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**CHRONOLOGY OF
EXTERNAL EVENTS**

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CHRONOLOGY OF EXTERNAL EVENTS1604

1604 UK: James I "Counterblaste to Tobacco".
"a custome lothsome to the eye, hateful to the nose,
harmful to the braine, dangerous to the lungs and,
in the black stinking fume thereof, nearest
resembling the horrible Stigian smoke of the pit
that is bottomlesse".

1739

1739 Holland: Johan Jakob indicated that lip cancer could be an
aetiological consequence of pipe-smoking. (Relied
on in Finnish case Aho v Oy and anor.)

1850

1850 UK: Queen Victoria rules against the adulteration of
tobacco with sack lees, muscatal leaves, peat earth,
bran, sawdust, meal, alum, saltpeter and dyes.

1867

1867 UK: English Anti Tobacco Society founded in Manchester.
It published a monthly magazine the 'Beacon Light'.
It was succeeded by the British Anti-Tobacco League.

1878

1878 UK: A letter in the Times refers to the poisonous nature
of tobacco.

1884

1884 US: Cigarette manufacturing machine invented, increasing
production from 4 per minute to about 1600 per
minute.

1901

1901 UK: R. Baden-Powell wrote 'Advice to Boys' (contained
anti-smoking statements) and founded the
Anti-Cigarette League.

1906

1906 UK: Committee of House of Lords investigates juvenile
smoking. Many of its recommendations incorporated
in the 1908 Children's Act.

1908

1908 UK: Children's Act banned sale of tobacco to children
aged under 16 and authorised police officers to
seize tobacco found in the possession of children.

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1927

1927 UK: F.E. Tylecote reports that almost every lung cancer patient he had known had been a regular smoker.

1930

1930 UK: British Anti Tobacco League wound up.

1930 UK: British Temperance Society continued work of British Anti Tobacco League.

1936

1936 UK: Arkin and Wagner report that 90% of 135 men afflicted with lung cancer were smokers.

1937

1937 Argentina: Professor Roffo succeeded in isolating a cancer initiating agent in tobacco smoke - benzopyrene. [Relied on in Finnish case Aho v Oy and anon].

1939

1939 Ge: Muller found much smoking amongst lung cancer patients (retrospective study).

1940

1940 UK: The Tobacco Advisory Committee is set up to advise Government how to ensure sufficient supplies of tobacco are imported during the war.

1942

1942 US: Reader's Digest carries out the first survey of nicotine levels in various U.S. brands.

Aug 1942 US: The Federal Trade Commission (FTC) begins prosecuting Philip Morris for false advertising practices.

1950

May 1950 US: Wynder & Graham publish "Tobacco Smoking as a Possible Aetiological Factor in Bronchiogenic Cancer (retrospective study)". The Study concludes that smoking, especially in the form of cigarettes, plays an important role in the aetiology of lung cancer.

Aug 1950 US: Hammond and Horn publish the "Relationship Between Smoking Habits and Death Rates".

Sep 1950 UK: Doll & Hill publish the Preliminary Report of their retrospective study (see Dec 1952) in the British Medical Journal (BMJ). They conclude that there is a

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real association between lung cancer and smoking
(see Spring 1953).

1951

Oct 1951 UK: The "British doctors" study begins (see Jun 1954).

1952

Jun 1952 US: "Consumer Reports" publishes tar and nicotine
figures for cigarettes.

Dec 1952 UK: Doll & Hill publish a "Study of the Aetiology of
carcinoma of the Lung (retrospective)". They
confirm the conclusion of their preliminary report
(see Sep 1950).

.953 US: Wynder publishes "Experimental Production of
Carcinoma with Cigarette Tar".

.953 US: First attention is given in the popular press to the
links between smoking and illness.

Feb 1953 US: "Consumer Reports" publishes a report on cigarettes:
"The Industry, the Product and the Health Problem".
Nicotine and tar figures are given.

Spring 1953 UK: - The Ministry of Health sets up a statistical panel
to examine Doll & Hill's 1952 report. The panel
reported in Nov 1953 (not published) that the main
conclusion that there is a real association between
smoking and lung cancer is firmly established and
that there is a strong presumption that there is a
causal relationship. Findings submitted to the
Standing Advisory Committee on Cancer and
Radiotherapy (SACCR).

ec 1953 US: Tobacco Industry Research Committee (TIRC) is formed
by US cigarette companies to sponsor independent
research into questions on smoking and health.

1954

954 UK: The first statement of Medical Research Council
(MRC) suggests smoking is a possible cause of cancer.

954 CAN: Tobacco Research Fund (TRF) is set up for research
into lung cancer. \$100,000 is the initial
contribution (see 1956).

an 1954 UK: A meeting of Research Officers of the tobacco
companies takes place.

eb 1954 UK: Minister of Health tells the House of Commons that
SACCR have considered Doll & Hill's report and come
to the same conclusions. The Statement includes a
particular warning to young people.

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- Feb 1954 UK: Tobacco companies agree to provide £250,000 for research over the next seven years to ascertain the true cause or causes of lung cancer. The monies are offered to MRC.
- Mar 1954 UK: Parliamentary Secretary to Ministry of Works states total of £400,000 being spent on cancer research by MRC.
- Jun 1954 UK: Doll & Hill publish "The Mortality of Doctors in Relation to their Smoking Habits. A Preliminary Report. (Prospective)", otherwise known as the "British doctors" report (see Nov 1956).

1955

- 1955 US: A bill requiring the printing of tar and nicotine contents of cigarettes on packets is introduced in Congress (it is re-introduced in 1962 and 1963 but lost).
- Feb 1955 US: First tests on king-size filter cigarettes are published in "Consumer Reports".
- Sep 1955 US: The FTC publishes its code of ethics: "Cigarette Advertising Guides" (which recommend a ban on all mention of tar, nicotine and filtration "when it has not been established by competent scientific proof ... that the claim is true").
- Dec 1955 UK: In his annual report the Chief Medical Officer states that published research generally strengthens the presumption of a causal connection but does not yet permit of any more definite conclusion than that reported in 1954.

1956

- 1956 UK: ITV excludes tobacco adverts from children's TV programmes.
- 1956 CAN: A further contribution of \$100,000 is made to TRF (see 1959).
- Feb 1956 UK: Government is asked whether it would take the initiative in a public education campaign to warn of the alleged dangers of smoking. It replies that it is awaiting advice from SACCR as to the desirability of such a campaign.
- Mar 1956 UK: The Minister of Health announces that Government will take such steps as are necessary to ensure the public are kept informed of all relevant information as and when it becomes available. On the same day and in reply to this, the tobacco industry makes a statement ("with a full sense of our duty to the

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public") that "the evidence on the possible relationship of lung cancer and smoking is conflicting and very incomplete; much more research is necessary before firm conclusions can be drawn."

- May 1956 UK: The Minister of Health announces, inter alia, that there is, statistically, an incontrovertible association between smoking and the incidence of lung cancer.
- Jun 1956 US: The Public Health Service first becomes officially engaged in an appraisal of the available data on smoking and health. A study group is established jointly by the National Cancer Institute, the National Health Institute, the American Cancer Society and the American Heart Association.
- Nov 1956 UK: Doll & Hill publish "Lung Cancer and Other Causes of Death in Relation to Smoking. A Second Report on the Mortality of British Doctors. (Prospective)" in the British Medical Journal (BMJ) (see Jun 1954 and 1976). The analysis shows, inter alia, that "there has been a marked and steady increase in the death rate from lung cancer as the amount smoked increases" and that "the death rate of the heavy smokers is approximately twenty times the death rate of the non-smokers." There was "a progressive and significant reduction in mortality" amongst ex-smokers with the increase in time over which smoking had been given up. Study of deaths from cancer in sites other than the lung revealed no association with smoking. Mortality from coronary thrombosis revealed a "slight but significant relationship with smoking" and three other causes of death showed a "steady increase in mortality from non-smokers to heavy smokers - chronic bronchitis, peptic ulcer, and pulmonary tuberculosis". Only with chronic bronchitis was the gradient statistically significant.
- Dec 1956 UK: Chief Medical Officer states two conditions seem to be associated with an increase in lung cancer - air pollution and excessive cigarette smoking.

1957

- 1957 US: A Bill is filed in Congress requiring a warning to be printed on cigarette packs: "Prolonged use of this product may result in cancer, in lung, heart and circulatory ailments and in other diseases". It is referred to the Senate Commerce Committee and lost.
- 1957 US: Auerbach publishes his controlled blind study of patients in which the lung at autopsy showed pathological changes (including emphysema).

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- pre-cancerous lesions and cilia destruction) (see 1961).
- 1957 US: "Reader's Digest" publishes assays of tar and nicotine in U.S. cigarettes (first tar league).
- 1957 UK: The Government launches a health education campaign directed against smoking.
- 1957 UK: BBC produces a film on smoking and health in its 'Facts and Figures' series.
- Jan 1957 UK: Minister of Health makes a statement in the House of Commons that Government feels that "this latest authoritative opinion [the MRC report] is brought effectively to public notice, so that everyone may know the risks involved in smoking"; local health authorities will be asked to take appropriate steps to inform the general public.
- Feb 1957 UK: In response to assertions that the Government is not spending sufficient on research into smoking and health, Minister of Health says: "[Government] are making some contribution towards this particular piece of research [lung cancer], and the Medical Research Council this year spent £327,000 from public funds on cancer research as a whole."
- Mar 1957 US: Tar and nicotine figures are published in "Consumer Reports".
- Mar 1957 UK: The problem of smoking and lung cancer is debated in the House of Commons.
- Jun 1957 UK: MRC issues a statement on "Tobacco Smoking and Cancer of the Lung" concluding, inter alia, that "a very great increase has occurred during the past 25 years in the death rate from lung cancer in Great Britain and other countries". Evidence "from many investigations in different countries indicates that a major part of the increase is associated with tobacco smoking, particularly in the form of cigarettes". The "most reasonable interpretation of this evidence is that the relationship is one of direct cause and effect" and "identification of several carcinogenic substances in tobacco smoke provides a rational basis for such a causal relationship."
- Jul 1957 US: A statement is issued by the Surgeon General declaring that "the Public Health Service feels the weight of the evidence is increasingly pointing in one direction: that excessive smoking is one of the causative factors in lung cancer."

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- Oct 1957 UK: National Association for Prevention of Tuberculosis endorses the statement of the Minister of Health that smoking, especially heavy cigarette smoking, is a very important element in the cause of lung cancer (see Aug 1960).
- Dec 1957 UK: Chief Medical Officer states that recent work has merely served to confirm earlier inferences that there is an association between lung cancer and smoking.

1958

- 1953 US: The Tobacco Institute (TI) is formed "to promote better public understanding of the tobacco industry and its place in the national economy and to compile and disseminate information relating to the industry and the use of tobacco products."
- 1953 US: Hammond and Horn publish "Smoking and Death Rates - Report on 44 Months of Follow-up of 187,783 Men. (Prospective)". It became known as the "9 states" report.
- Feb 1958 US: The FTC Bureau of Consultation calls a two-day conference to consider standardisation of test methods (up to now tar figures have been published, but are meaningless due to the lack of standardised methods or testing).
- Jun 1958 UK: DMSC issue second report.
- Aug 1958 UK: Circular 17/58 sent to local health authorities asking for details of health education campaign about smoking.
- Sep 1958 UK: Seventh International Cancer Congress held in London
- Dec 1958 US: Tar and nicotine figures are published in "Consumer Reports".

1959

- 1959 CAN: A further contribution of \$100,000 is made to TRF.
- 1959 US: Dorn publishes "The Mortality of Smokers and Non-smokers: 'US Veterans'" (Prospective) (see 1980).
- Apr 1959 UK: Royal College of Physicians (RCP) sets up a committee to report on the question of smoking and atmospheric pollution in relation to carcinoma of the lung and other illnesses.
- May 1959 UK: In defence of the Government's campaign to publicise the connection between smoking and lung cancer, the

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Minister of Health says: "the object of the campaign is to bring home to people the association between tobacco smoking, cigarette smoking and lung cancer. So far as I am aware, that association is well within the mind of the public".

