks in the future. However, the burden of proof for these benefits must remain with those who would make the claims. The proof must integrate both measurements of dose and measures of actual biological effect. The very real probability that addicted smokers will seek out and rely upon the promised potential of reduced risk for products that allow continued smoking creates an obligation to require clear scientific proof of harm reduction claims before they are communicated to potential product users.

**Conclusions**

1. Epidemiological and other scientific evidence, including patterns of mortality from smoking-caused diseases, does not indicate a benefit to public health from changes in cigarette design and manufacturing over the last fifty years.
2. For spontaneous brand switchers, there appears to be complete compensation for nicotine delivery, reflecting more intensive smoking of lower-yield cigarettes.
3. Widespread adoption of lower yield cigarettes in the United States has not prevented the sustained increase in lung cancer among older smokers.
4. Many smokers switch to lower yield cigarettes out of concern for their health, believing these cigarettes to be less risky or to be a step toward quitting. Advertising and marketing of lower yield cigarettes may promote initiation and impede cessation, more important determinants of smoking-related diseases.
5. Measurements of tar and nicotine yields using the FTC method do not offer smokers meaningful information on the amount of tar and nicotine they will

receive from a cigarette. The measurements also do not offer meaningful information on the relative amounts of tar and nicotine exposure likely to be received from smoking different brands of cigarettes.

[Pages 13, 34]

**Chapter 2. Cigarette Design**
Lynn T. Kozlowski, Richard J. O'Connor, Christine T. Sweeney

* * * *

**Conclusions**

1. Several design changes in the way that cigarettes are manufactured have led to a substantial reduction in the machine-measured tar and nicotine yields of U.S. cigarettes over the last several decades.
2. Many of the same design changes that have reduced machine-measured tar yields, particularly placing ventilation holes in the cigarette filters, also create an elasticity of delivery for the cigarette, allowing a wide range of tar and nicotine deliveries from the same cigarette when a smoker alters his or her smoking behavior.
3. Increasing puff volume and frequency, covering the ventilation holes with fingers or lips, and other changes in smoking behavior known to occur with use of low machine-measured-tar cigarettes can dramatically increase the tar and nicotine delivery of low- and ultralow-yield brands.
4. Variations in the tar and nicotine delivery that result from the known compensatory alterations in smoking behaviors make the current U.S. cigarette

tar and nicotine yields as measured by the FTC method not useful to the smoker either for understanding how much tar and nicotine he or she is likely to inhale from smoking a given cigarette or for comparing the tar and nicotine intake that is likely to result from smoking different brands of cigarettes.

[Page 39]

## Chapter 3. Compensatory Smoking of Low-Yield Cigarettes

Neal L. Benowitz

### Introduction

Most smokers are addicted to nicotine (U.S. DHHS, 1988). Nicotine addiction results in smokers seeking to take in a constant level of nicotine from smoking each day (Benowitz, 1988; U.S. DHHS, 1988). Consequently, when faced with low-yield cigarettes, smokers tend to take in more nicotine and other tobacco smoke constituents from these cigarettes than would be predicted by machine testing in order to sustain optimal levels of nicotine intake. This phenomenon of taking in similar levels of nicotine from day to day has been termed ‘regulation' or ‘titration’ of nicotine intake. The behavior of smoking cigarettes of different machine yields more or less intensively, and/or smoking more or fewer cigarettes to achieve a particular intake of nicotine, has been called ‘compensation’. If regulation of nicotine intake is precise, that is, compensation is complete, then switching to low-yield cigarettes would not be expected to reduce exposure to tobacco toxins, nor to reduce the risk of disease from smoking.

Earlier chapters have described the nature of low-yield cigarettes and the ways in which smokers can modify their smoking behaviors to take in more tobacco smoke from their cigarettes

than predicted by the standard smoking-machine test. In brief review—when faced with lower yield cigarettes, smokers can smoke more cigarettes per day, can take more and deeper puffs, can puff with a faster draw rate, and/or can block ventilation holes. Using these last four techniques, a smoker can increase his or her smoke intake from a particular cigarette several fold above the machine-predicted yields.

This chapter will review nicotine addiction and the evidence that smokers regulate their intake of nicotine from cigarettes. The focus will be on primarily studies in which human exposure has been biochemically assessed. Evidence from both experimental and cross-sectional studies will be examined. The question of whether or not tar exposure might be reduced despite compensation for nicotine itself when switching to low-yield cigarettes will also be examined.

[Pages 65, 146]

**Chapter 4. Smoking Lower Yield Cigarettes and Disease Risks**
David M. Burns, Jacqueline M. Major, Thomas G. Shanks, Michael J. Thun, Jonathan M. Samet

* * * *

**Conclusions**

1. Changes in cigarette design and manufacturing over the last fifty years have substantially lowered the sales-weighted, machine-measured tar and nicotine yields of cigarettes smoked in the United States.
2. Cigarettes with low machine-measured yields by the FTC method are designed to allow compensatory smoking behaviors that enable a smoker to derive a wide range of tar and nicotine yields from the same brand, offsetting much of the

theoretical benefit of a reduced-yield cigarette.

3. Existing disease risk data do not support making a recommendation that smokers switch cigarette brands. The recommendation that individuals who cannot stop smoking should switch to low yield cigarettes can cause harm if it misleads smokers to postpone serious efforts at cessation.
4. Widespread adoption of lower yield cigarettes by smokers in the United States has not prevented the sustained increase in lung cancer among older smokers.
5. Epidemiological studies have not consistently found lesser risk of diseases, other than lung cancer, among smokers of reduced yield cigarettes. Some studies have found lesser risks of lung cancer among smokers of reduced yield cigarettes. Some or all of this reduction in lung cancer risk may reflect differing characteristics of smokers of reduced-yield compared to higher-yield cigarettes.
6. There is no convincing evidence that changes in cigarette design between 1950 and the mid 1980s have resulted in an important decrease in the disease burden caused by cigarette use either for smokers as a group or for the whole population.

[Pages 193-198]

## Chapter 6. Public Understanding of Risk and Reasons for Smoking Low-Yield Cigarettes

Neil D. Weinstein

### Introduction

Few members of the public understand the probabilities and odds that form the vocabulary scientists use to discuss risk (Weinstein, 1999). Thus, lay people rely upon other cues,

such as the cigarette labels ‘Light’ and ‘Ultra Light’, to help them make decisions about smoking and other hazards (see Chapter 7). This chapter examines public perceptions of Light cigarettes, reasons for smoking Lights, and the relationship between smoking Lights and quitting.

**Perceptions of Light Cigarettes**

The labels ‘Light’ and ‘Ultra Light’, when applied to cigarettes, imply a variety of benefits. These include lower levels of tar and nicotine, less risk to health, and milder taste. Cigarette advertising, including the way in which these labels are used in the advertising, further modifies and shapes public perceptions of these products. What ‘Light’ and ‘Ultra Light’ come to mean to members of the public is an empirical question that can be revealed by careful survey research.

A substantial portion of smokers believe that low-tar cigarettes are less risky than Regular cigarettes. For example, a nationwide 1987 survey (Giovino et al., 1996, p. 49) found that 45.7 percent of Ultra-Light smokers, 32.2 percent of Light smokers, and 29.4 percent of Regular smokers said that low-tar cigarettes reduce the risk of cancer. Nevertheless, smokers’ knowledge about low-tar cigarettes is quite limited.

In 1995, a random sample of 12,371 Canadians adults were asked by telephone interviewers what the word “light” means in relation to cigarettes (Health Canada, 1995). The most frequently mentioned topics were: “less tar” (20.1 percent), “less nicotine” (36.2 percent), “safer” or “less addictive” (3.2 percent), “milder taste” (6.7 percent), “different filter” (2.3 percent), and “nothing” or “ad gimmick” (14.1 percent). A further 21.2 percent had no idea what the term meant. The meanings ascribed to “light” were generally similar among various

subgroups of smokers, although former and never smokers were more likely than current smokers to say that they had no idea what the term meant (17.8 percent and 28.7 percent versus 12.2 percent, respectively), and former smokers were more likely than current and never smokers to state that “light” was a meaningless advertising term (22.2 percent versus 16.0 percent and 10.6 percent, respectively).

A 1994 national random telephone survey found that 95% of regular smokers could identify that they were “somewhat certain” or “very certain” that they smoked a Regular, Light, or Ultra-Light cigarette (Kozlowski et al., 1998a & b). However, when asked how much tar their cigarettes contained, few smokers knew the answer to this question. For example, Cohen (1996a, p. 128) reported that 79% of smokers answered that they did not know the answer to the question. Comparing the estimates given by smokers to the actual figures for their brands, Kozlowski and colleagues (1998b) found that only 3% of smokers could correctly state (within 2 mg) the amount of tar in their cigarettes. In fact, few knew where to look to learn the tar content (Kozlowski et al., 1998b). Although 67% of smokers said that they would look on their cigarette package to find the tar content, only 6.3% of cigarettes sold have this information on the package. When asked how many Light cigarettes someone would have to smoke to get the same amount of tar as from one Regular cigarette, the most common response from about half of those surveyed was, “don’t know”; about 40 percent said two cigarettes or more and less than 10 percent said one cigarette (Kozlowski et al., 1998a).

There are significant differences in knowledge and reported use of tar numbers among different types of smokers. For example, when Ultra-Light, Light, and Regular cigarettes were compared, the members of the first group were found to be somewhat more accurate about their

cigarette's tar number (Kozlowski et al., 1998b). Accuracy was shown by 17% of Ultra-Light smokers, 2% of Light smokers, and 1% of Regular smokers. Ultra-Light smokers were also much more likely to say they used this number in making judgments about cigarette safety (Cohen, 1996a, p. 132). Thus, although only 14% of Cohen's overall sample said that they used tar numbers to make such judgments, 56% of the smokers of 1- to 5-mg tar cigarettes said that they determined safety from advertised tar values. Ultra-Light smokers also saw a much bigger difference between the risk of Regular and Light cigarettes than did other smokers (Cohen, 1996a, p. 130). A large majority (83%) of Ultra-Light smokers said that switching from a 20-mg to a 5-mg tar cigarette would significantly reduce health risks, whereas only about 50% of other smokers shared this belief.

Clearly, knowledge about the reported tar values of their chosen brands, about where these values can be found, and about vent holes in cigarettes is largely absent among smokers. Of particular importance is the finding that a large proportion of smokers believe that switching to a lower tar cigarette reduces one's health risks, and since most smokers are only aware of a cigarette's advertised type—'Regular', 'Light', or 'Ultra Light'—and not its tar number, this classification is used as a surrogate to indicate risk. Attention to tar numbers is particularly true among Ultra-Light smokers, a majority of whom say they use these numbers to judge a cigarette's safety.

**Reasons for Smoking or Switching to Light Cigarettes**

A variety of studies have asked smokers about their reasons for choosing to smoke Light or Ultra Light cigarettes or their reasons for switching to such cigarettes. The results show that

the desire to reduce disease risk is one of the main factors guiding these choices. Although it would be desirable to distinguish in this section between initial cigarette choices, switching as a prelude to quitting, switching as a substitute for quitting, and switching following an unsuccessful quit attempt, the available data do not permit such a fine-grained analysis. In the 1987 National Health Interview Survey (Giovino et al., 1996, p. 45), 44 percent of current smokers said that they had at some time switched to a low-tar/low-nicotine cigarette in order to reduce their health risk. Similarly, a national survey found that about 60 percent of Ultra-Light smokers and approximately 40 percent of Light smokers said that they smoked reduced-tar cigarettes “to reduce the risks of smoking without having to give up smoking” (Kozlowski et al., 1998a)[.]

In this same national telephone survey, the reasons given by current daily smokers for why they chose to smoke Ultra-Light/Light cigarettes were: step toward quitting (49/30 percent), reduce risk (58/39 percent), reduce tar (73/57 percent), reduce nicotine (72/50 percent), and prefer the taste (69/80 percent) (Kozlowski et al., 1998a). Very similar figures were obtained in telephone interviews of 266 randomly selected Massachusetts smokers (Kozlowski et al., 1998a). In a recent experiment involving a randomly selected sample of 568 smokers of Light cigarettes, the reasons given for smoking Light cigarettes by people in the control or delayed intervention groups were: step toward quitting (25 percent), reduce risk (43 percent), reduce tar or nicotine (70 percent), and prefer taste (81 percent) (Kozlowski et al., 1999). In these same groups, 39 percent said that Light cigarettes decreased their risk of having health problems.

A national survey of adolescents and young adults in 1993 found somewhat less of an emphasis on health issues, with smokers of Light or Ultra-Light cigarettes saying that they chose

their brand because of taste (33 percent), because they were less irritating (29 percent), because they were healthier than other brands (21 percent), and because they “just liked them” (19 percent) (Giovino et al., 1996, p. 49).

Not surprisingly, national survey of adults in 1986 showed that those who have ever switched in order to reduce tar or nicotine are more likely than those who never switched to believe that some brands are more hazardous than others (54 percent versus 40 percent, respectively) and to believe that their current brand is less hazardous than other brands (33 percent versus 16 percent, respectively) (Giovino et al., 1996, p. 50). Although most smokers recognize that smoking is risky to one’s health, those who chose Light and Ultra-Light cigarettes are more likely to acknowledge the risk than smokers of Regular cigarettes. For example, 85 percent of those who had switched to lower tar/nicotine brands said they were concerned about the health effects of smoking, compared to 70 percent of those who had never made this switch (Giovino et al., 1996, p. 50). People who had switched were also more likely to say that their health had been affected by smoking and that a doctor had advised them to quit (Giovino et al., 1996, p. 48).

Similarly, when the previously mentioned Canadian smokers were asked about the likelihood of developing health problems such as emphysema, asthma, lung cancer, or stroke from smoking for many years, those who had switched from Regular to Light cigarettes cited more problems as very likely than those who started and continued smoking Regular cigarettes (2.13 v. 1.94 problems, respectively) (data from Health Canada, 1995).

Overall, the data are consistent in showing that smokers of Light and Ultra-Light cigarettes are especially concerned about protecting their health. The majority of these smokers

choose Light or Ultra-Light cigarettes in the belief that this will reduce their health risks and/or make it easier to quit.