Nov 1959 US: "Smoking and lung Cancer:- A statement of the Public Health Service", an article by the Surgeon General in JAMA, is published. It states "the weight of evidence at present implicates smoking as the principal factor in the increased incidence of lung cancer".

Dec 1959 US: FTC writes to all cigarette firms saying "all representation of low or reduced tar or nicotine, whether by filtration or otherwise, will be construed as health claims".

1960

1960 WEO: World Health Organization epidemiology of cancer of the lung.

1960 UK: Davies publishes "Review of the Evidence on a Relationship between Smoking and Lung Cancer (retrospective)."

1960 US: Dunn, Linden, Braslow publish "Lung Cancer Mortality Experience of Men in Certain Occupations: 'California Legion'" (Prospective).

1960 CAN: Best, Josie & Warner publish "A Canadian Study of Mortality in Relation to Smoking Habits, a Preliminary Report: 'Canadian Veterans'" (Prospective).

1960 US: FTC settles for an "agreement" whereby manufacturers will "discontinue confusing and unsubstantiated" tar and nicotine claims.

Jan 1960 US: Tar and nicotine figures are published in "Consumer Reports".

Jul 1960 US: Published evidence on the health hazards of smoking leads to recommendations for action by various state medical societies, the removal of vending machines from college campuses and the elimination of free issue to the Air Force.

Aug 1960 UK: The report of the General Tuberculosis Council is issued. It concludes: "cigarette smoking is a major factor accounting for the increased incidence of cancer of the lung; it may possibly act in association with other factors such as air pollution. There is a strong association between chronic bronchitis and cigarette smoking ... Cigarette smoking is possibly a cause of the

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breakdown of healed or quiescent respiratory tuberculosis" (see Oct 1957).

1961

- 1961 US: Publication of further data from Auerbach's study: "Changes in Bronchial Epithelium in Relation to Cigarette Smoking and Lung Cancer" (see 1957).
- Apr 1961 US: Tar and nicotine figures are published in "Consumer Reports".
- Jul 1961 US: "Reader's Digest" publishes figures on tar and nicotine in plain and filter cigarettes 1957-1961 (see Aug 1963).

1962

- Jan 1962 UK: Mr Galbraith, Secretary of State for Scotland, says in parliament that "expert opinion regards smoking, especially heavy cigarette smoking, as a major factor in this disease" [lung cancer].
- Jan 1962 US: Representatives of various organisations meet the Surgeon General who recommends, to the Secretary of the Department of Health, Education and Welfare (DEW), the formation of an advisory committee of "outstanding experts who would assess available knowledge in this area and make appropriate recommendations" (see Jul).
- Mar 1962 UK: The first RCP report, "Smoking and Health", is published. It states that harmful effects might be reduced by efficient filters, by using modified tobaccos, by leaving longer stubs and by changing to pipes or cigars. It recommends further research into filtration of smoke, modification of tobacco and the value of anti-smoking clinics (see 1971). The Minister of Health announces that the Government accepts that the Report demonstrates authoritatively and crushingly the connection between smoking and lung cancer and the more general hazards to health of smoking.
- Mar 1962 UK: The House of Lords debates the motion of "Smoking and Health" (Hansard 238 (54) col 635-).
- 1962 UK: Government accepts conclusions of report and asks local health and education authorities to redouble health education efforts. Ministry of Health obtain rights to BBC film 'Spotlight on Smoking'. Loan copies arranged.
- 1962 UK: British Tobacco Manufacturers voluntary agreement excluding any cigarette advertisements which over-emphasise the pleasures of smoking, feature

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conventional heroes of the young, appeal to manliness, romance, or social success, or imply greater safety of any brand and advertisements on TV before 9.00 p.m.

- Apr 1962 US: A seminar, held on the Auerbach-Harmond study, discloses that emphysema is directly linked to the destructive effects of smoking. An Article is published in the New England Journal of Medicine in Oct.
- Jun 1962 US: The Surgeon General announces the establishment of an expert committee and, after meeting committee members, outlines the work which is to be carried out.
- Jun 1962 UK: The Minister of Health states that environmental tobacco smoke "is unlikely to represent any serious hazard to healthy people, but bouts of coughing and asthma due to it can be serious in those with chest complaints or heart disease".
- Jul 1962 US: As a result of a question to the President during a televised press conference in May, the Surgeon General announces plans for an "expert committee to study the impact of smoking on health", to determine "the nature and magnitude of the problems and then to make "recommendations for action". Groups are invited to name independent candidates for membership (see Nov).
- Oct 1962 UK: The Chief Medical Officer's Report for 1961 is published. It concludes, "lung cancer is so closely associated with tobacco smoking, and especially cigarette smoking, that the conclusion that cigarette smoking is a principal cause is inevitable. It is clearly not the only cause but it is certainly the most important".
- Nov 1962 US: The Advisory Committee on Smoking and Health to the Surgeon General is formally established and begins its study of tobacco as a possible health problem (see Jan).
- Dec 1962 UK: The Minister of Health reiterates Government's acceptance of a causal connection between smoking and ill-health: "I am not reluctant to bring to the notice of people, by every means that I can, the fact that there is a close causal connection between the smoking of cigarettes and the incidence of lung cancer".

1961

- 1963 UK: 'Smoking and You' Government film aimed primarily at adolescents.

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- 1963 UK: Film 'This is Your Lung'.
- Apr 1963 UK: The article "Cigarette Smoke and its Health Hazards" is published in "Which?".
- Apr 1963 UK: The Secretary of State for the Home Department is asked in the House of Commons: "in view of the fact that the [Consumer Protection Act 1961] gives the Home Office specific power to require tobacco manufacturers to indicate on each packet of cigarettes the risks run by the smoker consuming them, why does the Home Office not take advantage of its power?" The Secretary replies that the Act will not serve that purpose but he will look more closely at it.
- Aug 1963 US: "Reader's Digest" publishes tar and nicotine figures for the most popular brands of king-size filter-tip cigarettes, together with the four brands lowest in tar and nicotine. Figures were the same as those reported in Jul 1961.

1964

- 1964 CAN: Department of National Health and Welfare: Smoking and Health
- 1964 US: The Interagency Council on Smoking and Health (NIC) is founded.
- 1964 UK: Cartoon film - 'Breaking the Habit'.
- 1964 UK: British Movietone film - No Smoke Without
- 1964 UK: Cancer - A film from the "Enemies Within" series.
- 1964 UK: MRC expenditure on cancer research for 1963/64 is £958,000.
- Jan 1964 US: A report on smoking and health is published by the Advisory Committee to the Surgeon General of the Public Health Service. It concludes, inter alia, that cigarette smoking contributes substantially to mortality from certain specific diseases and to the overall death rate and that the tobacco habit should be characterised as an habituation rather than an addiction.
- Jan 1964 US: A week after the release of the Surgeon General's Report, the FTC announces initiation of rulemaking proceedings pertaining to the advertising and labelling of cigarettes (see Aug).
- Jan 1964 UK: The Minister for Science is asked to initiate research into compulsive urges to smoke. He states

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he is satisfied that the research being done is adequate.

- May 1964 UK: Ministry of Health film "Smoking Machine" completed. It is aimed at children aged 9 to 12. It is shown by commercial distributors as well as local authorities.
- May 1964 UK: A debate is held on the second reading of the Cigarettes (Health Hazards) Bill, intended to make it obligatory for cigarette packs to carry a health warning. The Bill fails to become law. Subsequently, there are various calls in the House for its re-introduction (see Jul 1968).
- Jun 1964 UK: The Minister of Health states that "studies have shown that as well as the causal relationship with cancer of the lung, there is a definite connection between cigarette smoking and bronchitis, emphysema and cancer of the larynx, of the oral cavity and of the oesophagus, and a probable but less clear connection with stomach duodenal ulcers and coronary artery disease".
- Jun 1964 US: FTC rules that all cigarette advertising and packaging will carry the warning: "Cigarette smoking is dangerous to health and may cause death from cancer and other diseases". The requirement should take effect from 01 Jan 1965 (advertising), and 01 Jul 1965 (packaging).
- Jun 1964 US: FTC rules that henceforth it would be an "unfair or deceptive act or practice" for any manufacturer "to fail to disclose, clearly and prominently, in all advertising and on every pack, box, carton or other container in which cigarettes are sold that cigarette smoking is dangerous to health and may cause death from cancer and other diseases".
- Aug 1964 US: The FTC announces that the effective date of the labelling rule had been postponed "to permit adequate time for the 89th Congress [convening in Jan 1965] to consider appropriate labelling legislation" (see Jul 1965).
- 1965
- 1965 UK: 1962 voluntary code of practice for the television advertising of cigarettes extended to other media. 1965 UK: The MRC's expenditure on cancer research for 1964/65 is £1,029,000.
- Feb 1965 UK: The Minister of Health states "the Government have decided that the time has come to end the advertising of cigarettes on television". Such a ban is to come into operation as soon as practicable (see Aug).

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Summer 1965 US: The "Neuberger Bill" is introduced in Senate, providing for a health warning both on packets and in advertising.

Summer 1965 US: The "Magnusson Bill" is introduced in Senate, concerned with a health warning on cigarette packets only.

Jul 1965 US: The Federal Cigarette Labelling and Advertising Act 1965 sets up a uniform, nationally consistent system of warning labels: "Caution: cigarette smoking may be hazardous to your health" (see Jul 1966).

Aug 1965 UK: A ban on cigarette advertising on TV comes into effect: (see Feb).

1966

1966 UK: The MRC's expenditure on cancer research is £1,178,000.

1966 US: The Surgeon General's report is published.

1966 US: Kahn publishes "The Dorn Study of Smoking and Mortality Among US Veterans: Report on 8.5 Years of Observation: 'US Veterans' (Prospective)".

1966 CAN: Best publishes "A Canadian Study of Smoking and Health: .Canadian Veterans. (Prospective)".

1966 US: Hammond publishes "Smoking in Relation to the Death Rate of One Million Men and Women: .Twenty Five States. (Prospective)" (see 1977).

Jan 1966 US: The warning "Caution: cigarette smoking may be hazardous to your health" appears on cigarette packets.

Mar 1966 US: The FTC decides to begin measuring the tar and nicotine yields of cigarettes and to permit manufacturers to begin using this information in advertising, revoking its rule preventing such mention being made.

Jun 1966 US: The FTC announces the setting up of its own laboratory in Washington to monitor tar and nicotine levels (see Aug 1967).

Jun 1966 UK: Voluntary agreement to restrict expenditure on advertising.

Jul 1966 US: A Senate Bill is introduced (designed to strengthen the Federal Cigarette Labelling and Advertising Act 1965) requiring a "clear statement of the tar and nicotine content of the mainstream smoke per

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cigarette" on package labels and in all advertising. It also requests the FCC to furnish a quarterly report of its tests to the Senate Commerce Committee and implies that these tests should be publicised.

- Aug 1966 UK: The Minister of Health says that the single most important known cause of lung cancer in Britain is cigarette smoking.
- Oct 1966 UK: Circular 19/66 sent by Ministry of Health to local health and education authorities drawing attention to statistics from TRC and asking them to continue and increase health education about smoking.
- Nov 1966 UK: The Minister of Health is asked what evidence is available concerning the addictive effect and damage to health of tobacco as compared with marijuana. He replies: "the effects on health from the use of tobacco were quite different from those of taking marijuana, and there is no consensus of medical opinion on the extent to which either is addictive".
- Nov 1966 US: "Reader's Digest" publishes a table of the tar and nicotine contents of the 30 most popular brands of filter-tipped cigarettes.
- Dec 1966 UK: In a debate on lung cancer, the Minister of Health, whilst accepting cigarette smoking is not the only "cause" of lung cancer, says: "the evidence points clearly to the conclusion that the association between lung cancer and smoking is one of direct cause and effect."