**The Relationship of Switching to Quitting**

Smokers of low-yield cigarettes not only express greater concern about the risks of smoking, but they also show more interest in quitting. In fact, 38 percent of the smoker respondents to the 1987 National Health Interview Survey who switched to Light cigarettes saw this change as a step toward quitting (Giovino et al., 1996, p. 49), and people who smoked Light or Ultra-Light cigarettes tended to have tried more quitting strategies than those who smoked Regular cigarettes (Giovino et al., 1996, p. 51). Among those smokers who had never attempted to quit, smokers of low-tar cigarettes were more likely to say that they had considered quitting.

Similar interest in both quitting and healthy behavior comes from a study of U.S. Air Force trainees (Haddock et al., 1999). These researchers reported that individuals who said that they had "switched to a lower tar/nicotine cigarette just to reduce their health risk" were more likely to have experienced a successful 24-hour quit attempt in the past, had more healthy diets, and were less likely to take other kinds of risks. These switchers were also less likely to say that they were addicted to cigarettes.

However, there are no data that show switching to reduced-tar cigarettes increases the likelihood of quitting. In fact, given the perceived reduction in risk from smoking Light cigarettes, a switch to such brands may well weaken the motivation to quit. In the Health Canada survey, 32.0 percent of those who started with, and continued to, smoke Light cigarettes made a quit attempt in the previous 3 months, compared to 15.1 percent of those who started with, and

continued to, smoke Regular cigarettes. But of those who started with Regular cigarettes and were currently Light cigarette smokers, only 16.7 percent had tried to quit recently (data from Health Canada, 1995).

A large 1986 national study of adults in the United States who had ever smoked found that those who smoked low-yield cigarettes, regardless of whether they had ever switched to lower yield cigarettes, were less likely to have quit than those who smoked high-yield brands (Giovino et al., 1996, p. 49). Persons who had ever switched brands to reduce their level of tar and nicotine also were less likely to have quit than those who had never switched brands to reduce their level of tar and nicotine.

When Air Force trainee smokers—who had been required to abstain from smoking throughout their basic military training—were contacted 12 months later, only 12.5 percent of switchers and 11.1 percent of nonswitchers were still abstinent (Haddock et al., 1999). Controlling for demographic factors and smoking history, this difference was not statistically significant (odds ratio = 1.04, $p > .5$). Among Air Force trainees, switchers did report smoking fewer cigarettes than nonswitchers. However, in the 1995 Health Canada survey, people who had started smoking Regular cigarettes and currently smoked Light cigarettes did not smoke fewer cigarettes per day than those who stayed with Regular cigarettes.

Thus, even among individuals who had switched specifically because they were concerned about health risks, who had been assisted in long-term quitting by a mandatory abstinence period, or who said they were less addicted to cigarettes than did the nonswitchers, the switch to Light cigarettes prior to the abstinence period did not help them stay abstinent. Switching to Light cigarettes does not seem to be any more of a route toward quitting than simply

staying with Regular cigarettes.

Thus, no data exist that indicate switching to Light or Ultra-Light cigarettes actually assists smokers in quitting.

**Summary**

Overall, the accumulated data are quite consistent. They show that many consumers use the terms ‘Light’ and ‘Ultra Light’ as a guide to the riskiness of particular brands of cigarettes. To a considerable extent, smokers choose Light and Ultra-Light brands because they think that these cigarettes are not as harmful and cause fewer health problems. Particularly, individuals who are most concerned about smoking risks and most interested in quitting adopt low-yield brands.

To determine whether switching helps people to smoke less or to quit, one would ideally examine two groups with the same interest in quitting and the same smoking history. One would compare the group that switched with the group that did not, looking at both cessation and smoking rates over time. In reality, however, those who switch are different from nonswitchers in numerous ways, all of which should facilitate their quitting and reduce the amount that they smoke. Despite these facilitating factors, the data show that switchers to a Light or Ultra-Light cigarette are not more likely to become nonsmokers than are nonswitchers.

Surveys indicate that switching to low-yield cigarettes is viewed by many smokers as a healthier choice. Given the interest in quitting among those who make this choice, their failure to quit at rates any higher than those who do not switch suggests that switching reduces the motivation to stop smoking. Thus, the advertising of brands designated as ‘Light’ or ‘Ultra Light’ misleads smokers as to the benefits these brands offer.

The data collected since publication of the 1996 NCI monograph only reinforce the conclusion reached by Giovino and colleagues (1996) in that volume that the existence of so called ‘Light’ and ‘Ultra Light’ cigarettes has kept many smokers interested in protecting their health from quitting. “The net effect of the introduction and mass marketing of these brands, then, may have been and may continue to be an increased number of smoking-attributable deaths.”(Giovino et al., 1996.)

**Conclusions**

1. Many consumers use the terms ‘Light’ and ‘Ultra-Light’ as a guide to the riskiness of particular brands of cigarettes.
2. Many smokers choose Light and Ultra-Light brands because they believe that such cigarettes are less likely to cause health problems.
3. Individuals who are most concerned about smoking risks and most interested in quitting adopt low-yield brands.

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## Chapter 7. Marketing Cigarettes with Low Machine-Measured Yields

Richard W. Pollay, Timothy Dewhirst

### Introduction

During the early 1950s, scientific and popular articles that presented lung cancer research findings initiated what the tobacco industry termed the "health scare," as consumers became increasingly concerned about the potential health risks incurred from smoking. Companies initially responded to this health scare by introducing filtered products that were accompanied by advertisements with explicit health-related statements. For example, Viceroy® maintained that it provided "Double-Barreled Health Protection" and also claimed that it was "Better for Your Health" in ad copy.

In time, the industry became aware that explicit health claims had the undesirable effects of making health concerns salient or predominant in the minds of consumers, and encouraged consumers to use "healthfulness" as the criterion by which they judged cigarettes. Motivation researchers and other trade analysts advised the industry to shift from explicit verbal assertions of health toward implied healthfulness, an approach that incorporated the use of visual imagery (Pollay, 1989a).

January of 1964 marked the release of the first Surgeon General's Report on smoking, and this event reawakened public concerns about the potential health consequences of smoking. Tobacco manufacturers needed to reduce consumer concerns and the ensuing anxious feelings. Quitting was not an easy option for smokers because nicotine is highly addictive. Switching to a lower (tar and nicotine) yield cigarette became an attractive alternative for many smokers once

they were convinced by advertising that this would be a meaningful step toward health and away from risk. Thus, there was a ready market for "new and improved" cigarettes, or at least for those that seemed to be that way.

This chapter will review recently released documents from the tobacco industry and its consultants, produced during litigation, as well as excerpts from the relevant trade press, for insights into the firms' intentions and actions in marketing their products. Particular attention will be paid to the period of the mid-1970s, the launch period for most of the new generation of low-yield products. It will be shown that advertising for reduced-yield products led consumers to perceive filtered and low-tar delivery products as safer alternatives to regular cigarettes.

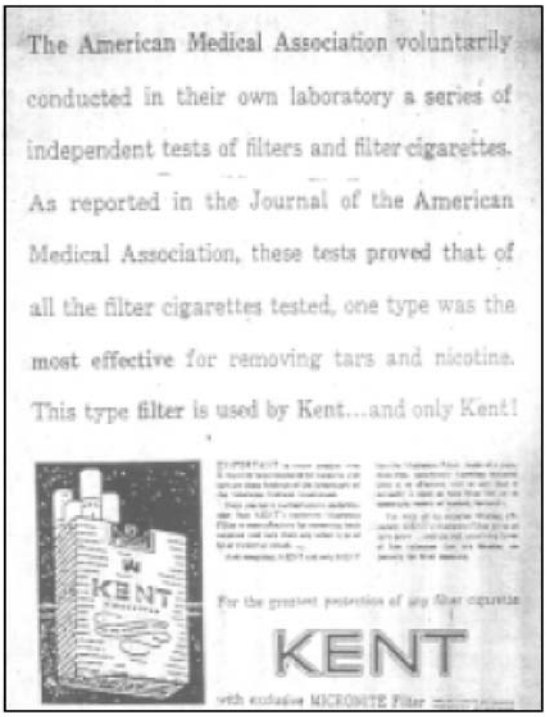
## The 1950s

### Filters Debut as Health Protection

Advertising during the 1950s promoted filters as the technological fix to the health scare. Filters were heralded with various dramatic announcements featuring 'news' about: scientific discoveries; modern pure materials; research and development breakthroughs; certification by the United States Testing Company; implied endorsement by the American Medical Association (see Figure 7-1); "miracle tip" filters; and descriptions of "20,000 filter traps" or filters made of activated charcoal, "selectrate," "millecel," "cellulose acetate" or "micronite" that were variously described as effective, complete, superior, and producing mildness, gentleness, smoothness, etc. In 1958, for example, a press conference was held at New York's Plaza Hotel to launch Parliament® and its new filter, called "Hi-Fi" ("high filtration," as in high-fidelity state-of-the-art sound reproduction of the 1950s).

> "In the foyers, test tubes bubbled and glassed-in machines smoked cigarettes by means of tubes. Men and women in long white laboratory coats bustled about and stood ready to answer any questions. Inside, a Philip Morris executive told the audience of reporters that the new Hi-Fi filter was an event of 'irrevocable significance'. The new filter was described as 'hospital white'." (See Whelan, 1984, p.90)

Figure 7-1
**Kent—Implied AMA Endorsement (Circa 1953)**


The American Medical Association voluntarily conducted in their own laboratory a series of independent tests of filters and filter cigarettes. As reported in the Journal of the American Medical Association, these tests proved that of all the filter cigarettes tested, one type was the most effective for removing tars and nicotine. This type filter is used by Kent...and only Kent!



The purported product benefit of this new filtration was obviously the perceived reduction, if not elimination, of cancer and other health risks. Health benefits were implied through various slogans, such as "Just What the Dr. Ordered" (L&M®), "Inhale to your Heart's Content" (Embassy®), "The Secret to Life is in the Filter" (Life®), "Extra Margin" (of safety protection; analogy to helmets, seat belts, and other safety gear— Parliament®), and "Thinking Man's Filter" (Viceroy®). Other slogans were more implicit, but still provided health inferences to consumers (See Pollay, 1989b).

If nothing else, the high technology attributes of filtration, and its ability to produce healthful conditions in other media such as water, were communicated (see Figure 7-2).

> "The speed with which charcoal filters penetrated the health cigarette market shows the effectiveness of a new concept. The public had been conditioned to accept the filtering effects of charcoal in other fields, and when charcoal was added to cigarette filters it proved to be an effective advertising gimmick." (See Johnston, 1966, p.16)

> "Claims or assurances related to health are prominent in the (cigarette) advertising. These claims and assurances vary in their explicitness, but they are sufficiently patent to compel the conclusion that much filter and menthol-filter advertising seeks to persuade smokers and potential smokers that smoking cigarettes is safe or not unhealthful." (See the Federal Trade Commission, 1964, p. 72)

The result in the marketplace was a dramatic conversion from 'regular' (short length; unfiltered) products to new product forms (filtered; king sized; 100 mm). Spending on advertising nearly tripled from 1952 to 1959, largely through promoting the virtues of the new filtered products, thereby enticing smokers to switch from their regular unfiltered products to filtered and, presumably, safer brands or product-line variants.

> "He had abandoned the regular cigarette, however, on the ground of reduced risk to health. . . . A further consequence of the 'tar derby' was the rapid increase in advertising expenditures during this period. Advertising expenditures in selected media jumped from over $55 million in 1952 to approximately $150 million in 1959." (See Pepples, 1976, p. 1)

Figure 7-2
**Tareyton—Charcoal Filter (1972)**

**Females and Older Smokers as Early Filter Smokers**

Gender and age were predictors of who adopted the new filtered products. Females converted more readily than males, and older concerned smokers adapted more readily than young starters (O'Keefe and Pollay, 1996). Thus, Philip Morris anticipated that females would be the largest potential market for a "health cigarette" following the release of the 1964 Surgeon

General's Report:

> "Women, and particularly young women, would constitute the greatest potential market for a health cigarette." (See Johnston, 1966, p. 1)

Psychology-based consumer research conducted for Brown & Williamson implied that the females who smoked filters were normal, whereas the males seemed unusually anxious. In 1967, this research described women who smoked filter cigarettes as "neither rebels (like women who smoke plain cigarettes), nor insecure (like females who smoke menthols)." The males who smoked filter cigarettes were described as ". . . apprehensive and depressive. They think about death, worry over possible troubles, are uneasy if inactive, don't trust others." (See Oxtoby-Smith, Inc., 1967, pp. 24-25.)

**Filter Cigarette Marketing to Males**

Once the public accepted filters as an adequate response to at least assuage their worst fears, there was a market opportunity in providing males with filtered products that delivered 'full flavor':

> ". . . [O]nce the consumer had been sufficiently educated on the virtues of filters, a vacuum was created for a filter with taste; this vacuum was filled by Winston and Marlboro." (See Latimer, 1976, p. 5.)

Some internal industry documents from the 1970s portray the filters of the 1950s and the associated risk reduction as essentially 'cosmetic':

> ". . . [T]he public began to accept filters as a way to reduce the *cosmetic* risks of smoking and the attendant 'ego-status' risk of appearing to have an immoral, unclean habit." [Emphasis added.] (See Latimer, 1976, p. 3.)

**The Early Tar Wars**

The period from the mid-1950s until the mid-1960s was tumultuous for the industry. Various new filter products were launched, many competitive advertising claims used different standards of measurement, and the Federal Trade Commission (FTC) guidelines concerning what was permissible in cigarette advertising changed as well. Episodes of intense competitive rivalry of claims and counter-claims about cigarette yields were dubbed the "tar derby" or "tar wars" within the trade, and the ensuing publicity in the popular press affected the marketplace. Some manufacturers took advantage of these dynamics to present their cigarettes as "healthy" to the public during a period of intense advertising claims, then capitalized on such reputations while selling products that were actually quite high in tar and nicotine yields.

> "In 1955, the FTC, reacting to conflicting claims as to tar and filtration, has imposed 'Cigarette Advertising Guides' banning all mention of tar, nicotine and filtration 'when not established by competent scientific proof'. This put a stop to such claims in advertising. In July and August of 1957, the Reader's Digest published two articles with figures on tar and nicotine mentioning Kent by name. The August article, written with Kent's assistance was practically an ad for Kent. In 90 days, Kent's sales leaped from 300 million to 3 billion per month. This article broke the dike and set off the famous Tar Derby. Over the next 4 years, tar levels were drastically cut. Marlboro dropped from 34 mg. tar in 1957 to 25 mg. in 1958 and 19 mg. in 1961." (See Cunningham and Walsh, 1980, p. 11)

Kent®, whose advertising of its asbestos-based "Micronite" filter had been very effective, engaged in a series of product revisions in the 1950s. With each iteration, the Kent® product yielded more and more tar and nicotine, and this pattern continued into the 1960s. Similar filter "loosening" was the subject of U.S. Congressional inquiry (Blatnik, 1958).