1967

- 1967 UK: Horizon TV programme "Cancer - the Smokers Gamble".
- 1967 UK: Voluntary agreement on advertising expenditure breaks down.
- 1967 UK: The MRC's expenditure on cancer research in 1966/67 is £1,270,000.
- 1967 UK: Cigarettes made from lettuce leaves are now on sale in a London supermarket (brand name "Bravo"); they have been on sale in the US for the past year.
- 1967 US: A statement is made to Congress that the preponderance of scientific evidence strongly suggests that the lower the tar and nicotine content in cigarettes, the less harmful the effects.
- Jan 1967 US: "The health consequences of smoking: A Public Health Service review: 1967" is published (a review of 2,000 new research studies) (see Jan 1968 and Jan 1969).

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- Jan 1967 UK: Minister of Health urged greater restrictions on smoking in public places. It was well received but there was reluctance to impose further restrictions on smoking.
- Jun 1967 US: The FTC recommends to Congress that "a statement setting forth the tar and nicotine content of each cigarette should be required to appear on the package and in all cigarette advertising" (see Aug 1970).
- Aug 1967 US: The FTC announces the commencement of the formal testing of tar and nicotine levels of cigarettes (see Nov 1967).
- Sep 1967 US: The first World Conference on Smoking and Health is held in New York (see 1971).
- Nov 1967 US: The FTC issues a report listing the tar and nicotine content of 54 brands of cigarettes (the first US tar league).

1968

- 1968 UK: Film "Smoking and Health - Man".
- 1968 UK: Film "Smoking and Health - Teenager".
- 1968 UK: Film "Smoking and Health - Woman".
- 1968 UK: The CCHE is reorganised: establishment of the Health Education Council (HEC) (anti-smoking advertisements appear in the following year).
- 1968 US: The FTC recommends to Congress that it ban television and radio cigarette advertising (see Jan 1971).
- Jan 1968 US: "The health consequences of smoking - a supplement to the [Jan] 1967 Public Health Services Review" is published (see Jan 1969).
- Jul 1968 US: The FTC again recommends legislation for a mandatory health warning in advertising.
- Jul 1968 UK: The adjourned second reading of the Cigarettes (Health Hazards) Bill is debated and further adjourned (see Jan 1970).
- Oct 1968 UK: DESS produce leaflet "How you can give up Smoking - Hints by a Doctor".
- Nov 1968 UK: The Secretary of State for Social Services advises parliament that "the main conditions in which cigarette smoking is a significant causative factor are lung cancer, chronic bronchitis and coronary heart disease, especially in middle-aged people".

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1969

- 1969 UK: Film from the "Facts are These" series "Dying for a Smoke".
- 1969 UK: The first major anti-smoking campaign posters are produced by the Health Education Council.
- Jan 1969 US: "The Health Consequences of Smoking: 1969 Supplement to the [Jan] 1967 Public Health Services Review" is published (see Jan 1971).
- Dec 1969 CAN: The report of the House of Commons Standing Committee on Health, Welfare and Social Affairs publishes its report on tobacco and cigarette smoking. It recommends phased legislation, leading to the elimination of all cigarette advertising and promotional activities.

1970

- 1970 UK: The RCP report, "Air Pollution and Health", is issued. It concludes, inter alia, that control of air pollution will help to restrain whatever part this may play in causing, or exacerbating, chronic bronchitis; that there is some evidence of a combined effect of air pollution and cigarette smoking on chronic bronchitis; and that the evidence of the role of air pollution in the causation of lung cancer is still inconclusive.
- Jan 1970 UK: The Cigarettes (Health Hazards) Bill is further debated (see Dec 1970).
- Mar 1970 UK: The Government appoints a Senior Medical Officer to co-ordinate inter-departmental work on smoking and health.
- Apr 1970 US: The Public Health Cigarette Smoking Act 1969 is passed. This amends the previous law and calls for an updated report by 1971 on the health effects of smoking; new text for the health warning; the banning of radio and television advertising of cigarettes from 1971; and the FTC to submit a report to Congress by 1971 (and annually thereafter) about the effectiveness of cigarette labelling, current advertising practices and any recommendations for future legislation.
- May 1970 UK: The Secretary or State for Social Services is asked to establish a standing committee to advise on the health hazards of smoking tobacco and tobacco substitutes. He replies: "as regards tobacco substitutes, the Medical Research Council is, at my request, calling a meeting of the independent

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experts to evaluate the tests used and the evidence supplied by the manufacturers of the new smoking materials".

- Aug 1970 US: The FTC issues a proposed rule requiring cigarette manufacturers to disclose the tar and nicotine content of cigarettes in advertising. The proposal is suspended when manufacturers agree voluntarily to make the disclosures (see Jun 1967 and Dec 1970).
- Nov 1970 US: After this date it is unlawful for cigarette packs not to have the new health warning: "WARNING: The Surgeon General has determined that cigarette smoking is dangerous to your health".
- Dec 1970 US: The FTC accepts the Industry's proposal to display, voluntarily the FTC tar/nicotine figures in all its advertisements.
- Dec 1970 UK: The Cigarettes (Health Hazards) Bill is further debated (see Apr 1971).

1971

- 1971 UK: The Consumers Association publishes tar and nicotine figures for a limited number of popular brands.
- 1971 UK: The Industry agrees to the setting up of the Standing Scientific Liaison Committee (SSLC).
- 1971 UK: The second World Conference on Smoking and Health is held in London (see Jun 1975).
- 1971 UK: ASH founded.
- Jan 1971 UK: The RCP publishes its second report: "Smoking and Health Now". It recommends that every effort must be made to develop less dangerous products for those who cannot abstain; warning notices should be printed on packets of cigarettes and, if they are allowed to continue, on cigarette advertisements; more effective techniques for helping unwilling smokers to stop must be developed; tar and nicotine levels should be published and the Government should consider imposing a statutory upper limit; and the MEC should consult with the Industry about tests for cigarettes which are likely to be less hazardous and should conduct research to determine the effects on health of smoking such cigarettes (see Mar 1962 and 1977).
- Jan 1971 US: "The Health Consequences of Smoking: a Report of the Surgeon General: 1971: a Comprehensive Review of all the Scientific Literature Available to the National Clearing House for Smoking and Health with Emphasis

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on the Most Recent Additions to the Literature" is published (see Jan 1967).

- Apr 1971 UK: The Tobacco (Health Hazards) Bill, as amended by Standing Committee C is published, to provide against the risks to health due to smoking (changed from Tobacco and Snuff (Health Hazards)).
- May 1971 UK: The Secretary of State for Social Services advises parliament that "results suggest that filters may have some effect in reducing the danger" of cigarette smoking.
- Sep 1971 UK: HEC launches first major television anti-smoking campaign.
- Nov 1971 UK: A voluntary agreement is reached on warnings placed on packs: "Warning from EM Government: Smoking can damage your health". (on packets). "Packets carry a Government health warning" (adverts).

1972

- 1972 UK: The advertisement warning is changed to "Every packet carries a Government health warning".
- 1972 AUS: The Federal Government requires the warning "Smoking is a health hazard", attributed as an "Health Authority warning"
- 1972 UK: Advertisement warning changed to "Every packet carries a Government health warning".
- 1972 UK: Agreement is reached between the industry and TV companies to cover up cigarette brand advertisements during outside broadcasts of sporting events.
- Jul 1972 UK: The DHSS publishes its report: "Smoking and Health: a Study of the Effects of a Reduction in Cigarette Smoking on Mortality and Morbidity Rates, on Health Care and Social Security Expenditure and on Productive Potential".
- Jul 1972 UK: The DHSS publishes the "Report of the Standing Scientific Liaison Committee to the Secretary of State for Social Services, on the Publication of Tar and Nicotine Yields of Packeted Cigarettes". It recommends publication of information about tar and nicotine yields of all cigarettes sold in the UK.

1973

- 1973 UK: The DHSS begins to publish biannual tables of tar and nicotine deliveries (see 1984).

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- 1973 UK: The Industry agrees to print Government smoking "health hints" on cigarette pack inserts.
- 1973 NZ: A voluntary agreement on warning is decided (attributed to the Health Department): "smoking may endanger your health".
- 1973 UK: HEC produced an anti-smoking film for schools.
- 1973 UK: The Independent Scientific Committee (ISC) on Smoking and Health (the Hunter Committee) is set up to consider the scientific aspects of the use of non-tobacco materials in cigarettes (see 1976).
- Nov 1973 UK: The Secretary of State for Social Services advises parliament that the Government will "wholeheartedly welcome a less dangerous form of smoking material". However, tests have not been completed to appraise New Smoking Material's relative safety.

1974

- 1974 US: Dentenwill publishes "Tumorigenic Effect of Chronic Cigarette Smoke Inhalation on Syrian Golden Hamsters".
- 1974 UK: The Industry agrees to introduce the tar grouping system into the publication of tar league tables (see 1975).
- 1974 UK: Tar groups appear on press and poster brand advertising.
- 1974 UK: HEC changed emphasis of campaign to smoking in pregnancy.
- May 1974 US: The Consumer Product Safety Commission rules that it lacks authority to ban high tar cigarettes.
- Oct 1974 US: Kobayashi, Hoffman and Wynder publish "A Study of Tobacco Carcinogenesis, XII. Epithelial Changes Induced in the Upper Respiratory Tracts of Syrian Golden Hamsters by Cigarette Smoke".

1975

- 1975 WHO: The World Health Organisation publishes "Smoking and its effects on Health Report". It recommends that research should be carried out to define more precisely the social, psychological and pharmacological determinants of the smoking habit; to understand better the mechanisms by which the various constituents of tobacco smoke (particularly nicotine and carbon monoxide) cause their pathological effects; and to assess smoking

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- behaviour and attitudes towards smoking of the general public, of the health and education professions and of other opinion leaders.
- 1975 UK: "Which?" publishes a report on advertising and smoking in public places.
- 1975 UK: Cigarettes are classified into groups according to tar delivery (see 1974).
- 1975 UK: The ISC publishes its first report. It recommends that the Secretary of State should obtain assurances from tobacco companies that they will abide by guidelines for tobacco substitutes and additives (see Nov 1979).
- 1975 UK: In conjunction with the Advertising Standards Authority, industry strengthens its code of cigarette advertising practice, and provides for approval of advertising copy prior to publication.
- 1975 UK: Industry adopts special provisions for cigarette promotions, to avoid them getting into the hands of children.
- 1975 UK: HEC launches biggest ever mass media campaign directed mainly against smoking by pregnant women and teenagers. It also mounts a press campaign urging people to switch to a lower tar brand.
- 1975 UK: Cigarettes classified into groups according to tar delivery (see 1974).
- May 1975: UK: Thames TV shows two documentaries on smoking.
- Jun 1975 US: The Third World Conference on Smoking and Health is held in New York (see Jul 1979).
- Nov 1975 US: Homburger publishes "'Smokers, Larynx' and Carcinoma of the Larynx in Syrian Hamsters Exposed to Cigarette Smoke".
- 1975 CAN: Professor Bruce N. Ames develops a short term predictive assay for the mutagenicity compounds (the Ames Test). He claims it is a simple and sensitive test for chemicals, which are thought to be mutagens and cause damage to the genetic material of salmonella typhimurium bacteria.

1976

- 1976 UK: Doll & Peto publish their report: "Mortality in Relation to Smoking: 20 Years. Observation on Male British Doctors: 'British Doctors'" (see Nov 1956).
- 1976 US: Homburger publishes "Potential Contribution of Inbred Syrian Hamsters to Future Toxicology".

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- Jan 1976 UK: EEC anti-smoking campaigns are broadcast on TV, radio and in the cinemas.
- Jan 1976 GER: Leuchtenberger, Leuchtenberger, Zbinden and Schleh publish "SE Reactivity of Cigarette Smoke and its Correlation with Carcinogenic Effects on Hamster Lung Cultures".
- Jan 1976 UK: The House of Commons debates a motion on smoking and health in which it is required that tobacco and smoking products are considered to be "substances not themselves medical products but if used without proper safeguards, are capable of causing damage to the health of the community" and should, therefore, be provided for under the Medicines Act of 1968. The motion is withdrawn after a 4-hour debate.
- Jan 1976 US: A Bill is introduced to Senate to establish a tax on cigarettes on a graduated basis according to the brand's tar and nicotine content. The bill is defeated in Aug 1976.
- Spr 1976 UK: BBC television programmes on stopping smoking.
- Oct 1976 US: "Reader's Digest" published the "first information ever furnished to the public" on figures of carbon monoxide in U.S. cigarettes (tar and nicotine are also included).
- Dec 1976 US: "Reader's Digest" publishes "exclusive tables" on hydrogen cyanide and nitrogen oxide levels of U.S. cigarettes. There is also a combined figure (in mg) called the "triple gas ranking" for CO, HCN and NO.