> "In mid 1960, the FTC called off the Tar Derby, rigidly prohibiting tar and nicotine claims. Some of the new low tar brands disappeared. Soon thereafter, the brands stopped reducing tar levels and, indeed, began to raise them. Kent, for example, went from 14 mg. in 1961 to 16 mg. in 1963 and 19 mg. in 1966. The

> FTC prohibition ended March 25, 1966 initiating a new phase in Hi-Fi development. Lorrillard [sic] decided not to reduce Kent's tar level again. Instead it put out True." (See Cunningham and Walsh, 1980, p.12.)

**Medicinal Menthol**

During this tar derby period, new menthol-filtered products were introduced, such as Salem®, Newport®, and Oasis®. Manufacturers of these new products capitalized on the reputation that menthol already had, due to its use in cold remedies and related medicinal applications, and the history of "pseudo-health" claims made in earlier menthol cigarette advertising. The Kool® brand had long been promoted as a medicinal product with would-be remedial properties that could make the cigarette suitable when smokers were suffering from coughs, colds, sore throats, etc.:

> "Kool not only remained, but was actively positioned as a remedial/medicinal type product throughout the 1950's." (See Cunningham and Walsh, 1980, p. 9.)

Salem® was introduced in 1956 as the "first truly new smoking advance" (see Figure 7-3).

Figure 7-3
**Salem—First Truly New Smoking Advance (1956)**

> "Salem created a whole new meaning for menthol. From the heritage of solves-the-negative-problems-of-smoking, menthol almost instantly became a positive smoking sensation. Menthol in the filter form in the Salem advertising was a 'refreshing' taste experience. It can be viewed as very 'reassuring' in a personal concern climate. Undoubtedly, the medicinal menthol connotation carried forward in a therapeutic fashion, but as a positive taste benefit." (See Cunningham and Walsh, 1980, p. 9.)

> "During the 'tar derby', menthol styles were perceived as healthier, low 'tar' smokes due to the quasi-medical health claims in menthol advertising. . . the first true menthol hi-fi was True Green, introduced in 1967. . . By 1974, menthol hi-fi styles had a 27% share of the hi-fi category—close to the proportion of menthols to all styles." (See Chambers, 1979.)

## <u>The 1960s</u>

### Implications of the 1964 Surgeon General's Report

The first Surgeon General's Report on smoking and health in 1964 established cigarette smoking as a cause of lung cancer, at least in males. Philip Morris expressed some regret that the 1964 report did not strongly endorse the filtered products that had been sold to the public as a technological fix:

> "The health value of filters is undersold in the report and is the industry's best extant answer to its problem. The Tobacco Institute obviously should foster the communication of the filter message by all effective means." (See Wakeham, 1964, p. 8.)

### Consumer Guilt and Anxiety

Brown & Williamson's advertising agency and market research contractors recognized consumers' mass sense of being addicted, as well as the ensuing conflict, guilt, anxieties, and need for reassurance:

> "Most smokers see themselves as addicts . . . the typical smoker feels guilty and anxious about smoking but impotent to control it." (See Oxtoby-Smith, Inc., 1967,

p. 6.)

> "Psychologically, most smokers feel trapped. They are concerned about health and addiction. Smokers care about what commercials say about them. Advertising may help to reduce anxiety and guilt. . . Brand user image may be critical in influencing shifts in brand loyalty." [Emphasis in original.] (See Oxtoby-Smith, Inc., 1967, p. 14.)

> [People who smoke filter cigarettes] ". . . may be receptive to advertising which helps them escape from their inner conflicts about smoking." (See Oxtoby-Smith, Inc., 1967, p. 23.)

> "While unquestionably smokers are concerned about the tar and nicotine contents and the filtration effectiveness of their brands, nevertheless, both on the surface and even to some extent unconsciously, they appear to be resisting open involvement with this 'frightening' element of smoking."(See Alex Gochfeld Associates, Inc., 1969, p. 9.)

Figure 7-4
**Kent—Voice of Wisdom (1955)**

Some brands were less successful than others when trying to directly address consumer conflicts. Kent®, for example, used a visual portrayal of a smoker's conscience, and risked their ad being experienced as a nagging message (see Figure 7-4).

"[T]he psychological blinders that smokers have donned, consciously or unconsciously . . . advertising which stresses tar and nicotine content was received less enthusiastically . . . even in the Silva Thins commercial where this theme was the major aspect of the spoken message, a large number of people effectually [sic] blocked it out of their consciousness retaining only the total image of the

story shown on the screen." (See Alex Gochfeld Associates, Inc., 1969, pp. 72-73.)

**Segments of Concerned Consumers**

In order to provide a "foundation upon which marketing and advertising executions can be built," Lorillard did a market segmentation analysis.

> "One of the most important revelations of the present study was the identification of four market segments in the smoker market who are distinct in terms of their desires in cigarettes and their psychological profile.
>
> The fundamental basis upon which the market segments were divided was their desires in the 'ideal cigarette'. After the market segments were divided in terms of their smoking needs, they were then further analyzed in terms of their demography, smoking behavior, and their personality profile." [Emphasis in original.] (See Kieling, 1964, p. 2.)

The consumer segment most appropriate for Kent® was described in substantial psychological detail. Despite the label of "social conformist," of central concern to these smokers were health consequences:

> "Segment B, the social conformists, represents the prime potential market for development of Kent's share.
>
> Compared with the rest of the market, Segment B is less concerned about smoking enjoyment and more concerned about the health aspect of cigarettes. He cares particularly about a cigarette's filter, its king size, and its association with health.
>
> Type B is a self-controlled person who is willing to compromise and give up immediate physical gratification for longer range objectives; he is a thinking person who acts deliberately, and is most likely to sacrifice some of the enjoyment of smoking in the interest of health, about which he is highly concerned. . . These requirements appear to be compatible with Kent's current image.
>
> The other psychological requirement of Type B is the need for social benefits through association with 'educated moderns'. . . 'educated moderns' include the active, modern people, college graduates, and professionals such as lawyers, doctors, etc." [Emphasis in original.] (See Kieling, 1964, pp. 3-5.)

Given that Kent® had a longestablished association with 'health' from more than a

decade's worth of health-themed advertising, the advertising deliberately offered reassurances to targeted consumers of being seen as "educated moderns," with the health promises subtly made:

> "In the present climate of opinion after the Surgeon General's Report, it may be desirable to offer reassurance on 'association with health' in Kent's advertising." [Emphasis in original.] (See Kieling, 1964, p. 14.)

**The "Illusion of Filtration"**

In their 1966 analysis of the market potential for a 'health' cigarette, Philip Morris recognized that while a large proportion of smokers had health concerns, they could be assuaged by products with largely illusory filtration systems. This was helpful since Philip Morris also knew that they had to keep delivering nicotine to those already addicted, as well as to those that they hoped would become addicted. The report's conclusions include the following:

> "1. A large proportion of smokers are concerned about the relationship of cigarette smoking to health. . .
>
> 9. Mere reduction in nicotine and TPM [total particulate matter] deliveries by conventional methods of filtration would not be a sufficient basis for launching a new cigarette.
>
> 10. The illusion of filtration is as important as the fact of filtration.
>
> 11. Therefore any entry should be by a radically different method of filtration but need not be any more effective." (See Johnston, 1966, pp. 1-2.)

Within this report, Philip Morris' analyst captured the dilemma between health concerns and nicotine delivery felt by both smokers and manufacturers:

> ". . . [A]ny health cigarette must compromise between health implications on the one hand and flavor and nicotine on the other . . . flavor and nicotine are both necessary to sell a cigarette. A cigarette that does not deliver nicotine cannot satisfy the habituated smoker and cannot lead to habituation, and would therefore

almost certainly fail." (See Johnston, 1966, p. 5.)

Many early brands had been sold with filters that were essentially cosmetic, without meaningful filtration. U.S. Congressional investigations in 1958 found reversals in which some firms' filtered products delivered even more tar and nicotine than their unfiltered traditional products. Reversals occurred even within brand families, with Brand X filtered versions yielding higher tar and nicotine than the unfiltered Brand X products that they ostensibly improved upon (Blatnik, 1958, pp. 45-49).

**Fear that Low-Yield Cigarettes Would Allow the Consumer to Wean from Nicotine**

In 1969, R. J. Reynolds articulated concerns about reducing nicotine delivery and also maintaining a continuing profitable enterprise. The company saw nicotine as the sine qua non of smoking satisfaction and worried that reducing the delivery of nicotine to consumers might have the "self-defeating consequences" of weaning them away from smoking and letting them off the nicotine hook:

> "In its search for 'safer' cigarettes, the tobacco industry has, in essentially every case, simply reduced the amount of nicotine . . . perhaps weaning the smoker away from nicotine habituation and depriving him of parts of the gratification desired or expected. . . Thus, unless some miraculous solution to the smoking-health problem is found, the present 'safer' cigarette strategy, while prudent and fruitful for the short term, may be equivalent to long term liquidation of the cigarette industry." (See Teague, 1969, pp. 9-10.)

This concern with possible 'weaning' was still being expressed later by the British American Tobacco Co. when looking ahead to the 1980s:

> "Taking a long-term view, there is a danger in the current trend of lower and lower cigarette deliveries—i.e., the smoker will be weaned away from the habit. . . Nicotine is an important aspect of 'satisfaction', and if the nicotine delivery is

> reduced below a threshold 'satisfaction' level, then surely smokers will question more readily why they are indulging in an expensive habit." (See British American Tobacco Company, 1976, p. 2)

## The 1970s

### Early High-Filtration (Hi-Fi) Brands

> "Carlton and True appeared in the mid 1960's, and Doral and Vantage followed shortly after. . . Lights and milds [sic] versions of full-taste brands proliferated in the early '70's, accounting for 31.6% of hi-fi business by 1975." (See Chambers, 1979.)

By 1973, it was clear to industry participants that a significant number of brands shared certain characteristics that led them to be described as a "new low-delivery segment." Precise relevance to tar and nicotine levels was elusive, in part because some brands like Kent® and Parliament® were perceived by consumers as being low in delivery due to their product and advertising histories, even though they were no longer in fact low in delivery. Listed below are some of the guidelines used by Philip Morris to define low-delivery brands for that company's internal purposes:

> "2. All brands in the segment have advertising, if any, focussed on low delivery. No other brand has advertising focused on low delivery.
>
> 3. Some brands in the segment have tar and nicotine numbers on their packs. No brand not in the segment has tar and nicotine numbers on its pack.
>
> 4. Some brands in the segment have unusual construction filters or dilution holes. No brand not in the segment has either of these characteristics. . .
>
> 6. Brands in the segment which are extensions of 'flavor' brands have names which imply low delivery: Marlboro Light, Kool Mild, Pall Mall Extra Mild, Lucky Ten, etc.
>
> Note that Kent and Parliament do not qualify for this new low delivery segment on any of the criteria above. One can still argue, however, that in the

> minds of consumers Kent and Parliament are low delivery cigarettes . . . consumer opinion should be the ultimate criterion for market segmentation." [Emphasis in original.] (See Tindall, 1973, p. 16.)

**Nicotine as a Product Design Feature**

During the early 1970s, Philip Morris was internally expressing confidence in its ability to selectively reduce tar yield while continuing to deliver the all-important nicotine:

> ". . . [T]he tar deliveries of the currently best selling cigarettes might be reduced somewhat, leaving nicotine as it is, without any significant overall decrease in the cigarettes' acceptability." (See Schori, 1971, p. 1.)

R. J. Reynolds was following a similar line of thought in focussing its product development on nicotine delivery:

> "If nicotine is the <u>sine</u> <u>qua</u> <u>non</u> of tobacco products and tobacco products are recognized as being attractive dosage forms of nicotine, then it is logical to design our products—and where possible, our advertising—around nicotine delivery rather than 'tar' delivery or flavor." [Emphasis in original.] (See Teague, 1972b, p. 3.)

> "In today's market it is reasonable to believe that, given the choice, the typical smoker will chose [sic] and use the cigarette which delivers the desired, required amount of nicotine, with satisfactory flavor, mildness and other attributes, accompanied by the <u>least</u> amount of 'tar'." [Emphasis in original.] (See Teague, 1972a, p. 4.)

By 1976, the R. J. Reynolds Market Research Department (MRD) had joined the research and development (R&D) effort with a clear statement of their intent to maximize the nicotine satisfaction while maintaining high profitability by using conventional filters and packaging:

> "MRD and R&D have been working on a sophisticated consumer product testing program to help us ensure that we select the best blend alternative for our brands to optimize physiological satisfaction." (See Fitzgerald et al., 1976, p. 1.)

> "Our top priority is to develop and market low 'tar' brands (12 mg. 'tar' and under) that: Maximize the physiological satisfaction per puff—the single most

> important need of smokers. . . [and] yield higher profitability which means conventional filters and soft packaging for high speed production efficiencies." (See Fitzgerald et al., 1976, p. 38.)

A few years later in 1981, British American Tobacco, the parent company of Brown & Williamson, maintained that, ". . . effort should *not* be spent on designing a cigarette which, through its construction, denied the smoker the opportunity to compensate or oversmoke [sic] to any significant degree." [Emphasis added.] (See Oldman, 1981, p. 2.)

## Consumer Reactions and Behavior

### *Consumer Ignorance and Confusion*

During the 1970s, additional evidence of consumer confusion, misinformation, rationalizations, and the corresponding role played by advertising was gathered by multiple firms. Market researchers for industry members and their advertising agencies were not even confident that consumers knew what they were talking about when referring to the 'taste' of a cigarette:

> ". . . [I]t is almost impossible to know if the taste smokers talk about is something which they, themselves attribute to a cigarette or just a 'play-back' of some advertising messages." (See Marketing and Research Counselors, Inc., 1975, p. 2.)