1977

- 1977 US: There is increasing legislation banning smoking in public places during this year.
- 1977 US: There is speculation that the FTC may do carbon monoxide assays and publish the results.
- 1977 UK: The Industry agrees not to introduce new brands of cigarettes with a tar yield greater than 22 mg and not to raise existing brand tar yields above this level.
- 1977 UK: Industry voluntary agreement to restrict advertising in the main media to cigarette brands having a tar yield of 29mg and less.
- 1977 UK: A voluntary code of practice governing sponsored events is agreed by the Industry.

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- 1977 US: Hammond publishes "Some Recent Findings Concerning Cigarette Smoking: '25 states' (Prospective)" (see 1966).
- 1977 UK: The Industry agrees to abide by the guidelines of the ISC for the testing and use of tobacco substitutes and advertising.
- 1977 UK: The Government health warning for cigarette and hand-rolling tobacco packets is modified. The same warning is printed in media advertising: "HM Government Health Department's warning: Cigarettes can seriously damage your health".
- 1977 UK: The third report of the RCP "Smoking or Health" is published. It recommends that the tar and CO yields of cigarettes should be reduced to a low level, with nicotine yields the lowest that smokers would accept without smoking more; research into the attitudes to smoking, methods of education, less harmful ways of smoking and their effects, detection or high risk individuals and methods of stopping must be increased and co-ordinated; restrictions on smoking in public places should be increased; and cigarettes with levels higher than 15mg of tar and 1mg of nicotine should be withdrawn from sale (not put into effect) (see Nov 1983).
- Spr 1977 UK: HEC launches TV campaign on the rights of the non-smoker.
- Jul 1977 UK: Cigarettes with tobacco substitutes are introduced onto the market.
- Jul/Aug 1977 UK: HEC advertisements appear in the press to stop misleading references to part-substitute cigarettes being "safer" than ordinary ones appear in the press.
- Aug 1977 US: FTC publishes July tar league results.
- Sep 1977 UK: Sunday Times colour supplement publishes an article on "How Smoking Killed Four Kings".

1978

- 1978 UK: The Laboratory or the Government Chemist (LGC) begins testing cigarettes for carbon monoxide, but the figures are not released.
- Jan 1978 US: The Secretary of the DHEW announces a new Government initiative to combat smoking: the formation of a new Office on Smoking and Health; restrictions on smoking in DHEW premises; and increased attention to warnings about the hazards of smoking to women taking oral contraceptive drugs.

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Sep 1978 US: A hearing is held before the Sub-Committee on Tobacco of the Committee on Agriculture, House of Representatives, on "Effect of Smoking on Non-Smokers".

1979

1979 US: Publication of "Healthy people: The Surgeon General's report on health promotion and disease prevention, 1979". This is the first Surgeon General's report on health promotion and disease prevention. Smoking is stated to be the largest single preventable cause of illness. Public education on anti-smoking issues and on the risks of smoking are discussed.

1979 US: WEO Expert Committee on Smoking Control publishes "Controlling the Smoking Epidemic".

1979 UK: Voluntary advertising restrictions are extended to cigarette brands of tar yield 23mg and above.

1979 UK: Industry agrees to ensure that no high tar brands appear in Government tar tables.

1979 US: Publication of "Model Studies in Tobacco Carcinogenesis with the Syrian Golden Hamster" by Hoffman, Rivenron, Recht, Hilfrich, Kobayashi and Wynder.

Jan 1979 US: Publication of "Smoking and Health, 1964-79, the continuing controversy" by the IT.

Jan 1979 US: FTC announces its intention to analyse the carbon monoxide content of cigarette smoke and to publish the results.

Jan 1979 US: Surgeon General's report "Smoking and Health a report of the Surgeon General" (A compendium of data from many sources) published.

Feb 1979 US: Auerbach, Hammond and Garfinkel: "Changes in bronchial epithelium in relation to cigarette smoking 1955-1960 vs 1970-1977". It indicates that reduction in tar and nicotine content of cigarette smoke begun in the 1950's is reflected in the histologic changes in the lung.

Apr 1979 US: Development in ultra-low tar smoking. A number of brands are under test.

May 1979 US: EEC campaign with emphasis on no smoking.

Jul 1979 US: The fourth World Conference on Smoking and Health is held in Stockholm (see Jun 1975).

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Nov 1979 UK: Second Report of the ISC is published. It concludes, inter alia, that no cigarette can ever be regarded as completely safe (however, cigarettes can be developed which give less concern than many current brands because they would carry a lower risk to the cardiorespiratory system); ways in which harmful smoke yields can be reduced include development of new tobacco varieties, improved agricultural practice, the use of reconstituted tobacco sheet based on tobacco stem, replacement of some tobacco by substitutes and other smoke diluents and the use of more efficient selective filters and ventilation. The technology or those and other aspects of cigarette production is well developed and some of the noxious yields are being reduced. This should be extended. There is a limit as to how much tar yields can be reduced without rendering cigarettes unacceptable to the smoker but the Committee believes that within this constraint much could be done technically to achieve further reductions in the average tar yield of cigarettes in the near future. In the longer term since it is nicotine that the majority of dependent smokers appear to require, it may be necessary to modify the nicotine delivery of cigarettes or alter factors which could influence its rate of absorption from inhaled smoke to the tissues or the body; it seems likely that it will advocate toxicity testing in animals and other studies in man before it can recommend the addition of exogenous nicotine either in the form of natural nicotine or its salts to the smoking product; and the risks to smoking-related illness would be reduced if carbon monoxide yields were lower (see Oct 1983).

1980

- 1980 US: Rogot & Murray: Smoking and causes of death among US Veterans: 16 years of observation (Prospective): "US Veterans" (see 1959).
- 1980 UK: Industry agrees voluntarily to restrict advertising, to promote the health warning, to strive to reduce tar yields, to finance independent study and to work with the ISC (see Oct 1982). Industry agrees voluntarily to three health warnings to be used on cigarette packets, randomly and simultaneously. These are specified as:
- (a) DANGER: HM Government Health Department's
WARNING: CIGARETTES CAN SERIOUSLY DAMAGE
YOUR HEALTH
 - (b) DANGER: HM Government Health Department's
WARNING: SMOKING MAY COST YOU MORE THAN MONEY

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- (c) DANGER: EM Government Health Department's WARNING:
THE MORE YOU SMOKE THE MORE YOU RISK YOUR HEALTH

The industry agrees to vary the advertisement health warnings likewise. The three warnings to be used in advertisements, in successive six month periods will be:

- (a) DANGER: EM Government Health Department's
WARNING: CIGARETTES CAN SERIOUSLY DAMAGE
YOUR HEALTH
- (b) DANGER: EM Government Health Department's
WARNING: THINK FIRST - MOST DOCTORS DON'T
SMOKE
- (c) DANGER: EM Government Health Department's
WARNING: THINK ABOUT THE HEALTH RISKS BEFORE
SMOKING

The industry agrees: to include health warnings on cigarette advertising in land duty-free areas in the UK:

to increase the areas allotted to health warnings in advertisements from 6% to 9%; to cover the agreement governing cinema advertising only in those showing "X" certificate programmes; that where the use of advertising material on shop windows or the exterior of retail shops is excessive, such material will carry the Government health warning; not to introduce new brands of cigarettes having a yield greater than 20mg and not to raise the existing brand tar yields above this level;

to reduce market average tar yields over the period of the 1980 agreement with E.M.G. by a similar percentage to that achieved between 1972 and 1979; that is, to a level of about 15mg;

for progress in the tar reduction programme to be reviewed annually with the ISC and the Department of Health;

to review with the ISC the average yields of CO and nicotine of all cigarettes sold, in relation to progress in reducing average tar yields; to provide up to £1m per year for five years for independent monitoring research, into the effects of product modifications, as proposed by the ISC; companies will aim to introduce new brands in the two lower tar categories, i.e. at or below 16mg and new brands will not have a tar level exceeding the average for the middle tar group as determined by successive publications of official tar and nicotine tables.

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- 1980 UK: Regarding advertising and promotion, the UK cigarette industry agrees voluntarily: to provide the retail trade and vending machine operators with material on the law regarding the sale of tobacco products to children and to invite retailers to display this; to endeavour to ensure conformity to the relevant codes or practice by advertisers of other products who may use cigarette packets or branded cigarettes in their advertising; progressively to reduce expenditure in poster advertising by 30% subject to allowance for inflation, over the period to 31 July 1982 and regularly to monitor cigarette advertising expenditure; to review the siting of cigarette poster advertising in close proximity to schools, children's playgrounds, etc; to adopt voluntary guidelines to avoid perceived associations between pipe tobacco and cigar television advertising with that for cigarette brands in other media; to provide extra safeguards, through the observations of a Cigarette Promotion Code, for direct mail promotional offers to ensure that they do not come into the hands of young people; that no contracts will be renewed or entered into for cigarette advertising on exteriors of privately owned vehicles; to exercise special care to ensure that non-tobacco goods bearing tobacco names and designs are not marketed in such a way as to appeal to young people; to restrict advertising of brands of tar yield 20mg and over; to advertise low-tar brands preferentially; to continue the 1977 agreement concerning packet health warnings with a revision of the warnings (see Oct 1982).
- Jan 1980 US: Publication of "The Health consequences of smoking for women: A report of the Surgeon General".
- Jan 1980 UK: LGC release figures for carbon monoxide analyses to the cigarette companies but not the public.
- Feb 1980 UK: Hazleton Laboratories Europe begins testing cigarettes for carbon monoxide content on behalf of the Consumers Association for subsequent publication in "Which?".
- Apr 1980 UK: BBC shows a Panorama Programme "A Dying Industry" which deals with the tobacco industry in Third World countries.
- Jul 1980 US: FTC announces the initiation of a programme to determine and publish the carbon monoxide content of cigarette smoke.

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1981

- 1981 UK: P. Froggatt becomes Chairman of the ISC.
- 1981 JAP: Hirayama: "Non-smoking wives of heavy smokers have a higher risk of lung cancer. A study from Japan" published.
- 1981 UK: Doll & Peto: "The Causes of Cancer" is published.
- 1981 Gre: Publication of a paper on "Lung cancer and passive smoking" by D. Tirschopoulos *et al.*
- Jan 1981 US: Report of the Surgeon General "The Health Consequences of Smoking. The changing cigarette" published.
- May 1981 US: First FTC carbon monoxide figures released.
- Aug 1981 UK: Publication of the Report of the Government Chemist in 1980. This includes first figures on carbon monoxide yields of cigarettes.
- Dec 1981 US: The Hatch - Packwood Bill proposing a change in cigarette labelling read before the Senate. It proposes a series of five cigarette packet warning labels for rotational use, originally listed in the FTC report. In addition, it would be unlawful under this Bill for cigarettes to be sold or distributed in the States if the package fails to disclose the level of tar, nicotine and carbon monoxide contained in the cigarettes.

1982

- 1982 EEC: Publication of a series of EEC documents relating to smoking.
- Jan 1982 UK: BBC begins showing a series of 6 five minute programmes by Dr. Miriam Stoppard on giving up smoking.
- Feb 1982 US: Publication of "The Health consequences of smoking; Cancer. A report of the Surgeon General". It claims that a third of all cancer deaths are caused by cigarettes. (It is the first time that cigarettes have been blamed as a major cause or forms of disease other than lung cancer). The report also contains a warning to non-smokers - they are advised to avoid inhaling "second-hand" smoke.
- Feb 1982 UK: Granada show a programme on smoking as part of the "World in Action" series.