Apparently, even the so-called 'taste' of a product is greatly influenced by the brand and its reputation. Merit®, as a free-standing brand, had difficulties in being perceived as flavorful, whereas in contrast, product line extensions like Marlboro Light® had the advantage of being perceived as more flavorful due to the taste reputation of the 'parent' brand:

> ". . . [W]e talked to consumers about Merit's image and advertising. They told us that Merit, like other free standing low tar brands such as Kent, Vantage, Carlton, etc., were perceived to be weaker and have less taste than the line extension low tars: like Marlboro Lights, Winston Lights, Camel Lights. Apparently, these line extension low tars share the taste heritage of their parent full flavor brands." (See

Philip Morris, 1990, pp. 13–14.)

In 1974, Kenyon & Eckhardt Advertising studied "recently starting smokers" for Brown & Williamson:

> "The purpose of this research was to gain insight into the perceptions, attitudes and behavior of younger, recently starting smokers regarding initial product usage, current smoking and health concerns. In addition, an effort was made to determine reactions to alternative product positionings [sic]." (See Kenyon & Eckhardt, 1974, p. 1).
>
> "Health concerns exist among younger smokers. . . One type of smoker rationalized smoking as a pleasure that outweighed the risks. Another felt that they didn't smoke enough to be dangerous. A third type rationalized his use of cigarettes by feeling he would quit before it was 'too late'. A final smoker group said that science would come to his rescue." (See Kenyon & Eckhardt, 1974, p. 2).
>
> "In talking to these young smokers about the different brands of cigarettes they have smoked, we found that they have little knowledge and, in fact, a great deal of misinformation on brand yields. In all of the sessions, not a single respondent know [sic] the tar and nicotine level of the cigarette he or she smoked." (See Kenyon & Eckhardt, 1974, p. 7).

Lorillard and their ad agency had the same experience when studying consumers for Kent®. Lorillard, along with Foote, Cone & Belding, encouraged scores of targeted smokers to talk about their lives, their cigarettes, their perceptions, and their feelings about tar content for Kent Golden Light®. They, like Brown & Williamson, found that "practically no one knew" the tar content of their own regularly smoked brands. This implied to these firms the need for ads showing comparative packages and data (O'Toole, 1981, pp. 94-95).

Philip Morris also knew about smokers' ignorance of yield levels in the 1970s. Most consumers were not only ignorant of the facts, but even their general impressions were "not too accurate," despite their faith in the technology of filters as displayed by shifts to filters and hi-fi products:

> "As yet, there is low awareness among smokers of the tar content of their brand. When asked if they knew the specific milligram tar content of their brand, the vast majority (89%) said they didn't know. . . smokers' impressions of whether their brand has high, moderate or low tar content is more on the mark—although still not too accurate." [Emphasis in original.] (See The Roper Organization, Inc., 1976, p. 14.)

*Filters Are Still Perceived as Feminine*

As in the 1950s and 1960s, females and older, health-concerned smokers most readily adopted the new, seemingly low-yield products of the 1970s:

> "The modern low 'tar' market began in the 1960's with such brands as True, Carlton, and Doral . . . initial gains were from females and older smokers." (See Brown & Williamson, circa 1977, p. 4.)

> "The hi-fi smoker demographics tend to be female, older, and have switched from a full flavor style to its counterpart in the hi-fi segment." (See Brown & Williamson, circa 1977, p. 13.)

This was so much the case that the males who smoked these products were suspected of being 'weak' and somehow wimpish or unmasculine in the eyes of consumers who were studied for Brown & Williamson:

> "Only women and weak men smoke True or any of those low tar and nicotine cigarettes." (See Marketing and Research Counselors, Inc., 1975, p. 9.)

In 1974, advertising agency advisors to Lorillard tried to counter this problem with a style of advertising for the True® brand that they felt was more masculine in its tonality (see Figure 7-5).

> "In order to obtain a greater share of males. . . logical, rational approaches. . . a 'reasoning' empathetic approach. . . masculine, 'macho' tonality and appeal. Vantage's tonality can be described as 'laying it on the line' in an aggressive, possibly masculine, open fashion." (See DeGarmo, Inc., 1974.)

This problem of low-yield products being perceived as highly feminine seems to have led R. J. Reynolds to design a marketing strategy that attracted males to a low-yield cigarette that they were developing in 1976:

> "What we want is to portray the feeling and image projected by Marlboro and Kool advertising on a Vantage/Merit type of cigarette. In other words, put 'balls' (two of them) on a low 'tar' and nicotine cigarette and position." [Parenthetical clarification of the male genitalia meaning of "balls" as in original.] (See Hind *et al.*, 1976, p. 63.)

While young male consumers understood that filters seemingly offered improved health prospects, this was in conflict with their desires to appear bold and daring:

> "In discussing how a smoker can limit the risks of serious disease without actually giving up smoking, the respondents clearly recognized the role of high filtration cigarettes. . . the underlying mechanism working against acceptance of high filtration brands in this age group is that the image of these cigarettes is contrary to one of the initial motivations for smoking—to look manly and strong." (See Kenyon & Eckhardt Advertising, 1974, p. 10.)

Figure 7-5
**Vantage "Don't Cop Out"—Macho Tonality (1971)**

*Continuing Consumer Conflicts*

Consumers' conflicted feelings about smoking cigarettes were such that they became poor respondents to Brown & Williamson's research efforts:

> ". . . [S]mokers themselves falter badly when asked to comment on the rewards accruing to them from smoking. . . Smokers are so overwhelmed by the addictive properties of cigarettes and the potential health hazard that they wax virtually

> inarticulate when asked to present a case for the other side. They become guilty and shame-faced." (See Kalhok and Short, 1976, p. 8.)

Smokers were not even aware and/or willing to admit how much they smoked:

> "Smokers' own estimates of their daily consumption levels are extremely unreliable. Many smokers underestimate their actual consumption and certain segments of many populations, notably young people and women, are often reluctant to admit they smoke." (See British American Tobacco Co., 1979, p. 1.)

Brown & Williamson blamed consumer confusion on advertising, in part. When contemplating a possible "index of safety" for cigarettes, Brown & Williamson commented that:

> "Such an index would have merit for the health-conscious smoker, who otherwise may well become confused and increasingly dismayed if one alleged hazard follows another, coupled with the manufacturers' 'prescription for health' through advertising." (See Kalhok and Short, 1976, p. 11.)

Additional market research conducted for Brown & Williamson and its advertising agency, Ted Bates, indicated that ads needed to be carefully designed, lest they challenge consumer denials and rationalizations and trigger consumer defensiveness:

> ". . . [S]mokers have to face the fact that they are illogical, irrational and stupid . . . <u>while an ad that depicts an exciting, invigorating situation could be interesting to the smoke-viewer, the very thin line separating positive excitement from negative-creating situation should never be crossed.</u>" [Emphasis in original.] (See Marketing and Research Counselors, Inc., 1975, pp. 1-2.)

> ". . . [C]ommunication with the smoker that either directly or indirectly violates and belittles this rationalized need will meet smoker's objection—it destroys the rationalization and the smoker would feel naked and rather stupid." (See Marketing and Research Counselors, Inc., 1975, p. 5.)

One of the problems that advertising could address was the declining social esteem of smokers, helping them to avoid shame and guilt:

> "Over the period of 20 years, the public and the private image of the smoker (though exceptions may be found among teenagers starting to smoke) has changed from being one of an individual exulting in his positive strength, masculinity and

> acceptance in the community, to that of a weak and dependent slave, with prospects of illness, however distant these may be, unnerved by his children's forebodings [sic], and without strength to quit." (See Kalhok and Short, 1976, p. 14.)

In discussing the "elements of good cigarette advertising or how to reduce objections to a cigarette," this point was reiterated while stating that "there are not any real, absolute, positive qualities and attributes in a cigarette," as noted in the following:

> "Most advertising for other products presents real, or at least accepted, benefits, values, attributes, end-results, etc., of the product it 'pushes,' sells. Cigarette advertising can not do the same. There are not any real, absolute, positive qualities and attributes in a cigarette and no one, even the most devout smokers, could believe any glorification or lies about it. . . The more a cigarette ad is disbelieved, the more it 'fights' the defense mechanism of the smoker—the more the smoker feels challenged. . . The picture, situation presented and the copy should be ambiguous enough to allow the reader to fill-in his/her illogical-logic which are the results of each individual defense-mechanism." (See Marketing and Research Counselors, Inc., 1975, pp. 12-13.)

**Image of Health**

It was important to the industry that certain cigarette brands continued to appear to be 'healthy', even if this was an image or illusion, and even if the manufacturing technology did not yet allow for the control of smoke toxicity:

> "Looking further down the road, the possibility exists that . . . filters might offer a selective means of controlling smoke toxicity. Well before that date, however, **opportunities exist for filter and cigarette designs which offer <u>the image</u> of 'health re-assurance'."** [Emphases added.] (See British American Tobacco Co., 1976, p. 6.)

**New Product Activity**

Philip Morris had seen the competitive value of a so-called "health cigarette" following the first Surgeon General's Report on cigarettes in 1964. Over the course of the next 12 years,

Philip Morris worked on such a product, culminating in the 1976 product launch of the Merit® brand. Just as with Philip Morris' earlier efforts in the 1950s to develop and consumer-test the Marlboro® product, packaging, and promotion, the product development process for Merit® was as much focused on consumer and market testing as on product technologies, per se. The final market launch strategies used in 1976 gave particular emphasis to the choice of the name Merit®, obviously communicating apparent virtue, and used an advertising style that made this product development seem eminently scientific and newsworthy and less like an ad (see Figure 7-6). The product launch strategy included a very high level of advertising investment ($45 million in 1976) to support a "multi-media blitz."

Figure 7-6
**Merit Science Works—"Enriched Flavor" (1979)**

"The objective of the advertising campaign was to establish enough credibility to overcome smoker skepticism towards low-tar good taste claims. The name 'MERIT' was chosen because it was short, to the point, and it reflected the consumer appeal of good taste at low tar." (See John and Wakeham, 1977, p. 13.)

> "Merit was the primary focus of the sales force for a full year. . . We spent $45 million on advertising—remember $45 million in 1976! This was a record amount for a new brand introduction. . . Creatively, we used provocative headlines and important looking copy which looked like it had real news value. Tar/taste theory exploded!—Smoke cracked!—Taste barrier broken!" [Emphasis in original.] (See Philip Morris, 1990, p. 4.)

This Merit® launch effort, and its stunning success, led to a rash of similar competitive efforts:

> "Merit's introduction gave birth to a series of me-too's. . . 'Fact' was introduced in 1976. . . RJR tried to counter Merit's technological enriched flavor story with their all natural 'Real' launched in mid 1976. . . 'Decade', which was launched on the platform of 'the cigarette that took 10 years to create'. . . Later, Barclay was introduced." (See Philip Morris, 1990, p. 5.)

*Marketing of Reduced Gas Phase Cigarettes*

Brown & Williamson's introduction of the Fact® brand was described by a company spokesman as "a typical new product introduction as compared to Philip Morris' sudden national blitz for Merit. . . Fact is directed to the educated, concerned smoker. Our copy is straightforward and direct, and there is no gender differentiation or symbolism." (See Brand Report 12, 1976, p. 146.) Fact® was using the "Purite" filter to filter gases, but needed to first inform consumers that gases were an issue. Their initial effort (see Figure 7-7) was test-marketed in New England and the North Central States, but did not perform well in the marketplace, despite advertising support of about $30 million over 1976-1977. The senior brand manager of Brown & Williamson explained:

Figure 7-7
**Introducing Fact—Low Gas (Before—1976)**

> "The low gas benefit of the product wasn't of interest to the public, and wasn't understood. The advertising and packaging failed to reinforce the flavor aspect of

> the brand. . . The package was perceived by customers as medicinal, like a prescription bottle of Geritol. The tar level wasn't low enough by mid-1976 to allow it to be a talking point in advertising." (See Brand Report 23, 1977, p. 152.)

Brown & Williamson's reconsideration of its Purite gas filter showed a recognition that in having to educate consumers about gas in smoke, they might raise more anxiety than they could resolve with this type of product:

> "While low gas does offer the opportunity to make positive health statements to active and passive smokers alike, it does run the category risk of raising another health issue and perceptively offering lower taste/satisfaction. . . past experiences with Lark and FACT (i.e., good taste and greater health reassurance via a new method) demonstrate the inability to immediately proceed with either of these options." (Brown & Williamson, circa 1977, p. 1.)

*Marketing Cigarettes Without Additives*

R. J. Reynolds' 1976 assessment for their 3-year action plan acknowledged that they were not yet technologically capable of producing products that had reduced tar without the undesirable effect of also having reduced nicotine:

> "In general, methods used to reduce 'tar' delivery in cigarettes lead to a proportionate reduction in nicotine. . . It would be more desirable from our standpoint, i.e., providing satisfaction to the smoker and maintaining his allegiance to smoking if we could reduce 'tar' to whatever target we choose without a proportionate drop in nicotine. . . It will take some time to get there by the approaches we visualize." (See Fitzgerald et al., 1976, p. 91.)

Nonetheless, R. J. Reynolds wanted to participate in the rapidly expanding category of concerned consumers, referred to as "worriers" by the company:

> "[The]. . . 'worrier' segment of the market (17% of smokers are so classified). . . 'Numbers' products have a growing appeal to these smokers. Products in the 1-6 mg. 'tar' range will continue to build successful long-term franchises (e.g., Carlton's growth rate, NOW's immediate acceptance—fostered by the intense industry commitment in 1976 to hi-fi brands)." (See Fitzgerald et al., 1976.)

R. J. Reynolds' product offering was the Real® brand, with a "natural—no additives" claim (see Figure 7-8). This 'natural' position was thought to convey positive features to both full-flavor smokers and those seeking effective filtration and health protection. The Real® concept was described as having, "Broad appeal based primarily on 'natural'/no additives claim. Connotes taste to full flavor smokers, low numbers to hi-fi smokers. No significant negatives." (See Fitzgerald et al., 1976.)

Figure 7-8
**Real Natural (1977)**

When the Real® brand was launched by R. J. Reynolds in 1977, it had a budget of $40 million for "boxcar loads of display materials, more than 25 million sample packages, the biggest billboard overlooking Times Square, the summer long services of 2,000 salesmen. . . and advertising, according to the agency running the campaign, on everything but painted rocks." (See Crittenden, 1977, p. 1ff.)

That same year, Brown & Williamson was scheduled to spend $50 million through the Ted Bates advertising agency on just the product-line extension of Kool Super Light®. The Kool Super Light® campaign was to appear "in every conceivable non-broadcast medium, and even an inconceivable one"—1,500 Beetleboards, i.e., painted up Volkswagen Beetle® cars (Dougherty, 1977).

## Promotional Patterns

*Disproportionate Advertising Budgets*

The enormous advertising budgets used to launch the new low-yield products commanded a very disproportionate share of the firms' total advertising budgets (share of voice, or SOV), and were seen as creating marketplace demand for low-yield products. The advertising spending for new products in 1976-1978 was awesome. New brands and product-line extensions (variations on familiar brands) were introduced with major budgets as follows (Source: Lorillard, Inc., 1980):

| Product | Budget | Year |
|---|---|---|
| Merit® | $44 million | (1976) |
| Now® | $23 million | (1976) |
| Fact® | $20 million | (1976) |
| Real® | $29 million | (1977) |
| Decade® | $24 million | (1977) |
| Camel Light® | $25.3 million | (1978) |
| Carlton® | $15.3 million | (1976) |
| Vantage® | $20.6 million | (1976/1977) |
| Kent Golden Light® | $21.0 million | (1976-1978) |
| Marlboro Light® | $20.1 million | (1976-1978) |

> "The phenomenal growth of hi-fi brands is, in part, a self-fulfilling prophecy. Hi-fi expenditures have grown from 7% SOV in 1972 to 45% in 1977, much faster than actual segment growth. Spending per share point now equals $8.3MM." (See Brown & Williamson, circa 1977, p. 14.)

> "[The]. . . low tar revolution [of 1976ff] is not ignited by a particular event, such as a Reader's Digest article, a Surgeon General's Report, etc.; it happens quietly based on technologically improved products and consumers' desire for a reasonable compromise and the industry's massive advertising support leading category development." (See Cunningham and Walsh, 1980, p. 55.)

> "Lo Fi advertising now (Feb 1980) accounts for only 21% of total—less than a third of 1974's share of voice. Reduced tar brands have increased to 79% share of voice—with ULT's (Ultra Low Tar's) now accounting for 19% of the total. ULT advertising is growing at a faster rate than any other category." (See Lorillard,

Inc., 1980.)

*Executional Aspects*

The advertising executions that communicated the "lightness" theme were 'light' in many dimensions:

> " 'Light-lighter-lightest' were achieved by insistance [sic] on lighter presentations—product story imagery—white packs—pale colours—mildness dominated copy." (See British American Tobacco Company, circa 1985, p. 13.)

This tactic of using color and imagery to connote product 'lightness' had been used earlier with the introduction of Marlboro Light® in 1971 (see Figure 7-9).

> ". . . [W]hen Marlboro Lights was first introduced in 1971. . . the advertising was dramatically different. . . first using water color executions, then, big pack shots, a lot of white space and a small cowboy visual." (See Philip Morris, 1990, p. 6.)

Figure 7-9
**Marlboro Lights (1972)**

This means of communicating 'lightness' with white or pale-colored props, settings, and pristine environments wasn't new with Marlboro Light®, and has proven to be a durable execution tactic. For example, Kent® in the early 1960s showed models all dressed in white, with both white props and in a pure white, interior studio environment (see Figure 7-10).

Through most of the 1990s, the Parliament® campaign consistently used models dressed all in white placed in white environments as well as in outside pristine environments (see Figure 7-11).

Artwork for Marlboro Ultra Light® has featured a pristine environment dominated by fresh air and water, with only minimally sized cowboys or horses (see Figure 7-12).

Even the packaging design is important in affecting perceptions of relative safety, as well as taste:

> "Red packs connote strong flavor, green packs connote coolness or menthol and white packs suggest that a cigaret [sic] is low-tar. White means sanitary and safe. And if you put a low-tar cigaret [sic] in a red package, people say it tastes stronger than the same cigaret [sic] packaged in white." (See Koten, 1980, p. 22)

Figure 7-10
**Kent—Black Smokers in Pure White Environment (1964)**

Because of its importance, Brown & Williamson tested 33 packages before choosing the blue, gold, and red design used for its Viceroy Rich Light® brand. Philip Morris heightened the social status appeal of its Benson & Hedges® brand by printing the company's Park Avenue address on the front and back of each pack. R. J. Reynolds gave Now® a "modern, chrome-and-glass look designed to appeal to upscale city and suburban dwellers." Philip Morris' successful Merit® connotes a "flamboyant, young-in-spirit image" (to offset low tar's dull image) with big yellow, brown, and orange racing stripes (Koten, 1980). Most "Light" and "Ultra Light" cigarettes are presented in pure white packaging with minimal adornments.

To supplement and reinforce their advertising efforts, Brown & Williamson conceived of public relations and political activities that encouraged consumers to perceive apparently

independent endorsements of low-yield products. This would reinforce advertising impressions about the virtues of low-tar products with seemingly independent "news" from credible sources.

> "B&W will undertake activities designed to generate statements by public health opinion leaders which will indicate tolerance for smoking and improve the consumer's perception of ultra low 'tar' cigarettes (5 mg. or less). . . Through political and scientific friends, B&W will attempt to elicit. . . statements sympathetic to the concept that generally less health risk is associated with ultra low delivery cigarette consumption. . . B&W would seek to generate spontaneous mainstream media articles dealing with component deliveries, much as the old Readers Digest [sic] articles." (What are the obstacles/enemies of a swing to low "tar" and what action should we take? Minnesota Trial Exhibit 26,185, 1982.)

Figure 7-11
**Parliament Lights White on White in Pristine Environment (1998)**

**Capturing Consumer Concerns**

The continuation of intensive promotion into 1977 involved "a numbers game that boggles the mind while promising to relieve the lungs" (Brand Report 23, 1977, p. 150). Competition was intense, due in part to the high stakes and the relatively few number of switchers. Said Lorillard's Tom Mau several years later:

> "The vast majority of the cigarette consumers are brand loyal. . . Only somewhere around 10% of people switch brands annually. That's not a lot of people. . . To come out with something new and successful is difficult." (See Gardener, 1984, p. 176.)

It was clear to industry observers that the pace of new product launches in the mid-1970s was seeking to capitalize on the health concerns of smokers:

> "The current duel between True and Vantage and between Carlton and Now are other examples of competitive efforts to capitalize on the smoking/health controversy." (See Pepples, 1976, p. 9.)

Figure 7-12
**Marlboro Ultra Light Pristine Environment (1998)**

When the motivations for smoking ultra-low-tar cigarettes were studied by Philip Morris' contractors in 1978, representatives of the Brand Management Group, Marketing Research Department, and the advertising agency all observed the discussion groups from behind a two-way viewing mirror and tape recordings were made available. The discussions were guided by a detailed outline with extensive probing. The findings were that all of the reasons for selecting this product form were health-related:

> ". . . [W]ith respect to ultra low tar brands there appear to be particular additional motivations for smoking this type of cigarette. These include:
>
> A - Voluntary desire for a safer cigarette.
>
> B - Increasing awareness and concern about possible hazards of smoking.
>
> C - Health problem forcing a change to a safer cigarette (as an alternative to not being able to quit).
>
> D - Peer and family pressure to smoke a safer cigarette (as an alternative to not being able to stop smoking).
>
> E - Mental commitment to do something about smoking habits." (See Goldstein/Krall Marketing Resources, Inc., 1979.)
>
> Many consumers considered, tried, and even switched to the nominally lower yield

products, and did so primarily in pursuit of better health:

> "More people have switched brands in the past year, and the largest group of switchers have gone to low tars. Even among those who have not switched to a low tar brand, there is fairly high disposition among smokers to consider switching to one. This is probably attributable to the continuing concern over smoking and health." (See The Roper Organization, Inc., 1976, p. 3.)

> "Results show that almost two-thirds of smokers are 'impressed' by the talk of how cigarettes can seriously affect their health. . . Women are more concerned about smoking and health than men, young people more than older people, whites more than blacks, and the college educated more than those less well educated." [The growth among low tar brands was] ". . . particularly strong among two groups who have traditionally been trend setters in the cigarette market—women and the college educated." (See The Roper Organization, Inc., 1976, pp. 8, 12.)

When asked if and why some brands were thought to be better for health, smokers had believed the idea that the nominally low yields were meaningful:

> "The low tar brands have cornered opinion that to the extent any brands are better for your health, they are. All smokers were asked whether they thought any particular brands were better for your health than others, and if so, which brands. Three in ten of all smokers said some brands were better for health than others, and almost half of the low tar brand smokers said this. The brands named were almost exclusively low tar brands, with the older low tar brands (Vantage, True and Carlton) getting most mentions. Considering the short length of time they have been on the market, both Merit and Now had comparatively good mention." (See The Roper Organization, Inc., 1976, p. 19.)

> ". . . [I]t is the lower tar content of these brands that make people say they are better for health. When asked why the brands they named were better for your health, answers overwhelmingly were concerned with lower tar content." (See The Roper Organization, Inc., 1976, p. 20.)

The reassurance of apparent low yields led many smokers to switch rather than quit:

> "Smokers <u>needed</u> light brands for tangible, practical, understandable reasons. . . It is useful to consider lights more as a third alternative to quitting and cutting down—a branded hybrid of smokers' unsuccessful attempts to modify their habit on their own." [Emphasis in original.] (See British American Tobacco Co., circa 1985, pp. 9, 13.)

> [Many said] ". . . they had tried to quit smoking at some point in time, they do not appear to have cut down the number of cigarettes they are smoking. The only concession that has been made is the switch to an ultra low tar brand. These smokers seemed to be either resigned to the fact or satisfied that they will probably never quit smoking. In point of fact, smoking an ultra low tar cigarette seems to relieve some of the guilt of smoking and provide an excuse not to quit." (See Goldstein/Krall Marketing Resources, Inc., 1979, p. 12.)

The True® campaign in the 1970s spoke directly to the desire to quit, portraying quitting and smoking True® as equivalent alternatives (see Figure 7-13).

An important strategic reason for adding low-yield products to a product line, also known as a brand family, was to retain the patronage of consumers as they aged and became more concerned about their health:

> [Developing] ". . . new products in the higher end of the reduced tar category. . . is especially important for Lorillard's long term growth. Younger smokers (less than 35) are smoking products in the higher end of the reduced tar segment and lo-fi. These consumers will move down the tar spectrum, as they get older, with the probability of staying with the line extensions of products consumed in their youth." (See Mau, 1981, p. 7.)

Figure 7-13
**Quit or Smoke True as Equivalent Options (1976)**

**Lessons Learned About Advertising**

Tobacco manufacturers saw advertising, and marketing efforts more generally, as vital to how consumers perceived the products and themselves; these efforts ultimately determined how well various firms succeeded. Lorillard listed

marketing's psychological import right alongside of the product's capacity to deliver the physiological stimulation of nicotine.

> ". . . [L]et me try to define the elements of product acceptance (given sales distribution and trial) as they relate to tobacco products. . . The value or price of the product is a factor. . . The second element in acceptance is psychological. One principle component of this element arises from our marketing effort. . . The third element in acceptance is physiological, being comprised largely of the nicotine-induced stimulation." (See Spears, 1973, pp. 2-3.)

With experience, members of the industry realized that the best advertising gave filter smokers ego reinforcement, and didn't focus solely on nominal filter effectiveness. This might be appropriate when introducing new product concepts (e.g., filters), but once the concept was understood, it was better to avoid any direct addressing of health aspects.

> "1964-1972—The beginning of the high filtration derby. . . In this type of environment, good new product copy directly addressed the health arguments by focusing on lowered tar and nicotine while also claiming to retain real tobacco taste." [Emphasis in original.] (See Latimer, 1976, p. 4.)

> "Less effective copy during this period continued to focus on the filtration process (e.g., selectrate filter, charcoal filters, accu-ray, etc.) or vacillated between emphasis on taste and emphasis on filter." (See Latimer, 1976, p. 3.)

Brown & Williamson articulated the dual objectives of good advertising—providing reassurance about healthfulness (without, of course, doing so in a heavy-handed way to induce defensiveness) and also providing a socially attractive brand image that the smoker could acquire when buying and displaying the package:

> ". . . [T]he average smoker often seeks self-justification for smoking. Good cigarette advertising in the past has given the average smoker a means of justification on the two dimensions typically used in anti-smoking arguments: 1. High performance risk dimension. . . . 2. Ego/status risk dimension.
>
> Cigarette advertising. . . provides only justification/rationalization for those who already smoke. . . The smoker's cigarette brand choice process is largely an exercise in risk reduction. For some smokers reduction in physical

> performance risk is paramount, for others reduction in 'ego/status' risk comes first. . . All good cigarette advertising has either directly addressed the anti-smoking arguments prevalent at the time or has created a strong, attractive image into which the besieged smoker could withdraw." [Emphasis in original.] (See Latimer, 1976, pp. 1-2.)

The international headquarters of Brown & Williamson's parent firm, the British American Tobacco Co., counseled that new marketing approaches should:

> ". . . [C]reate brands and products which reassure consumers, by answering to their needs. Overall marketing policy will be such that we maintain faith and confidence in the smoking habit." (See Short, 1977, p. 1.)

The advertising campaigns and related communications were central to how this was to be done:

> "All work in this area [communications] should be directed towards providing consumer reassurance about cigarettes and the smoking habit. . . by claimed low deliveries, by the perception of low deliveries and by the perception of 'mildness'. Furthermore, advertising for low delivery or traditional brands should be constructed in ways so as not to provoke anxiety about health, but to alleviate it, and enable the smoker to feel assured about the habit and confident in maintaining it over time." [Emphasis in original.] (See Short, 1977, p. 3.)