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- Mar 1982 UK: New four-year agreement with the Industry on sports sponsorship is announced. Government health warnings will now appear on press and poster advertising for sponsored events and on agreed signs at meetings.
- Aug 1982 UK: BBC includes feature on legislation against advertising of cigarettes in "Newsnight".
- Oct 1982 UK: Revised voluntary agreement on advertising, promotion and health warnings. The size of the health warning on posters will be doubled and that on cigarette packets will be worded more clearly to read "DANGER. Government Health Warning: Cigarettes can seriously damage your health". The Tobacco Advisory Council (TAC) agrees to fund Health Promotion Research Trust to act as an independent body to conduct a programme of research (see 1980).
- Nov 1982 UK: Government league tables include figures for carbon monoxide for first time.

1983

- 1983 US: Publication of "Tumor Promoters and Carcinogens in Tobacco Carcinogenesis" by Hoffman, Hecht and Wynder.
- Apr 1983 UK: Terms of two voluntary agreements reached between Government and TAC and Imported Tobacco Products Advisory Council (ITPAC) released. They deal with "Tobacco products advertising and promotion" and "Tobacco product modification and research".
- Jun 1983 UK: BBC shows "A Plague of Hearts" which examines tobacco advertising.
- Jul 1983 UK: Publication of the latest Government tar league figures.
- Jul 1983 US: The fifth World Conference on Smoking and Health is held in Winnipeg, Canada.
- Jul 1983 UK: Publication of the Office of Population Censuses and Survey (OPCS) Report on "Cigarette smoking: 1972 to 1982".
- Jul 1983 UK: Publication of article in New Scientist "Tar table cheats are sued".
- Sep 1983 UK: Publication of survey by Marsh and Matheson "Smoking attitudes and behaviour: An enquiry carried out on behalf of the Department of Health and Social Security".

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- Sep 1983 UK: OPCS publishes a report on "Smoking among Secondary School Children".
- Sep 1983 JAP: The 6th Asian Pacific Cancer Conference is held in Sendai.
- Oct 1983 UK: 15th Government tar league table is published.
- Oct 1983 UK: Third Report of the ISC published. It concludes, inter alia, that tar is the major tobacco component in lung cancer causation; in future every new design should deliver less than 13mg tar per cigarette; nicotine is not a potent carcinogen and there is no convincing evidence that it is even weakly carcinogenic nor is there consistent evidence indicating nicotine as a co-carcinogen though this requires further investigation; dependence on nicotine is probably the most important single reason for people continuing to smoke; further well-conducted studies should be undertaken at the relevant lower range of nicotine dosage and that compensation should be monitored; there are sufficient health grounds to require substantial reductions in carbon monoxide yields of cigarettes; manufacturers should reduce CO yields of all brands to the lowest practicable values; no new brands should be introduced with carbon monoxide yields exceeding the current estimated sales-weighted mean for all brands of about 15mg/per cigarette; the industry should provide the Health Department with information on sales-weighted carbon monoxide yields in the same way as they already do for tar; a collaborative research committee should be set up to investigate components other than tar, nicotine and carbon monoxide which may contribute to the health hazards of smoke (see 1988). Of particular importance are acrolein, formaldehyde, hydrogen cyanide, cresols, phenols, polycyclic aromatic hydrocarbons, nitrosamines, nitrogen oxides, the inter-relationship of hydrogen cyanide and carbon monoxide with haemoglobin and haematocrit values, acetaldehyde, silica, cadmium, nickel, ammonia and Polonium 210. The industry agreed to provide film over 3 years for independent monitoring research into a less harmful cigarette (see Nov 1980).
- Nov 1983 UK: Follow-up report of the RCP "Health or Smoking" published. It recommends that there be restrictions on smoking in public places, on sales and on promotion; research into the components of cigarette smoke responsible for cardiovascular disease; research into factors which might influence susceptibility to the harmful effects of cigarette smoke; development of accurate measures of passive smoking; further studies of the potential benefit of

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reduced tar/nicotine/carbon monoxide yields in cigarettes; and more research into the nature of tobacco addiction (see 1977).

1984

- 1984 US: Comprehensive Smoking Education Act (amending 1965 Act) came into force, requiring these warnings: (Attribution: Surgeon General's Warning) "Smoking causes lung cancer, heart disease, emphysema and may complicate pregnancy" or "Quitting smoking now greatly reduces serious risks to your health" or "Smoking by pregnant women may result in fetal injury, premature birth and low birth weight" or "Cigarette smoke contains carbon monoxide".
- 1984 UK: Details of Carbon Monoxide yields are added to the DESS's biannual league tables (see 1973).

1985

- 1985 US: Garfinkel: "Involuntary smoking and lung cancer: A case control study" published.
- 1985 NZ: Voluntary agreement on warnings: Attribution to Health Department
"Smoking endangers your health"

1986

- 1986 UK: Dr. Wald "Does breathing other people's tobacco smoke cause lung cancer?"
- 1986 US: Surgeon General's report. "The health consequences of involuntary smoking."
- 1986 UK: New agreement on warnings
The warnings required are:
"Smoking can cause fatal diseases" or
"Smoking can cause heart disease" or
"Smoking when pregnant can injure your baby and cause premature birth" or
"Stopping smoking reduces the risk of serious diseases" or
"Smoking can cause lung cancer, bronchitis and other chest diseases" or
"More than 30,000 people die each year in the UK from lung cancer":
Attribution: Health Departments, Chief Medical Officers.

1987

- 1987 UK: Voluntary agreement on sports sponsorship activities.

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1987 AUS: Federal Government requires new warnings.
"Smoking causes lung cancer" or
"Smoking causes heart disease" or
"Smoking damages your lungs" or
"Smoking reduces your fitness".
Attribution: "Health Authority Warning"

1988

1988 UK: Publication of ISC fourth report. It recommends that the sales weighted average tar yield should be reduced to 13mg by the end of the year and to 12mg by 1991; that both Government and the Industry should consider what further action could be taken to persuade more smokers to favour low tar brands; that there be further investigation into the possibility of developing a range of short-term tests to predict the carcinogenic activity of smoke from modified products; and that the Industry should research ways of reducing the amount of, and deleterious properties of, sidestream smoke (see Oct 1983).

Feb 1988 EUR: The Commission of the European Communities (EC) submits to the Council draft Directives to approximate the laws of member states on (i) labelling of tobacco products and (ii) the maximum tar yield of cigarettes (see May 1989).

Jun 1988 US: Jury decision in Cipollone.

1989

1989 US: The DESS's objectives are published in the Surgeon General's report: by 1990 the sales weighted average tar yield should be reduced to below 10mg; other components known to cause disease should be reduced proportionately and by 1990 the continuing epidemiological research should have delineated unanswered research questions regarding low yield cigarettes and should have generated partial answers.

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May 1989 EUR: The EC rules that, starting 01 Jan 1992, specific warnings should be placed prominently (covering at least 4% of the packet) on all cigarette packs. Tar and nicotine content must also be given on the back of the packet. From 01 Jan 1993 this will extend to all tobacco products (see Feb 1988).

The warnings are:

(a) Warnings which must appear in the national lists:

1. Smoking causes cancer
2. Smoking causes heart disease

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(b) Warnings from which the Member States may choose:

1. Smoking causes fatal diseases
2. Smoking kills
3. Pregnant women: smoking harms your baby
4. Protect children from tobacco smoke
5. Smoking damages the health of those around you
6. Stopping smoking reduces the risk of serious diseases
7. Smoking causes lung cancer, chronic bronchitis and other chest diseases
8. More than ... people die each year in ... (name of a country) from lung cancer
9. Every year ... (name of nationals of a country) die in road accidents times more die from smoking
10. Smokers die before their time
11. Don't smoke if you want to stay healthy
12. Save money: stop smoking

1990

Feb 1991	AUS:	In <i>AFCO v TIA</i> , Morling J. rules that there is "compelling scientific evidence" that ETS causes lung cancer in non-smokers.
Jul 1991	CAN:	In <i>RJR etc v Attorney-General of Canada</i> , Chabot J rules that the proposed ban on tobacco advertising is a form of "social engineering" unacceptable in a free society. The Attorney-General appeals.

1992

Feb 1992		Gerschon Scholem awarded \$85,000 damages for emphysema after exposure to ETS at her Dept of Health workplace.
1992		In <i>AEO v Stoy</i> (a Finnish tobacco company), the plaintiff fails to establish the defendant's liability for his laryngeal cancer.
Jun 1992	USA:	In <i>Cipollone</i> , the US Supreme Court ruled that federal law pre-empted some causes of action against tobacco manufacturers.
Jul 1992	UK:	Potential plaintiffs seek Legal Aid to fund smoking actions.
Dec 1992		The US Environmental Protection Agency publish "Respiratory Health Effects of Passive Smoking", classifying ETS as a human carcinogen.

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1993

- Jan 1993 CAN: The Supreme Court of Quebec reverses Chabot's decision (see Jul 1991). RJR etc appeal to Supreme Court of Canada.
- Jan 1993 UK: Stockport MBC make an out-of-court settlement to employee Veronica Bland who claimed workplace smoking caused her bronchitis.
- Jun 1993 UK: Pauline Wright wins wrongful dismissal case against Ladbrokes after she refused to stop smoking in the betting shop where she worked.
- Sep 1993 AUS: In the Burswood Casino case, a Perth magistrate rules that the evidence did not show ETS exposure to be a possible danger to employees' health.
- Sep 1993 UK: The Legal Aid Board refuses applications to fund actions.

1994

- Mar 1994 USA: Philip Morris brings suit against ABC over nicotine "spiking" allegations on a TV documentary.
- Mar 1994 USA: The US Occupational Safety and Health Administration (OSHA) announce plans to regulate workplace smoking.
- Apr 1994 USA: The House of Representatives Health and Environment Subcommittee chaired by representative Henry Waxman commences investigation of tobacco industry.
- 1994 USA: The US Food and Drug Administration begins investigation into whether tobacco products fall under their jurisdiction and should therefore be regulated or banned.
- May 1994 UK: Following the failure of a Private Member's Bill to ban tobacco advertising, a new voluntary agreement on advertising is concluded between the Government and the UK industry.
- Jul 1994 UK: Potential UK plaintiffs win a judicial review of the Legal Aid Board's decision to refuse funding.

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PROJECT DISCOVERY PHASE II
SCIENTIFIC AND MEDICAL BRIEFING

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1. INTRODUCTION

Literally hundreds of articles on topics related to smoking and health appear in scientific journals every year. This briefing is intended to serve only as a simple introduction to some of the more important aspects of the subject. Those readers with scientific training will inevitably find parts of it simplistic.

The briefing considers some of the evidence for the proposition that smoking is a cause of disease, and in particular of lung cancer. Section 2 discusses the epidemiological and biological evidence and reviews some of the questions which have been raised about its strength and coherence. Section 3 is a brief note on the anatomy and physiology of the lung and heart and Sections 4 and 5 deal generally with diseases of the lung and heart said to be associated with smoking.

Section 6 explains the concept of synergy. Finally, Section 7 considers some allegations about the health effects of ETS.

More reading on smoking and health can be found among the articles in Volume II, Section 6 of the package. Further reference materials on the issues will be made available to the team as necessary, and medical and scientific dictionaries will be found located in the office on the Project Discovery premises.

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2. GENERAL CAUSATION

In product liability litigation against the tobacco industry, plaintiffs need to prove that their injury was caused by their use of tobacco products. Relevant evidence would include medical records and expert testimony. This is the issue of "specific causation". However, also at issue is the question of whether use of tobacco products has been shown to cause injury at all. This is the issue of "general causation". In order to prove general causation, a plaintiff should need to demonstrate both an epidemiological (statistical) association between smoking and the injury (usually a disease) in question, and that a biological mechanism exists whereby smoking could cause the disease.

Epidemiological evidence alone of a statistical association between smoking and the incidence of particular diseases does not scientifically prove that smoking causes those diseases. It follows that a Court should not be satisfied by epidemiological evidence alone.