This attempt to reassure, but not so bluntly as to raise defensiveness, and to simultaneously offer positive, ego-satisfying, brand imagery, seems to have been a key to the success of some of the pioneering filter products. Even the firms being dominated by the more successful marketing efforts of other firms recognized this. In 1969, American Tobacco noted that:

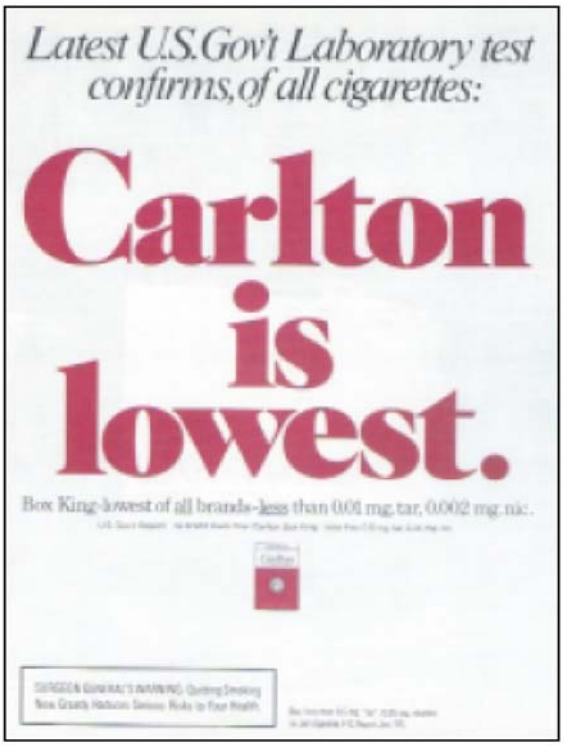
> ". . . [T]hose ads which make a special point of stressing low tar and nicotine appear to enjoy less attention and seem to have less positive impact than those whose advertising has an enjoyment, fun, or 'story' orientation." (See Alex Gochfeld Associates, Inc., 1969, p. 18.)

## The 1980s

### Policing Deceptive Advertising

*Carlton®*

Figure 7-14
Carlton Box "Phantom Brand" (1985)

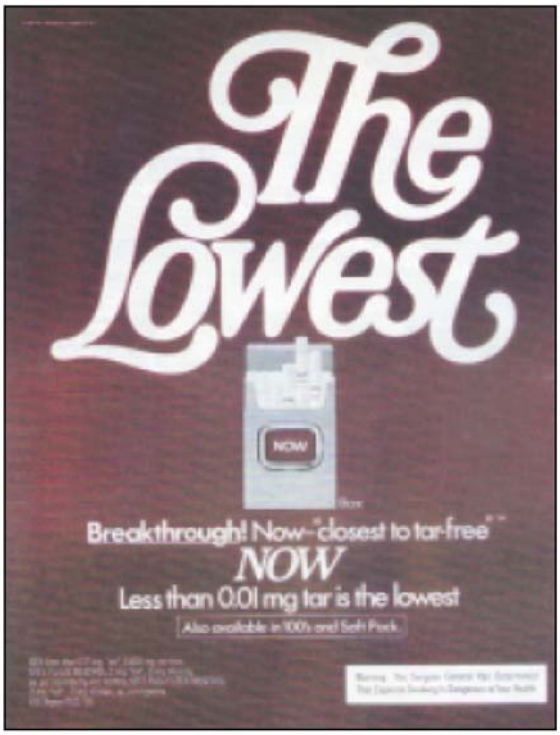



Some very deceptive practices went totally unchecked. Carlton® had the technology for delivering very low machine-measured tar yields, and used these low-yield test results in its advertising. A very desirable brand image was created while promoting Carlton® in a hard box, emphasizing its very low numbers (see Figure 7-14). Unfortunately, the boxed product seems to have been a "phantom brand" and consumers who bought Carlton® in the store got soft packs. Although consumers might well have expected that they were getting the same product in a different box, it was in fact a very different product—one that at times was delivering many, many more times the tar and nicotine than indicated in the ads.

> "FTC's present system further contributes to consumer deception because it allows some cigarette companies to promote heavily a 'box' brand, without adequately distinguishing it from the soft pack of the same brand name, which delivers considerably more 'tar'. In fact, however, the companies produce such a small volume of the box brand as to make it a phantom brand that is rarely found in the marketplace. On the other hand, the soft-pack version bearing the identical brand name and package design but testing at a considerably higher 'tar' level, is the version readily available to the consumer." [Emphasis in original.] (See Pepples, 1982, p. 4.)

Now®, like Carlton®, also featured its very low-yield hard box product in the advertising, while its other product forms delivered many, many more times higher yield rates

Figure 7-15
**Now Box with Substantially Lower Yield Than Soft Pack (1980)**




(see Figure 7-15).

The only effective policing of deceptive advertising of low-tar products came from competitors, rather than the FTC or any other agency. In one case, Lorillard used their data from a taste comparison test to imply a consumer preference for its Triumph® brand over Merit® (see Figure 7-16) and other brands. Both Philip Morris and R. J. Reynolds objected, and had data of their own to support their claims. In the court proceedings, it was learned that the Lorillard survey showed 36 percent favored Triumph® over Merit®, 24 percent rated them even, and 40 percent favored Merit®; these preferences were obtained after subjects had been informed of the products' tar levels. Although nearly a quarter of the subjects had no preference, the enjoined statement took advantage of this and stated, "An amazing 60% said 3 mg Triumph tastes as good or better than 8 mg Merit." (See Philip Morris, Inc., v. Loew's Theatres, Inc., 1980, p. 1.)

*Barclay®*

With the FTC yield data providing an apparent accreditation, consumers were likely to perceive these yield numbers as valid and meaningful. When Brown & Williamson brought the Barclay® product to market in 1981, it did so with an ad campaign that called the product 99

percent tar free (see Figure 7-17). The product's structure, which was described as "extremely easy to design and produce," allowed for so much dilution of the smoke column when tested on machines that it generated phenomenally low-yield data in the FTC test. This caused alarm among Brown & Williamson's competitors, who petitioned the FTC for help. Because of the competitive threat posed by Barclay®, its competitors disclosed to authorities their awareness that the FTC testing procedure was flawed and that the yield data were invalid for human smokers.

Figure 7-16
**Triumph Beats Merit with Deceptive Data (1980)**

> "The next generation of 'Barclay competitors' will be spawned (indeed has already been spawned) in the minds of R&D and marketing people throughout the industry and its suppliers. This generation of products, or the next, could easily be products which will deliver NO 'tar' or nicotine when smoked by the FTC method, and yet when smoked by humans essentially be unfiltered cigarettes. Such products could (and would) be advertized [sic] as 'tar-free', 'zero milligrams FTC tar', or the 'ultimate low-tar cigarette', while actually delivering 20-, 30-, 40-mg or more 'tar' when used by a human smoker! They will be extremely easy to design and produce. . . . Such cigarettes, while deceptive in the extreme, would be very difficult for the consumer to resist, since they would provide everything that we presently believe makes for desirable products: taste, 'punch', ease of draw and 'low FTC tar'." [Emphasis in original.] (See Reynolds et al., 1982, p. 1.)

> [As to the threat Barclay represented:] "Here was a 1 mg. tar product that delivered the taste of a much stronger cigarette. Of course we know how they did it, but to consumers the 99% tar free claim was intriguing. . . Merit responded by supporting Merit Ultra Lights with an $80 million media budget." (See Philip Morris, 1990, p. 8.)

**Important Imagery**

Figure 7-17
Barclay—99% Tar Free (1981)

Once the product concept of low-yield filtration had been communicated, and the previously discussed brands had established some corresponding reputation, their advertising strategies tended toward more visual, image-oriented forms, as these could convey enviable lifestyles, healthy behavior, rewarded risk-taking, and the social class and 'intelligence' of brand users.

When Merit Ultra Light® was introduced in 1983, the advertising program had an $80 million media budget, which did not account for retail promotional efforts. This advertising series featured imagery of large sailing ships in what was termed the "sea" campaign (see Figure 7-18). The executions not only showed young people in an enviable, carefree, affluent lifestyle amidst a pristine environment, they also were careful to avoid any suggestions of danger.

*Vantage®—An Intelligent Choice*

Images and ad copy had to be carefully selected, lest the ads reinforce fears rather than offer reassurance. In 1980, one Vantage® ad made direct reference to "what you may not want" from a cigarette, only to discover that it alarmed some readers about cancer:

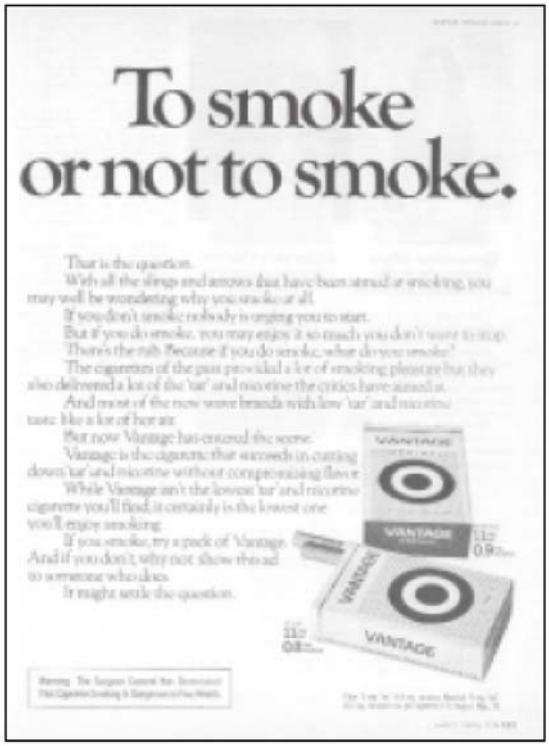
> "The fact that a Vantage ad dares to raise the issue of 'what you may not want' generates defensiveness toward smoking in general, and a feeling of discomfort. The reference to the taste of Vantage is lost; overpowered by the implications of tar, nicotine and cancer." (See R. J. Reynolds-MacDonald, 1980.)

Figure 7-18
**Merit Ultra Light "Sea" Campaign (1986)**

The target Vantage® smoker was "female, white collar, extremely concerned about their health, and would like to quit smoking." A Vantage® ad headlined "To Smoke or Not to Smoke" (see Figure 7-19) ran in both the United States and Canada. It stated that, "Vantage is the cigarette for people who may have second thoughts about smoking and are looking for a way to do something about it." According to an R. J. Reynolds operational plan (1983) and strategic plan (1983-1987), the basic strategy was to present Vantage® as an intelligent choice, "positioning Vantage as the only contemporary choice for intelligent smokers." (See Pollay, 2000.) The tactic was to influence consumer perceptions. A 1983 R. J. Reynolds media plan sought "to establish a consumer perception that Vantage is a contemporary cigarette for intelligent smokers." (See Pollay, 2000.) Apparently, this aim was accomplished because, in 1987, an R. J. Reynolds media plan briefing document stated that the goal for a target audience with a "high amount of quitters" was "to maintain consumer perception that Vantage is a contemporary cigarette for intelligent smokers." (See Pollay, 2000.)

**Psychoanalyzing Merit® and Vantage® Smokers**

Figure 7-19
**Vantage "To Smoke or Not To Smoke" (1974)**




No doubt envious of the success of Merit® among "concerned smokers," as well as that of Marlboro® among starters, R. J. Reynolds commissioned in-depth psychological research from Social Research, Inc., in 1982. The purpose of the survey was to compare the smokers of Vantage® and Merit® based on their smoking histories, their beliefs about the filter and other responses to advertising, and their personalities. In-depth interviews elicited insights into some of the psychological subtleties of respondents from Atlanta, Indianapolis, Denver, Phoenix, and San Francisco. R. J. Reynolds gleaned some useful information from the research:

> "Both Vantage and Merit smokers have similar early smoking histories. . . moving from non-filters to filters, switching to lighter cigarettes to relieve physical symptoms and as an acknowledgement of increased concerns about alleged health hazards." [Emphasis in original.] (See Levy and Robles, 1982, p. 5.)

> "Vantage smokers believe that the filter itself is strong enough to catch these impurities and that the hole structure is such that they will not see so much of the resulting discoloration. These ideas make them think the end product is a milder and more 'healthful' smoke." (See Levy and Robles, 1982, p. 16.)

> "Merit smokers. . . have been influenced by Merit advertising which so single-mindedly proclaims the brand's lowered tar and nicotine. . . Vantage smokers. . . the advertising influenced them by promising real smoking satisfaction from a cigarette, by not focusing so much on the low tar aspect." (See Levy and Robles, 1982, p. 89.)

**Discussion**

**The Value of Official Government Ratings**

Figure 7-20
**Parliament—Endorsement of United States Testing Co. (1958)**

Some members of the industry have long found the appearance of Federal Government vetting to be a desirable factor usable in advertising. For example, the 1958 advertising for Parliament® boasted that it was "the first filter cigarette in the world that meets the standards of the United States Testing Co." (see Figure 7-20). The ad showed the organization's official seal, which included a microscope, and although the ad was generated by a private firm, the seal was readily perceived as acceptance by a Government agency.

Note, too, the Carlton® use of a headline stating that the "Latest U.S. Gov't [sic] Laboratory test confirms. . . Carlton is lowest" in 1985, as seen earlier in Figure 7-14.

The Federal Government's adoption of a "uniform and reliable testing procedure" consistent with the methodology of Philip Morris also seemed beneficial to that corporation. Philip Morris foresaw in 1964 that such test results could be used in advertising copy, as they could communicate that an official Government agency had vetted the products, as well as the possibility that data with a competitive advantage angle could be provided:

> "Apart from possible legal requirements, such a policy would enhance advertising opportunities." (See Wakeham, 1964, p. 6.)

Later, Brown & Williamson saw the benefit to them, even if not to the public, in using

Government evaluations and rating procedures. While the industry preferred to go unregulated, regulation offered some benefits, namely prospects for greater stability and the appearance of Government approval of their products by official testing procedures.

> "The tobacco industry, of course, would prefer no regulation at all. If there must be regulation, the industry is probably better off to have it at the federal level. . . Even expanded regulatory efforts may be shared by the industry to [illegible word] stability in the market or by individual manufacturers to bolster market positions—for example, by capitalizing on official tar and nicotine ratings in cigarette advertising." (See Pepples, 1976, p. 8.)

The promotional value of the FTC data meant that the industry recognized protecting the credibility of the FTC procedure was in its own interests:

> "Inherent limitations of the FTC cigarette testing program, and borderline low-'tar' advertising practices resulting from the way the test results are reported have contributed to substantial consumer confusion and misunderstanding. This situation threatens to erode public confidence in both the FTC's test reports and the industry's advertising claims." (See Pepples, 1982, p. 1.)

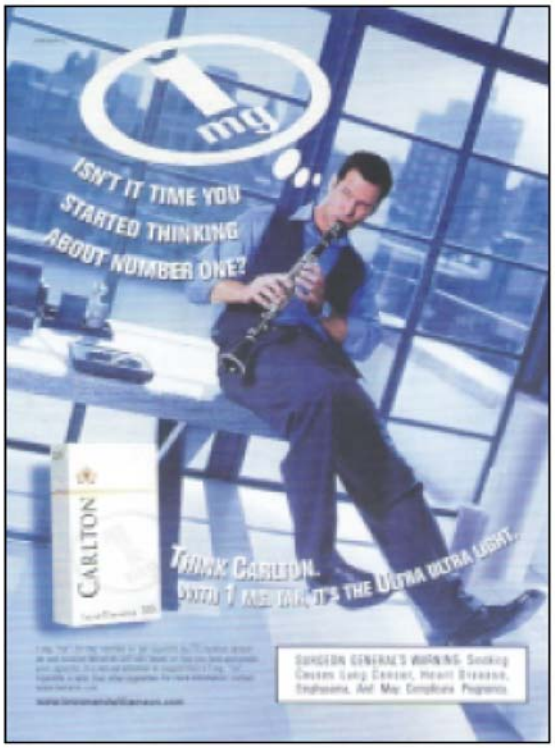
**Poor Information, But Rich Imagery**

Cigarette advertising is notoriously uninformative, with characteristic forms using veiled health implications and pictures of 'health' along with vague promises of taste and satisfaction (Pollay, 1994, pp. 179-184). Occasionally, ads for new technological developments in filter design called attention to the filter, with allusions to filter effectiveness, but almost always without being specific about what constituents of tobacco or its smoke were being filtered, what degree of filtration effectiveness was being realized, or what health or safety consequences were warranted. Only the tar and nicotine information—as mandated by regulation and generated by conventional test methods—is given, without interpretation. For example, Carlton® now encourages smokers to start "thinking about number 1" and smoke its "Ultra Ultra Light"

cigarette (see Figure 7-21).

Many cigarette ads contain no information whatsoever, save for the implicit reminder that a brand exists, e.g., many Marlboro® ads. Some contemporary ads, like a recent campaign for Merit Ultra Light®, take a humorous visual approach to convey that it might be lighter than expected (see Figure 7-22).

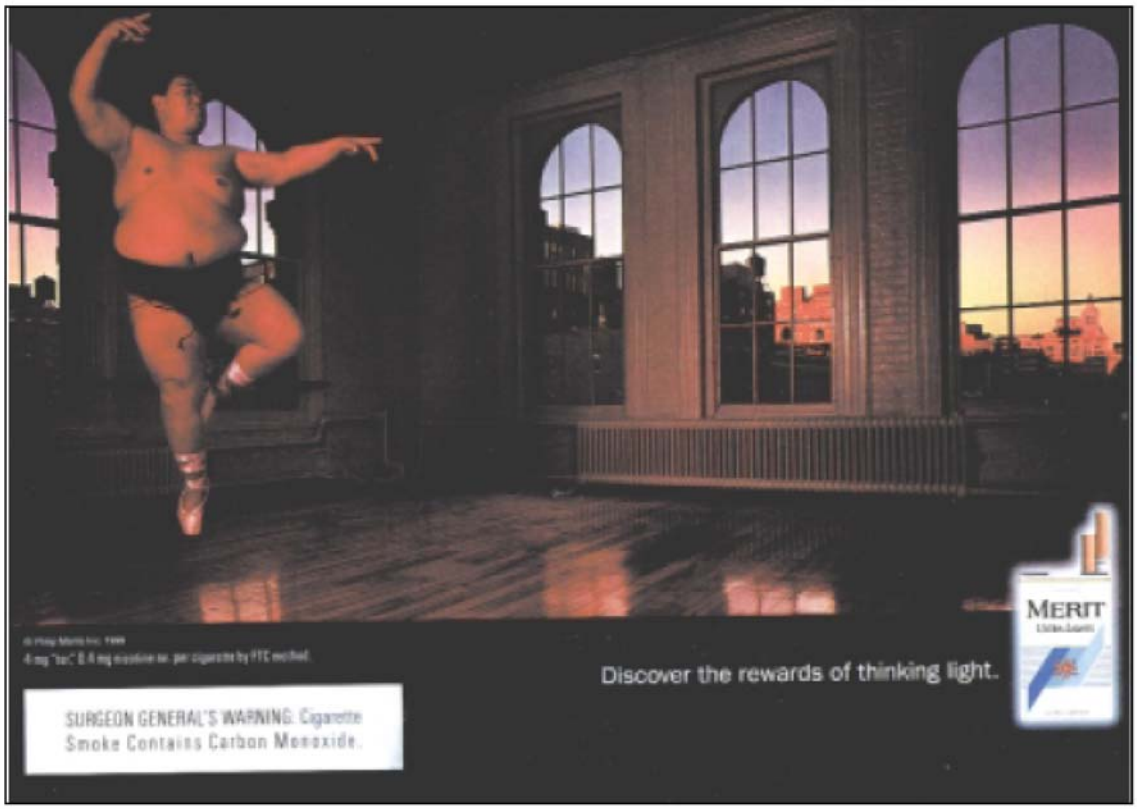
Figure 7-21
**Carlton—"Isn't It Time You Started Thinking About Number One?" (1999)**




**Consumer Information**

The cigarette industry has not voluntarily employed its advertising to inform consumers in a consistent and meaningful way about any of the following: 1) the technologies employed in fabricating the products, 2) the constituents added in the manufacturing processes, 3) the residues and contaminants that may be present in the combustible column, 4) the constituents of smoke that may be hazardous, 5) the addictiveness of nicotine, or 6) the health risks to which its regular consumers and their families are inevitably exposed. Instead, their advertising for low-yield products has relied on pictures of health and images of intelligence, and has misled consumers into believing filtered products in general, and low-tar products in specific, to be safe or safer than other forms without explaining exactly why.

Figure 7-22
**Merit Ultra Lights—Sumo Ballet Lighter Than Expected (1999)**




**Marketing/Advertising Gives Cigarettes Vitality**

While the technological means to produce low-yield products might seem important, to industry insiders it was the marketing sophistication that was even more crucial in determining the relative success of various firms:

> [In contrast to the import of marketing] ". . . technology in the tobacco industry has had virtually no effect on the relative success of the six companies. . . the industry has become so sophisticated in marketing that nontechnical developments, while they might have a large influence on the industry in terms of the types of cigarettes available, would probably do little to shift shares from one company to another." [Emphasis added.] (See Ennis et al., 1984.)

Michael Miles, Chairman and Chief Executive Officer of Philip Morris, defended advertising eloquently in a trade ad:

> "Those of us in the business of building brands don't have to be sold on the importance of advertising or on the necessity for advertising. For me, there is still nothing more exciting in business than to watch effective advertising work its magic in the marketplace. For when a brand is acknowledged and accepted by the consumer, it becomes something much more than what it really is. . . we invest $2 billion annually in advertising. It's worth every penny. For we believe that a strong brand gives the consumer another whole set of reasons—emotional and personal—to act." (See Miles, 1992, p. 16.)

**Summary**

This chapter has reviewed many tobacco industry documents and marketing trade sources. The review revealed the importance of marketing and advertising to the vitality of this industry, and the many means used to create an appearance of healthfulness for various cigarette products, especially those with nominally low yields. Several tactics were employed by the tobacco industry that misled consumers to perceive filtered and low-tar delivery products as safe or safer and as a viable alternative to quitting.

Nicotine delivery is a design feature of cigarette products, and an essential part of the design. Tobacco company documents reflect a fear of consumers becoming weaned from smoking if they are not maintained with sufficient nicotine. Consumer acceptance of products that fail to deliver adequate nicotine satisfaction is also difficult to maintain.

Health concerns of a serious nature have been present among some smokers since at least the 1950s. Females, older, and more highly educated smokers have long been more likely to manifest health concerns. The ramifications of these health concerns are anxieties, conflicts, shame, and guilt, leading to a need for reassurance from advertising. In the 1950s, the promotion

of filters provided this reassurance with very explicit verbal representations about the health protection that they offered. Once the nominal purpose of filtration was well understood by the consuming public, the healthfulness of filters was represented by more implicit means. For example, thinly veiled language ("hospital white" filters; "Alive with Pleasure") and visual "pictures of health" images were used, displaying bold and robust behavior in pristine environments.

The image or illusion of filtration is essential to the selling of cigarettes, whereas the fact of filtration is not. Consumer (smoker) opinion and perceptions are what governs their behavior, not the medical or technological facts known to manufacturers and experts.

Many deceptive practices have been employed over the years (some continue to this date) that foster and perpetuate the illusion that various cigarette brands and product forms are relatively healthy. These tactics include:

- Using Medicinal Menthol. Menthol was introduced into some products capitalizing on its "pseudo-health" benefit, a consumer perception derived from experiencing menthol elsewhere in the medicinal context of cough and cold remedies.

- Loosening Filters. Once established in the public's mind as having effective filtration, Kent® offered several successive generations of product in the 1950s and 1960s that were heralded as "new and improved," but in fact contained ever more tar and nicotine.

- Using High-Tech Imagery. New filters were offered that seemed to be the fruits of scientific research and to have meaningful technological innovations, such as charcoal filters, dual filters, chambered filters, recessed "safety zoned" filters, gas trap filters, etc. Almost none of these specified the hazardous elements being filtered.

- Using Virtuous Brand Names and Descriptors. Brands were given names to imply state-of-the-art technology and/or a virtuous product, e.g., Life®, Merit®, Now®, True®, or Vantage®. Product variations are described in technically meaningless,

but seemingly quantitative, descriptors like “Mild,” “Ultra,” “Light,” or “Super-Light.”

- Adding a Very Low-Yield Product to a Product Line. Some product lines had wide-ranging tar and nicotine deliveries in the same brand family. The best of these levels was used for advertising purposes to reassure consumers while selling other product varieties. In some cases, the best product variant was rarely sold and was known as a phantom brand.

- Fooling the Machines and Using the Data to Fool Smokers. Filters and cigarette papers were developed starting in the 1950s that “air-conditioned” the smoke by diluting the smoke column with side-stream air. When smoked by machines as in the FTC tests, low-tar and low-nicotine numbers resulted, a desirable outcome for promotional purposes—but higher yields were ingested by real smokers, a desirable outcome for maintaining nicotine addiction.

Low-yield cigarettes were heavily promoted. Promotional programs for cigarettes have been lavishly funded in general, with advertising in multiple media. A disproportionate amount of this funding promoted low-yield products when they were introduced in the 1970s.

Little or no meaningful information is contained in promotions for a given cigarette, such as its ingredients and additives, the technology of filtration, the hazardous constituents of smoke, or the health consequences of smoking. Consumer ignorance and confusion has been persistent over many decades. While smokers who switch to low-yield brands manifest faith in their relative healthfulness, few consumers know the true delivery characteristics of the brands that they smoke, and even their general impressions are not very accurate.

Finally, testing of products by official Government agencies, such as the FTC, imbues the industry with a certain level of credibility, while providing Government-rated data that can be used for promotional purposes.

**Conclusions**

1. Advertisements of filtered and low-tar cigarettes were intended to reassure smokers (who were worried about the health risks of smoking) and were meant to prevent smokers from quitting based on those same concerns.
2. Advertising and promotional efforts were successful in getting smokers to use filtered and low-yield cigarette brands.
3. Internal tobacco company documents demonstrate that the cigarette manufacturers recognized the inherent deception of advertising that offered cigarettes as “Light” or “Ultra-Light,” or as having the lowest tar and nicotine yields.

## APPENDIX F

Excerpts from *Change in Nicotine Yields 1998-2004*: *Data Submitted in Accordance with Massachusetts General Laws Chapter 94: Section 307B, 105 CMR 660.000*, a report by the Massachusetts Tobacco Control Program, Massachusetts Department of Health (August 2006), available at http://mass.gov/dph/mtcp/wn_mctp.htm, and from the fact sheet accompanying the report, entitled *Changes in Nicotine Yield: 1998-2004*.

### The Importance of Nicotine Disclosure

The Massachusetts Tobacco Control Program has analyzed data from 1998-2004 and has found that the amount of nicotine inhaled by the average smoker has increased 10% over the seven year period.

Although per capita consumption of cigarettes has declined, the amount of nicotine consumed per cigarette has increased.

* * * *

The 10% increase in nicotine delivered noted in the report is a significant finding because nicotine is highly addictive drug that affects nearly every organ in the body.

### Summary

The amount of nicotine the smoker receives has increased over time. Data reveal significant increases in nicotine yield from 1998 to 2004 for all three tobacco companies (Lorillard, Philip Morris, and RJ Reynolds) and for all types of cigarettes—full flavor, light, mild/medium, ultra-light; and menthol and non-menthol.

* * * *

When compared to 1998 data, 92 of the 116 sub-brands had increased nicotine yields by 2004. Twelve (12) sub-brands decreased and twelve (12) remained unchanged. The average number of milligrams of nicotine delivered increased by 9.9% during this period (from 1.72 milligrams in 1998 to 1.89 milligrams in 2004) . . . .

Similar increases were found for each type of cigarette tested (full flavor, light, mild/medium, and ultra-light), for both menthol and non-menthol cigarettes, for filtered cigarettes and for all companies (PM, RJR, Lorillard).

The total nicotine content of the sub-brands tested increased 16.6%, from 12.9 milligrams in 1998 to 14.3 milligrams in 2004 . . . . Similarly, the milligrams of nicotine per gram of tobacco increased 11.3% from 17.4 in 1998 to 19.4 in 2004 . . . .

**Greater Than Ten Percent (10%) Increase in Nicotine Yield**

Fifty-two (52) of the 116 sub-brands had increases in nicotine yield above 10% for the seven (7) year period. Analysis revealed that RJR's Doral brand had the largest percent increase (36%) in nicotine yield from 1998-2004. Next was RJR's King Size Kool Lights with an increase in nicotine yield of 30%.

* * * *

**Implications of Increased Nicotine Levels**

- Increased levels of nicotine may make it more difficult for the average smoker to quit.
- Similarly, physicians may not be able to determine the proper dosage for Nicotine Replacement Therapy as nicotine levels increase.
- Increased levels of nicotine consumed by pregnant women can lead to developmental delays in childhood as well as low birth weight infants.

- Insulin absorption may be slowed by nicotine leading to increased risk for Type 2 diabetes and increased hospitalizations.

- Medications designed to treat asthma, high blood pressure, and depression can lose their effectiveness in combination with nicotine.

- Exposure to nicotine from second hand smoke has profound effects on children, including cognitive deficits.