Due to ethical and moral considerations, experiments to establish the existence of a biological mechanism have been carried out on specially bred laboratory animals, not on humans. Despite much research, however, it is not clear that such a mechanism has been identified in the case of cancer. Although various risk factors for lung cancer, and other cancers, have been identified, the causes of cancer remain speculative and medical research is continuing.

2.1 Epidemiology

Epidemiology is the study of the incidence of disease in defined populations which aims to discover the risk factors in diseases by

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observation of statistical association. There are three types of epidemiological study, "retrospective", "prospective" and "intervention".

In a retrospective study, scientists compare the characteristics and past experience of two groups of people, one group with a particular disease and the other without, in an attempt to identify risk factors for the disease. For example, studies have compared the lifestyles of people suffering from heart disease with the lifestyles of people with healthy hearts, finding that the first group were more likely to be overweight, have fatty diets, drink to excess, smoke, etc. All these factors have thus been identified as risk factors for heart disease on the basis of the observed statistical associations. Note that a risk factor is not the same as a cause. For example, some studies have found a low incidence of heart disease among populations with a diet high in fat (in parts of France). It is interesting to note that there are some populations where smoking is high, e.g. Japan, but incidence of lung cancer relatively low.

The first famous epidemiological study was a retrospective study. It was carried by Dr John Snow in Soho, London, during the cholera plague of the 1850s. Dr Snow examined factors in the lives of local people who had died from cholera, and compared these with factors in the lifestyle of local people who had not succumbed to the disease. He noted a very high association between the incidence of the disease and the use of a water pump in Berwick Street. With some difficulty, since cholera was not then thought to be transmitted through dirty water, Dr Snow persuaded the authorities to close the pump. The plague abated.

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In the simplest kind of prospective study, two groups of people, one group with a particular exposure and the other without, are selected and observed over time to determine whether the incidence rate of the disease varies between the groups. Prospective studies are expensive and may take years to complete. More sophisticated prospective studies record a wide variety of exposures and lifestyle factors in a population over a period of time, and record the incidence of various health outcomes. The "British Doctors Study", which reported an association between smoking and lung cancer in British GPs, was a study of this kind.

Intervention studies involve the division of a group of people into those who (a) receive extensive counselling on "beneficial" changes to lifestyle and (b) those who do not. Intervention studies have, for example, looked at people with a high propensity to chronic heart disease. Surprising reports from a Scandinavian intervention study suggested that the group which received "beneficial" counselling relating to heart disease had a worse health outcome than the group which did not.

2.2 Does a statistical association equal causation?

As indicated above, it is highly questionable whether an association between a factor and disease can ever be relied upon to establish causation. Some experts believe that a sufficiently strong association, together with biological plausibility, is indicative of cause. For

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example, the US Surgeon General (USSG) and the Royal College of Physicians (RCP) have set out certain criteria for a causal inference to be drawn from epidemiological (statistical) data. The criteria adopted in the 1964 USSG's Report were based on those formulated by Henle and Koch and revised by Evans (see Appendix). These criteria, or postulates, are considered in some detail because they have been relied upon to support the allegation of a causal link between smoking and various diseases. Similar criteria have been proposed by other authorities (e.g. the Bradford Hill criteria).

2.3 USSG Criteria

- (a) Temporal sequence: does exposure precede the disease?

Using tobacco as an example, do people smoke before they contract lung cancer?

- (b) Strength: is the effect a large one?

Using tobacco as an example, do a large number of smokers contract lung cancer?

- (c) Is there a Dose-Response Relationship?

If there is a dose-response relationship, the more a person is exposed to the alleged cause the more likely they are to contract the disease. Using tobacco as an example, if there is a dose-response relationship, a person who smokes forty a day is more likely to contract lung cancer than a person who smokes twenty a day.

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- (d) Specificity: is there is a link between a single clearly defined exposure to a specific disease?

In other words, is it possible to rule out other possible causes of a disease? Using tobacco as an example, it is extremely unlikely that a smoker has not been exposed at some time in his life to other suggested carcinogens.

- (e) Consistency: can an effect be demonstrated repeatedly in different studies and in different sub-groups in the same study?

In order to establish consistency, studies must consist of people who are in all respects similar or identical to those used in the original study. It is not a straightforward matter to establish consistency if the subjects of studies differ on grounds of nationality, race, sex, etc.

- (f) Coherence: Is the theory biologically plausible?

Are there in vivo/in vitro data which suggest a reasonable mechanism whilst considering (1) the class of agent (2) the site and duration of contact and (3) the metabolism of the agent? [In vitro data derive from experiments on biological organisms outside the living body. Experiments on living bodies are known in vivo studies]. This criteria deals with what we have previously referred to as the second requirement in order to prove causation, i.e. that there is a biological mechanism. We shall consider in Section 2.5(f) whether or not this criteria has been satisfied.

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2.4 Historical perspectives

Before considering the use of epidemiology, an important distinction must be drawn between differing types of disease. Firstly, there are communicable or infectious diseases such as tuberculosis and polio. Secondly, there are chronic diseases such as cancer and coronary heart disease. The latter are not easily identifiable in laboratory tests because (a) there is no virus involved, (b) there is a long latency period (the disease develops over a number of years rather than a number of days) and (c) there can be multiple causes for chronic disease (e.g. for coronary heart disease, obesity, cholesterol levels and stress have been identified, as possible causal factors).

In the 1930s and 1940s, there were many epidemiological studies of infectious diseases. The findings from these studies led to action to remove suspected causes, which in turn led to a reduction in mortality from infectious diseases throughout the world. As a result of this reduction, the majority of deaths in the world are due to chronic diseases. In view of the high success rate in relation to infectious diseases, the epidemiologists began to investigate the causation of chronic diseases.

In 1950, there were only one or two epidemiological studies which dealt with cancer. In 1951, Professor Sir Richard Doll and Sir Austin Bradford Hill began the "British Doctors Study" of 39,000 doctors, of whom 5,000 were female. In 1952, Hammond & Horn began a US study of 180,000 males. In 1954, a US Veteran study of 273,000 people began. In 1958, an American Cancer Society study of 1,000,000 people began. All

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of these studies were prospective studies. Because of the long latency period of chronic diseases the studies had to be continued over a long period of time.

In 1962 an Advisory Committee was appointed by the USSG to report on the alleged causal link between smoking and ill-health. That Committee reported in 1964. The Committee had to rely on the preliminary reports of the studies referred to above. There were very few animal studies or relevant clinical autopsies. Despite this, the Committee came to the conclusion that smoking was linked with various diseases.

Some two years earlier in 1962, the RCP produced their first report with similar conclusions. Their report was based on the studies referred to above.

Since 1964, there have been numerous reports of the USSG and the RCP. Apart from regular reports of the studies referred to above and a number of intervention trials, no further major studies have been conducted. Subsequent reports of both the RCP and the USSG have come to firm conclusions upon the relationship between smoking and various diseases.

For further reading, see Volume II Section 6 of this package.

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2.5 Evaluation of the epidemiological and other evidence relating to smoking and health

Taking the example of lung cancer, we consider below the criteria relied on by the RCP and USSG in reaching their conclusion that smoking is a cause of the disease. There are a wide number of diseases statistically associated with smoking. The extent to which the criteria have been satisfied in respect of all of these differs from disease to disease. You should bear in mind, therefore, that in the case of other diseases, the evidence that they are caused by smoking is not necessarily as strong as the evidence is held to be in the case of lung cancer.

(a) Temporal Sequence

One of the conclusions drawn by the studies referred to above is that smokers contract lung cancer (i.e. smoking precedes the disease). It is also alleged in the studies that increases in the mortality rate due to cancer are synchronous (ie can be correlated with) with increases in the incidence of cigarette smoking.

Some have suggested that a number of other factors must also be considered, for example age. People now live longer (and do not die of diseases which their predecessors had died of such as TB). Reported incidence of cancer has risen. It may be that, when corrected for the differential age distribution (i.e. the fact that comparatively there are more old than young people), the increase in the incidence of lung cancer may be seen as much less marked, or even to vanish completely.

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Another possibility is that the apparent relative increase of cancer of the lung is largely, if not entirely, due to errors in diagnosis and in particular, detection bias. For example a man suffering the chest complaints visits the doctor. The doctor asks him whether he smokes. He does. This leads the doctor to diagnose a smoking-related illness. If the man does not smoke, the doctor is less likely to diagnose a smoking-related illness. Also of particular interest is the relationship observed in the differing patterns of incidence of cancer for males and females. In the UK there was a sharp increase in cigarette consumption amongst women about 30 years after the sharp increase had occurred in men. According to Professor Burch, the increases in cancer incidence in both sexes were synchronous. It is questionable, therefore, that the increase (let alone the disease itself) was caused by cigarette smoking.

(b) Strength

The USSG states that a relative risk (RR) measures the strength of an association and provides an evaluation of the importance of the factor in the production of the disease. The RR is calculated by dividing the death rate in smokers by the death rate in non-smokers. Where there is no difference, therefore, between the death rate in smokers and the death rate in non-smokers, the RR will be 1.

According to Leonard Schumann, one of the scientists on the USSG's 1964 Committee, an RR of 2 is weak, 3 is moderate and only at 4 could it be considered at all strong. An RR of around 10 has been cited for smoking and lung cancer. [Note that in 1988, the UK Independent Scientific

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Committee on Smoking and Health estimated the RR for "passive smoking" and lung cancer as 1.1 - 1.3. On any view, this is very weak indeed.]

The apparent strength of this RR may, however, be explicable without reference to causation. It may well be, after all, that smokers share some other factors than smoking in common. There is much evidence that they do (e.g. dietary factors). If lung cancer is caused, in fact, by something other than smoking common to smokers, then this would explain the strength of the RR. Consider the very strong association between owning a driving licence and being involved in a traffic accident: the licence is not the cause of the accident.

(c) Dose-Response Relationship

Studies have reported that incidence of lung cancer is higher among heavier smokers.

(d) Specificity

It has been stated before that one difficulty in establishing a causal link between smoking and disease is that there is no smoker who has not been also exposed to other substances claimed to be carcinogens. Specificity is, therefore, almost impossible to establish.

(e) Consistency

Studies do provide some evidence of consistency for the association between smoking and lung cancer. Nevertheless, although the smoking and

lung cancer studies show an overall trend, the RRs vary considerably. In the British doctors study the RR for lung cancer is 14, in the US veteran study the RR for lung cancer is 11, in the American Cancer Society study the RR is 9.

(f) Coherence

Despite many attempts, no researchers have reported success in producing lung tumours in laboratory animals by exposing them to tobacco smoke. Since biological evidence is lacking, it is scarcely possible to establish coherence between biological and epidemiological findings.

It has been possible to produce tracheal or laryngeal tumours in hamsters exposed to tobacco smoke in inhalation studies, but the strain of hamster used is particularly susceptible to those types of tumour. Even in these hamsters, no lung cancer has been reported.

It has been known since the 1950s that, when cigarette smoke condensate is painted onto the skin of mice, skin tumours have developed. The relevance of these tests to lung cancer in humans is highly questionable: the test substance, the tissue and the health outcome are all different. The condensate used in such experiments is so concentrated as to represent a quantity of cigarettes beyond the consumption capacity of a human smoker.

Furthermore, the application of other substances in concentrated form, including for example tomato juice, produces similar tumours.

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Aside from the application of the criteria, a number of other points can be made in respect of the epidemiological studies:

- (a) Epidemiological studies (statistics) cannot prove specific causation, i.e. they cannot prove what caused a particular tumour in a particular person. They are applicable only to the general population.
- (b) They are anomalies in the studies themselves in the dose-response relationships. In the British doctors study inhalers of cigarette smoke have less cancer than non inhaler. In the US Veteran study the average age of death of lung cancer victims in the study was the same independent of how many cigarettes they smoked and at what age they started to smoke.
- (c) The individual studies exhibit certain flaws.
 - The subjects chosen are not representative of any of the population which they might be considered to represent as a whole. UK doctors are not representative of the British population. The US Veteran study and the American Cancer Society studies represent middle class urban Americans who have different health patterns to the US general population as a whole.
 - Information was not sought during the course of the studies on genetics, stress, diet, occupation and other factors that may be relevant. This is primarily because the studies started from the assumption that there was a causal link between smoking and various diseases.