* * * *

[The report itself follows. Footnotes and highlighting omitted; sidebars transferred to text or omitted; all emphases in original.]

**Summary**

Since 1997, cigarette manufacturers have delivered nicotine reporting information using testing methods established by the Massachusetts Department of Public Health (MDPH). Massachusetts General Law chapter 94 section 307B and Department of Public Health Regulations 105 CMR 660.000 mandate that cigarette companies report each year to the Department the nicotine yield ratings for all cigarette brands with a U.S. market share of greater than 1.5%.

**Nicotine Yield Testing**

For all brands tested in both 1998 and 2004 (N = 116), the total amount of nicotine delivered to the smoker has increased significantly: 1.72 mg in 1998 compared to 1.89 mg in 2004. These data were also evaluated by manufacturer. For each of the major manufacturers (i.e., Brown & Williamson, Lorillard, Phillip Morris, and RJ Reynolds), the increases in nicotine delivered were significant.

Each manufacturer markets many brands of cigarettes and this data was analyzed by brand. Once again, the increases in nicotine delivered were significant. With the exception of Winston cigarettes, all brands that were tested in both 1998 and 2004 had significant increases in nicotine delivered to the smoker. This includes Basic, Camel, Doral, Kool, Marlboro, and Newport cigarettes.

Cigarette brand families (e.g. Marlboro) with a U.S. market share of greater than 1.5% were required to submit nicotine yield information. In 2004, a total of 179 brands were tested from the four major cigarette manufacturers—Brown & Williamson (now owned by RJ Reynolds), Lorillard, Philip Morris, and RJ Reynolds.

For over 30 years, nicotine yields have been reported from tests using smoking machines. The operation of the machine was an attempt to mimic the smoking behavior of a typical smoker. However, these historical methods have been found to be inadequate1,2 because the machine's puff duration is too short, too little smoke is inhaled, and none of the filter ventilation holes is covered. The MDPH testing method better simulates the smoking behavior of the typical smoker under typical smoking conditions. Using the Massachusetts' method, the amount of smoke inhaled with each puff is increased and the amount of time between puffs is reduced. In addition, 50% of the cigarette filter is covered.

Testing for nicotine yield using the MDPH method revealed levels that are more than twice as high as those found by the historical method. For the typical smoker, 'low yield' cigarettes in almost every case deliver moderate to high doses of nicotine. These levels are sufficient to cause and maintain heavy dependence. For all brands tested in both 1998 and 2004 (N = 116), the average from using the historical method was 0.90mg/cigarette while the average

from the Massachusetts method was 1.89mg/cigarette.

**Nicotine Ranges**

Massachusetts has rated different brands of cigarettes based on the nicotine that a cigarette delivers under typical smoking conditions. The nicotine ratings range from high, moderate, low, or nicotine free. These ranges were created in order to allow smokers to compare nicotine levels among brands of cigarettes.

Ninety-three percent of the cigarettes tested in 2004 fell into the highest nicotine range. This compares to 84% in 1998. Of 179 cigarette brands tested in 2004, 166 were rated as *high nicotine*. This includes 59 brands that the manufacturers label as 'light' cigarettes, 12 brands labeled as 'mild' or 'medium', and 14 labeled as 'ultra-light'. All remaining brands fell into the moderate range. Cigarettes with moderate and high yields can cause heavy dependence on nicotine.

**Nicotine Content of Whole Tobacco**

For all brands tested in both 1998 and 2004, there were no significant differences in the total nicotine content between 'full flavor,' 'medium,' 'mild,' 'light,' or 'ultra-light' cigarettes.

Whether a cigarette is classified by the manufacturer as being 'full flavor,' 'medium,' 'mild,' 'light,' or 'ultra-light,' it is likely to contain similar amounts of nicotine in the unsmoked tobacco. Smokers who switch to 'lower yield' cigarettes to reduce their intake of nicotine are faced with similar levels of nicotine content.

**Percent Filter Ventilation**

For all brands tested in 2004, cigarettes ranged from 0% to 83% filter ventilation, emphasizing the extreme differences in cigarette design.

When smokers place their lips and fingers over the vents, they keep outside air from diluting the smoke. As a result, they take in higher levels of tar and nicotine.

Based on information provided by the manufacturers, there is a strong correlation between the percent of filter ventilation and total nicotine content for *ultra-light* cigarettes. When the nicotine content is low, there is relatively little filter ventilation. When it is high, there tends to be much more ventilation. Under typical smoking conditions, the amount of filter ventilation reduces the amount of nicotine delivered to the smoker. Despite lower nicotine content for some ultra-light cigarettes, these same cigarettes tend to have correspondingly low levels of filter ventilation. This means that a much higher proportion of the nicotine in the cigarette enters a smoker's lungs.

**Background**

The national standard for testing tar and nicotine in mainstream smoke by use of a smoking machine was developed over thirty years ago. The nicotine yield ratings produced by this historical method were meant to serve as a relative measure of nicotine yield between cigarette brands. They are not reliable measures of how much nicotine a smoker actually takes into their body under normal smoking conditions.

Cigarette design has undergone significant changes over the last 30 years. Technology has altered the manner in which tar and nicotine are delivered to the smoker, and the smoking

practices of consumers have shifted accordingly. Since the introduction of ‘low yield’ cigarettes (i.e. light and ultra-light cigarettes) in the late 1970’s, smokers have been found to compensate for lower levels of nicotine yield by smoking more frequently, by smoking more cigarettes, smoking more deeply, and increasing puff volume. These changes in smoking behavior result in much higher relative nicotine levels being delivered to the body from lower yield cigarettes than what is calculated using the historical testing method.

A recent report of the National Cancer Institute’s Ad Hoc Committee of the President’s Cancer Panel on the historical test method concluded that current ratings from this method provide little information for consumers who wish to know how much nicotine they actually take into their body when smoking. MDPH testing standards, developed in 1997, draw heavily on that report and reflect current scientific knowledge about compensatory smoking behaviors and nicotine intake.

* * * *

## Nicotine Yield Testing

### What Is Nicotine Yield?

A cigarette does not deliver fixed amounts of tar and nicotine in the manner that a capsule delivers a fixed dose of medicine. In part, it is how a person smokes that determines the amount of tar and nicotine that is delivered from the cigarette into the body.

Nicotine yield is a measure of the amount of nicotine in the smoke that a smoker inhales. It does not measure the amount of nicotine in a cigarette.

The amount of nicotine which smokers inhale is based on how long and how deeply they breathe in with each puff (puff volume), the amount of time between puffs (puff interval), and

the percent filter ventilation of the smoke they breathe (the amount of pure air which is drawn in through vent holes in the filter tip during smoking and allowed to mix with the smoke, lessening its concentration).

When compared to the historical method of testing cigarettes, the Massachusetts method better simulates the smoking behavior of the typical smoker under normal smoking conditions. The Massachusetts method increases the amount of smoke inhaled with each puff by the smoking machine, reduces the amount of time taken between puffs, and requires that 50% of the cigarette filter be covered.

**What Do Nicotine Yield Ratings Reflect?**

The historical method of measuring nicotine yield uses a smoking machine to simulate the way in which a smoker smokes. Nicotine yields and tar levels using the historical method are determined on the basis of the amount of smoke which is inhaled by the machine.

Because nicotine yield is based on the way in which an individual smokes, ratings based on the historical method reflect what you take into your body only if you smoke a cigarette in exactly the same way as the testing machine.

Ratings based on the historical method cannot accurately reflect the effects of vent blocking—blocking ventilation holes in the filter. A typical smoker is likely to cover the vents placed around the filter, raising the levels of tar and nicotine which they inhale. The filter vents are left open when nicotine yields are measured using the historical method.

The Massachusetts testing method was developed to reflect compensation techniques--such as vent blocking, puffing more frequently, and inhaling more deeply. If smokers employ

these compensation behaviors, they will inhale increased amounts of nicotine.

**What Were the Results of Massachusetts Nicotine Yield Testing?**

By adjusting parameters to more accurately reflect typical smoking conditions, 2004 Massachusetts testing for nicotine yield produced numbers that were about twice as high as those found using the historical method. The typical smoker receives much greater levels of nicotine than is suggested by historical methods ratings.

Table 1: Nicotine yield from Massachusetts method compared to historical method

| Cigarette Type | MA Method Nicotine Yield (mg/cigarette) | Historical Method Nicotine Yield (mg/cigarette) | % Difference |
|---|---|---|---|
| Full (Regular) | 2.16 | 1.09 | 98% |
| Medium/Mild | 2.01 | 0.93 | 116% |
| Light | 1.71 | 0.80 | 114% |
| Ultra-Light | 1.21 | 0.43 | 181% |

Compensation techniques used by smokers alter levels of nicotine received from ‘light’ or ‘ultra-light’ cigarettes to a much greater degree than with regular cigarettes. All cigarettes (‘light’, ‘ultra-light’, etc.) are based on nicotine yield ratings using the historical method, but ‘low yield’ cigarettes depend more heavily on design factors such as filter ventilation which are not accounted for by the historical testing method.

For the typical smoker, ‘low yield’ cigarettes deliver moderate to high doses of nicotine. These levels are sufficient to cause and maintain heavy dependence. No brand tested produced

nicotine yields of less than 0.5 mg per cigarette when smoked under typical smoking conditions.

## Nicotine Content of Whole Tobacco

### What Is Nicotine Content?

The nicotine content of a cigarette is an important element in its design. Nicotine content is the amount of nicotine contained in the tobacco before it is burned and inhaled. A smoker extracts the nicotine contained within the tobacco by inhaling nicotine which is released into the smoke when the tobacco is burned.

A cigarette with a higher nicotine content has a greater amount of nicotine, which may potentially be extracted by the smoker and inhaled during smoking.

Consumers may believe that 'light' and 'ultra-light' cigarettes contain less nicotine than full flavor cigarettes. However, such classifications do not reflect the amount of nicotine in the cigarette—they are based solely on ratings of nicotine yield using the historical method.

### Why Is Nicotine Content Important?

According to 2004 data, there were no statistically significant differences in the nicotine content of 'full flavor,' 'medium,' 'mild,' 'light,' or 'ultralight' cigarettes. Whether a cigarette is classified as 'full flavor,' 'medium,' 'mild,' 'light,' or 'ultra-light', it is likely to contain similar amounts of nicotine in the unsmoked tobacco.

Nicotine yield ratings from the historical method are based on the amount of nicotine 'inhaled' by a smoking machine. These data suggest that light cigarettes contain less nicotine than regular cigarettes. In reality, the difference in nicotine content across types is not statistically

significant. Light and regular cigarettes offer similar amounts of nicotine to the smoker.

Compensation techniques such as vent blocking or taking longer and deeper puffs on a cigarette are used by smokers as means of extracting a greater amount of nicotine. When a cigarette has a high level of nicotine content, the smoker may be able to extract high levels of nicotine even when smoking cigarettes labeled with lower nicotine yields.

A cigarette classified as ‘light’ according to the amount of nicotine which a standard smoking machine will extract from it, will contain levels of nicotine similar to that of a regular cigarette.

Smokers who switch to ‘lower yield’ cigarettes in order to reduce their intake of nicotine, can be faced with similar levels of nicotine content in the ‘low yield’ cigarettes. By simply smoking harder and longer on light and ultra-light cigarettes, smokers can achieve the same impact and the same level of nicotine as they did from ‘higher’ nicotine yield brands.

## Percent Filter Ventilation

### What Is Vent Blocking?

Many cigarettes are made with tiny holes around the filter which allow air that has not been drawn through the end of the cigarette to mix with the tobacco smoke during smoking.

When smokers place their mouth or fingers over the vents, they keep outside air from diluting the mixture and so take in higher levels of tar and nicotine.

**How Can a Smoker Tell If They Are Vent Blocking?**

It is difficult for smokers to know if they are covering up the vents. Many brands have vents that are so tiny they are invisible to the naked eye. Often the placement of the holes makes it difficult if not impossible for a smoker to smoke a cigarette without blocking some or all of the vents.

Cigarettes are designed in such a way that normal smoking behaviors results in covering some or all of the filter vents. Thus, normal smoking behaviors result in heavier amounts of tar and nicotine delivered to a smoker.

**What Does Vent Blocking Mean for 'Light' and 'Ultra-light' Cigarettes?**

Filter vents are more often found in 'light' and 'ultra-light' cigarettes.

The filter vents reduce the amount of nicotine and tar measured by the historical testing method, without reducing the amount of tar and nicotine in the cigarette.

A smoker will likely block at least some of the filter vents on a 'light' or 'ultra-light' cigarette, breathing in more of the dangerous and addictive substances in the smoke.

For cigarettes tested in 2004, filter ventilation ranged from 0% to 83%. This emphasizes the significant differences in cigarette design between brands of cigarettes.

**<u>Nicotine Yield Ratings</u>**

**Why Publish Nicotine Ranges?**

Massachusetts is publishing the range of nicotine which a cigarette delivers under typical smoking conditions. All brands are classified as either high, moderate, low, or

nicotine free. Since individual smoking behaviors vary, these ranges will allow smokers to compare nicotine levels among brands of cigarettes without suggesting specific amounts of nicotine delivered.

Because of the differences in individual smoking patterns, no number is truly representative of the amount of nicotine any smoker will receive from a cigarette. Therefore, Massachusetts has developed ranges which classify levels of nicotine relative to each other. These ranges are high (>1.2 mg), moderate (>0.2-1.2), low (.01-.2) or nicotine free (<.01).

**What Do the Classifications Show?**

Of 179 cigarette brands tested, 166 were rated as high, including most of the 'light' cigarettes tested, and even some of the 'ultra-light' cigarettes tested.

Of the remaining 13 brands (7% of cigarettes tested), all were rated moderate by MDPH standards. This suggests that virtually all cigarettes on the marketplace today deliver moderate to high doses of nicotine sufficient to cause and maintain heavy dependence.

Eighty-five (85)—or more than half of the all brands rated as high were classified as 'ultralight,' 'light,' or 'medium.'

No brand tested fell into the 'low' classification.

The results tests performed in accordance with MDPH regulations demonstrates the highly addictive potential of nearly all brands of cigarettes-- whether full flavor, 'light,' or 'ultra-light.' Brands rated as low in nicotine according to the historical method are shown to deliver significantly greater levels of nicotine and to be potentially more addictive than the ratings would suggest.