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- The data collected are unreliable. Cause of death is very frequently recorded without evidence from an autopsy. Studies have shown that the information recorded on death certificates are unreliable. Death certificate information is particularly prone to detection bias.

- Subjects in the studies are volunteers; selection is not strictly random. For example, only 68% of doctors took part in the British Doctors study although all were invited to do so.

- The fact that someone smokes is a matter of choice. Smokers, therefore, self select the habit. They are not randomly assigned as are animals subject to cigarette smoke.

2.6 Alternative Hypotheses

Finally, little research has been done into alternative theories. The chief alternative theory is the constitutional or genetic hypothesis. In the 1950's the chief proponent of this theory was Sir Ronald Fisher, an eminent statistician. The hypothesis has been adapted by Professor Hans Eysenck, the psychiatrist, and Professor Philip Burch, a medical physicist. Eysenck's hypothesis is that:

- (a) Genetic factors play a large part in the development of lung cancer and

- (b) Genetic factors play a large part in causing a person to smoke.

It is likely that these factors overlap. The hypothesis also claims that genetic factors are very influential in determining individual

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differences in personality and these differences in turn are related to smoking and lung cancer. Finally stress is related to smoking and lung cancer.

It is not suggested that genetic factors by themselves are sufficient to cause lung cancer or coronary heart disease. It is merely suggested that they play an important part in predisposing certain types of people to develop these particular diseases.

The evidence available shows that lung cancer develops more readily in extraverted rather than introverted people, stable rather than emotionally unstable or neurotic people, and in normal rather than in persons tending towards neuroticism and psychoticism.

As far as coronary heart disease is concerned the link is in the opposite if any. Coronary heart disease is expected to be related to neuroticism rather than stability, neuroticism rather than normality and introversion rather than extraversion.

Personality also becomes important when looking at ex-smokers as compared with smokers. At the time of quitting an ex-smokers personality is more like that of a non-smoker than a smoker.

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3. NOTE ON ANATOMY AND PHYSIOLOGY

3.1 The Lung

The lung consists of apparatus to remove carbon monoxide from the blood and to oxygenate the blood. This exchange takes place at the alveoli which are at the ends of the bronchii. There are 300 billion alveoli.

Air enters the lungs through the mouth and nasal passage, passes through the larynx (in the throat) and down the trachea (below on the neck) until it reaches the lungs. At this point the trachea becomes the bronchii and bifurcates. One arm goes into the left lung the other arm goes into the right lung. Almost immediately upon entering the lung both parts of the bronchii divide further.

The lungs are positioned near the heart under the rib case. In order to protect the lungs from ripping on the ribs, the ribs are covered by pleura. There is an inner (visceral) and an outer (parental) pleura.

The part of the lung which supports the bronchii and alveoli is called the interstitium. The area which surrounds the heart, and oesophagus is called the mediastinum.

3.2 Defence Mechanisms of the Lung

- (a) The muco-ciliary transport system. The lining of the bronchii consists of a mucus layer of cells resting on hairs (cilia). These hairs beat rapidly. If these cilia are damaged a person's ability to clear the lungs of carbon monoxide is impaired.

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- (b) Scavenger cells located in the fluids in the alveoli ducts (macrophages) clear foreign bodies from the lungs. Sometimes the macrophage does not engulf all the foreign bodies; it spills more than it engulfs causing tissue degeneration.

- (c) Killer cells (lymphocytes) recognise and seize cancer cells. If the lymphocytes are overwhelmed they cannot eliminate pollutants including smoke.

3.3 The Cardiovascular System

This is the system where oxygen is exchanged for carbon dioxide and where the body eg the liver and kidneys cleanse themselves using metabolites. The heart is one of three types of muscle in the body; voluntary (eg the arm) involuntary (eg the gut lining) and striated (eg the heart). The heart has its own circulatory system which makes it uniquely susceptible to disease.

Peripheral vascular disease (PVD)* has a less devastating effect than disease of the heart on the circulatory system.

* Disease of the extremities (eg the fingers, toes) of the vascular system. The vascular system is the system of vessels, ducts etc for transporting blood around the body.

The heart and lung work together (the point of interaction is the alveoli). Therefore if there is a problem in either one there will be a problem in the other. If there is inefficient oxygenation the heart will have to work harder to pump more blood around the body. The development of lung disease and heart disease usually occur together.

The heart does not do all the pumping of blood. Arteries expand and contract.

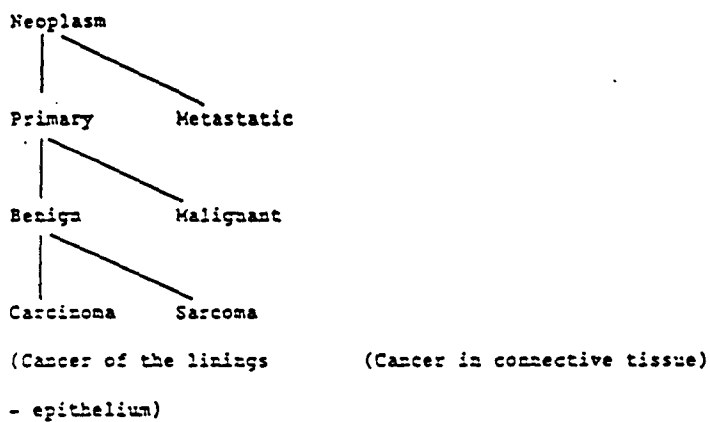
Oxygen is carried in the blood stream in haemoglobin. Unfortunately haemoglobin would rather carry carbon monoxide than oxygen. If, therefore, carbon monoxide is available the haemoglobin will absorb it in preference to oxygen. In order to ensure that parts of the body have sufficient oxygen, the heart has to work harder.

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4. DISEASES OF THE LUNG

4.1. Cancer



Neoplasm means new growth and there are two types in the body:

- (a) metastatic - the growth started elsewhere and travelled to the site by the lymph or bloodstream.
- (b) primary - the growth started in the particular organ or part of the body in which it is found.

4.2 Primary growths may be:

- (i) benign or,
- (ii) malignant.

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The difference between a benign and malignant primary growth is that a benign neoplasm is a growth encapsulated by a surrounding membrane. If it is benign the neoplasm will not grow. If it is a malignant growth it has no well visualised boundary and it invades cells (nearby tissue areas) and metastasises i.e. destroys tissue functions. If it is malignant its type determines what treatment is given to the patient. Detection of these growths is by sight under a microscope.

Malignant growths may be a:

- (a) carcinoma - a cancer growth of epithelial (see Appendix I) tissue or a
- (b) sarcoma - a cancer growth of the connective tissue.

Therefore a bronchogenic carcinoma is one which originated in the bronchus and is a malignant growth.

In order to ascertain the cause of the type of cancer one has to look at three things:-

- (a) Cell type: histological (tissue) typing.
- (b) Progress/clinical course.
- (c) Other possible factors e.g. tuberculosis, lung scars, infections, industrial exposures, genetics.

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(a) Cell type

Classifying tumours is done by:-

- the appearance of the cell, and
- the architecture of the cell.

The pathologist detects both the above under a microscope. There are 13 classifications of cell tissues according to the World Health Organisation (W.H.O.) but there are four basic types of tissue which account for 95% of all lung tumours:

- Squamous,
- Small cell (an oat cell is a special type of small cell),
- Adenocarcinoma, and
- Large cell.

In 1962 a Scandinavian pathologist called Kreyberg classified cells into developed two types:

- Kreyberg type I: squamous and small cell,
- Kreyberg type II: adenocarcinoma, large cell, and others.

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Cell types associated with cigarette smoking:

Kreyberg type 1 was associated with cigarette smoking but type 2 was not. In the 1964 USSG's report the distinction between the 2 types was blurred. It is now alleged that all four cell types are associated with cigarette smoking. It is possible to have a mixture of the four types found in a tumour but the predominant cell type can be ascertained from the specimen of the tumour taken.

If the tumour is located in the periphery of the lung is highly unlikely that it is a small cell type. Table 1 gives an indication where one would expect to find the different types of cell.

Table 1

<u>Cell Types</u>	<u>N</u>	<u>Location to Lung</u>	<u>Growth Rate</u>	<u>Metastatic</u>
(i) Squamous	30-40	Central	Slow	Slow
(ii) Small cell (oat cell)	20	Central	Fast	Fast
(iii) Adeno- carcinoma	30	Periphery	Fast	Slow
(iv) Large Cell	10	Variable	Slow	Fast
(v) Other		5		

In cigarette smokers one would expect a tumour (of any type) at the bifurcation (dividing point) of the bronchii as it is this point most smoke reaches. It must also be established that the tumour is in fact in the lung and not in the mediastinum. This is a common mistake.

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(b) Progress/Clinical course

Treatment of the various cell types:

- Squamous - surgical removal. It is possible to remove to the entire tumour.
- Small cell - chemo or radiation therapy.
- Adenocarcinoma - surgery and chemo or radiation therapy depending on the metastatic rate. (See below for meaning of metastatic.)
- Large cell - chemo or radiation therapy.

Growth of a Tumour

If a carcinoma originates in the walls or linings of the bronchii it usually grows inwards. If a tumour grows outwards it most likely that it is caused by a viral infection and is not a squamous tumour.

Metastasis

Metastasis is the transfer of a disease from one part of the body or organ of the body to another part.

As the lung cleanses the body of carbon dioxide and replaces it with oxygen it is estimated that 50% of cancer in the body metastasises to the lung. It is essential to differentiate between a primary (the

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original cancer) and a secondary (a cancer caused by metastasis). The secondary tumour is not necessarily of the same type as the primary tumour. The secondary tumour usually grows faster than the primary tumour. Secondary tumours sometimes have multiple focii (i.e. they have several centres).

A sarcoma is transplantable. It does not metastasise.

(c) Other factors

Numerous other factors have been associated with lung cancer, including exposure to asbestos, industrial pollution, a deficiency of betacarotene, a deficiency of Vitamin A.

Diagnostic Techniques

(a) Visual:

- X-rays, CAT-scans (Computerised Axial Tomography) and,
- Bronchoscope - A flexible tube is inserted into the trachea where one can see into the major bronchi for blockages.

(b) Tissue:

- Biopsy by using a bronchoscope by scraping off some cells or by washing where the area is washed and the liquid is removed or by brushing off some cells.

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- Exploratory surgery.

- A needle biopsy - where a needle is inserted into the chest cavity and liquid is removed for testing.

- Sputum cytology - where the patient spits mucus from the lung and the mucus is examined for tumourogenic cells.

Other tests include biochemical tests e.g. blood and urine. Different cells give off different types of chemicals. Finally, the most accurate approach to diagnosis is the conduct of an autopsy.

4.2 Chronic Non-Malignant Lung Disease

Lung obstruction - the lung reacts to foreign particles in three general physiological reactional ways:

- (a) inflammatory,

- (b) fibrogenic - tissue tries to ward off a foreign intruder e.g. (silicate or asbestos particles) which leads to scarring, and

- (c) neoplasm - benign or malignant growth. The lung may react in one or more of these ways.

Chronic non malignant lung disease is also known as chronic obstructional lung disease (COLD).

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COLD includes:

(a) Emphysema:

The tissue walls of the alveoli disintegrate. This means there is air where there should not be. An emphysema sufferer cannot blow air forcefully or quickly out of the lung. There are various types of emphysema.

(b) Chronic Bronchitis - This is characterised by chronic mucus production and by swelling of the airways. It is often diagnosed with emphysema.

Restrictive lung disease (RLD) is where the lung forms scars to protect itself from inhaled particles of asbestos, silica etc. The lung becomes very stiff so air cannot easily be inhaled or exhaled.

If one can prove the patient has RLD and not COLD then industrial factors are the likely cause.

The distinction between RLD and COLD is seen through pulmonary function tests where the volume and rate of air expelled is measured. These tests can depend on the effort given in blowing i.e. it is an effort dependent test.

The test depends on the determination of what is standard which involves questions of age, sex, height and weight. There are tables of the acceptable range for the above combinations. The predicted value for a

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female 30 years of age of 5.3" and 120 lbs is 100. However the range is 70-130 and therefore is a very wide range.

The death toll from COLD in the US is approximately 60,000 out of 2,000,000. ANK book on COLD by Fletcher shows that the majority of heavy smokers do not develop COLD.

The existence of a causative link between smoking and COLD is disputed. COLD is a multifunctional disease where the relative risk ratios are low. Animal studies have not shown that emphysema is caused by cigarette smoke. It is disputed whether a decrease in force expiratory volume (FEV) is a pre-condition for emphysema. Generally as people age, they lose pulmonary function.

4.3 Other Ways in which Smoking may affect the Lungs

Defence Mechanisms

It is alleged that cigarette smoking overwhelms the defence mechanisms and inhibits the ability of DNA to regenerate cells. This is known as the oncogene theory.

- (a) Mucilliary transport system: it is claimed that cigarette smoking toxifies the cilia and stops mucus being expelled. Smoke therefore remains in the lungs.

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- (b) Macrophages: it is alleged that cigarette smoking overwhelms the macrophages which cannot then handle other pollutants that are taken in.

- (c) Lymphocytes: it is alleged that cigarette smoking overwhelms the lymphocytes which cannot then eliminate pollutants.

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5. DISEASES OF THE HEART

It is alleged that cigarette smoking compromises cardiovascular performance by constricting circulation and thus depriving the cells of oxygen. Nicotine is a pharmacologically active compound. It is alleged that nicotine hardens or changes the tone of the arteries thus causing thrombosis (clotting). Further, carbon monoxide puts pressure on the cardiovascular system by forming carboxyhaemoglobins.

Although it is reported that smoking causes hypertension, i.e. raises blood pressure, it is not clear that it does so to any greater degree than moderate exercise.

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6. SYNERGY

Synergy is the combined effect of any two substances which is greater than the sum of the effect of either substance acting alone. Using tobacco and asbestos as an example, if the relative risk ratio of developing lung cancer for a person with asbestos exposure is 5 and the relative risk ratio for a smoker without asbestos exposure is 10 there is synergy if the relative risk factor for a smoker exposed to asbestos is 50 or more. The combined effect is multiplicative not additive. If the effect was additive the relative risk ratio would be 15.

Asbestos and Cigarette Smoke

Only one study has found that the synergy effect. This study was performed by Selikoff. In this study 17,000 insulation workers were examined, 95% had smoked at some stage in their life and all had been exposed to asbestos for a minimum of 30 years.

Relative Risk Ratios

	<u>Non-Smoker</u>	<u>Smoker</u>
No Asbestos Exposure	1	10
Asbestos Exposure	5	50-90

Asbestos is definitely a carcinogen but the toxicity of asbestos depends upon the fibre type. A list of fibre types appears on page 4 of Appendix I.

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One criticism of the Selikoff study is that the insulation workers were aged between 50 and 55. It is a known fact that asbestos shortens the cancer latency period.

Because asbestos shortens the latency period one would expect a greater lung cancer rate between 50 and 55 in persons exposed to asbestos than in persons not so exposed. The study does not, therefore, compare like with like.

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7. ENVIRONMENTAL TOBACCO SMOKE

7.1 ETS and Lung Cancer

Up to about 15 years ago, little thought had been given to the possibility that so called "passive smoking" might be a health hazard to non-smokers. "Passive smoking" is an emotive and somewhat inaccurate term. "Environmental Tobacco Smoke" (ETS), as it is more properly known, is a mixture of the sidestream smoke one sees rising in a plume from the burning end of the cigarette between puffs, and mainstream smoke exhaled by the smoker after puffing. In comparison to the smoke a smoker draws directly from the cigarette, ETS is vastly diluted. It also ages rapidly as it disperses into the atmosphere, and since its chemical constituents age at different rates, its chemical composition is constantly changing. For this reason, there is no agreement on a chemical definition on ETS. There is no question that, to some people, ETS smells unpleasant and that it causes discomfort to the eyes and upper respiratory tract. Many non-smokers prefer to avoid smokey atmospheres for these reasons alone. However, in recent years, a number of authorities have stated that ETS presents a serious threat to health. In 1988, the UK Independent Scientific Committee on Smoking and Health concluded that the available data were consistent with a small increase of risk of lung cancer for non-smokers exposed to ETS (RR 1.1 - 1.3). At the end of 1992, the US Environmental Protection Agency came to a similar conclusion, and classified ETS as a "Group A" (known human carcinogen). Both reports also acknowledged evidence that ETS may be a cause of respiratory conditions among the young.

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The conclusions on lung cancer were based primarily on epidemiological studies, of which there are now almost 40. The majority of these studies took as their subjects groups of wives exposed to their husband's smoking and groups of wives not exposed. The findings, on examination, appear to be far from conclusive. Around 80 per cent of the studies did not report a statistically significant increase in risk [an increase which does not achieve statistical significance is consistent with there being no increase at all, or even a decrease in risk]. The few studies which did report a statistically significant increase have been criticized in the scientific literature for numerous flaws. It is possible, however, through a technique known as "meta-analysis" to combine the results of the studies and arrive at an overall estimate of risk. This is what the EPA did in their 1992 report.

The technique of meta-analysis was designed primarily for grouping together studies of similar design. The ETS and lung cancer epidemiological studies were conducted in different countries, using different methodologies, selecting subjects in different ways, and dealing with numbers of lung cancers varying from 19 to well over 400. In addition to performing a meta-analysis, the EPA also changed the "confidence levels" of their risk estimate from the customary 95 per cent to 90 per cent. In simple terms, a 95 per cent confidence interval in statistical analysis means that the possibility of the results arising by chance is estimated at 5 per cent. The use of 90 per cent confidence intervals in effect doubles the uncertainty of the analysis. By changing the confidence intervals, and by omitting certain available data, the EPA arrived at a statistically significant overall increase in risk through their analysis of the US-based ETS and lung cancer

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studies. [The EPA's procedure in arriving at their risk assessment is currently the subject of a legal challenge by some US tobacco manufacturers and other tobacco interests].

The EPA's estimate of increase in risk was 1.19 (very much in line with Independent Scientific Committee's 1.1 to 1.3). Some authorities regard increases in risk of this extremely small magnitude as hard if not impossible to interpret (see page 10). For example, it has been suggested that this result could entirely be accounted for by the erroneous misclassification of smokers or ex-smokers as non-smokers when the studies were being conducted.

Despite its endorsement of the epidemiological evidence, the EPA stated that it would have been possible to class ETS as a known human carcinogen merely by extrapolation from the health effects of "active smoking". This conclusion is also questionable. The epidemiological studies estimated ETS exposure almost exclusively by the questionnaire method, i.e. they asked the subjects to report their own exposure to ETS, or asked friends or relatives about such exposure. The use of questionnaires has obviously pitfalls. There have been attempts, outside the epidemiological studies, to estimate more accurately people's exposure to ETS. Levels of specific chemical constituents of ETS, such as nicotine, have been measured in indoor atmospheres. Researchers have also looked for cotinine, a metabolite of nicotine in body fluids of non-smokers. Recently, work has been undertaken with personal monitors which can pick up and measure tobacco-specific chemical components from the atmosphere. Although there is disagreement in scientific circles, the weight of evidence appears to suggest that

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non-smokers exposed to ETS are not exposed to the constituents of tobacco smoke anything like as intensely as actual smokers. For example, it has been estimated that it would be necessary to spend 100 hours in an office, restaurant or other facility where smoking takes place to be exposed to nicotine equivalent of one cigarette.

7.2 ETS and Heart Disease

There have been about a dozen studies of ETS exposure and heart disease, some of them very small, and again the majority have not found a statistically significant increase in risk. In any epidemiological study, it is important to take account of "confounding factors", i.e. factors other than the exposure of interest which might plausibly affect the findings. In the case of heart disease, a very large number of possible risk factors have been cited (including obesity, high blood pressure, lack of exercise, stress, etc), and it is not clear that the studies of ETS and heart disease have taken account of these factors at all adequately. For example, the two largest such studies did not have any data on the blood pressure or serum cholesterol of their subjects.

7.3 ETS and Respiratory Conditions

It has been suggested that exposure to ETS might be the cause of chronic obstructive lung disease (bronchitis and emphysema), asthma, and even pneumonia. A very large number of studies have examined ETS in relation to such conditions in both adults and children, and the picture is by no means clear. A reasonably consistent association has indeed been found between parental smoking and the incidence of respiratory conditions in

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pre-school children. However, this association does not persist among older children, suggesting that if there is any effect it is short term. In addition, it is difficult for such studies to take adequate account of confounding factors such as damp and mouldy housing, cross infection by siblings, air pollution, and the types of fuel used for cooking and heating in the home.

The data for adults is even less clear. Some studies report an increased incidence of respiratory conditions among those adults exposed to ETS, while some do not; furthermore, there is inconsistency in the symptoms and lung function responses reported. Some studies experimentally exposed adult asthmatic subjects to ETS and produced divergent results. ETS, of course, has a distinctive smell, and in many circumstances is easily visible. In subjects who are prone to respiratory symptoms, such as asthmatics, it is difficult, therefore, to distinguish psychologically motivated reactions from physiological responses.

7.4 Conclusion

Interest in the possible health effects of ETS has never been higher, and it is likely that much more research will be published in the coming years. An international cancer research agency, IARC, is conducting ETS and lung cancer studies in six different locations, and preliminary results are expected next year. In March of this year, the UK Government convened a new scientific committee on tobacco and health which, as part of its remit, will look again at the claimed health hazards of ETS.

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APPENDIX

Keale-Koch-Evans Postulates

These postulates were first devised in the 19th century by Keale and Koch and subsequently revised by Evans:

1. The presence rate of disease should be significantly higher in those exposed to the hypothetical cause than in those not so exposed. Using tobacco as an example, more smokers than non-smokers should contract lung cancer.
2. Exposure to the hypothetical cause should be more frequent amongst with the disease than amongst those without the disease. Using tobacco as an example, if one studies those people with lung cancer, more of them should be smokers than the rest of the population who do not have lung cancer.
3. The incidence of the disease should be significantly higher in those exposed to the hypothetical cause than in those not so exposed. Using tobacco as an example, more than 50% of smokers should contract lung cancer.
4. The disease should follow exposure to the hypothetical cause, i.e. there should be a temporal relationship.
5. There should be a dose-response relationship.

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6. The hypothetical cause must be capable of reproducing the disease in animals.
7. Elimination or modification of the hypothetical cause should lead to reduced incidence of the disease. Using tobacco as an example, if there is a drop in the number of people who smoke, the incidence of lung cancer should be less.
8. Prevention or modification of the hypothetical cause should decrease or eliminate the risk. Using tobacco as an example, a reduction in the number of cigarettes smoked or the smoking of lower tar cigarettes should lead to a reduced factor of contracting lung cancer.
9. Finally, the association should make epidemiological and biological sense.

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PHASE TWO REVIEW

12 PAPERS ON BACKGROUND READING

American Tobacco Companies Sue EPA

Philip Morris and RJR Nabisco, the two largest US tobacco companies, are at the forefront of a suit against the Environmental Protection Agency (EPA) claiming that its environmental tobacco smoke (ETS) risk assessment, released at the beginning of the year, is unscientific, arbitrary and capricious. The companies accused the EPA of manipulating and "cherry picking" data and claim that the classification of ETS as a known human carcinogen has already had an adverse impact on their business. (FT 23/6/93, Guardian 24/6/93, DT 24/6/93).

Low Tar/Low Nicotine Cigarettes Offer: "No Health Benefit"

The American Lung Association has claimed that low tar and low nicotine cigarettes offer little or no health benefit compared to other brands. They say that advertisements promoting them should be banned because they give "a false sense of security" (Guardian 17/8/93).

"National Review" Returns to EPA Report

The US National Review, which in its 19th July article: "Second-Hand Science" attacked the "junk science" on which the EPA based its ETS risk assessment, returned to the subject in a 20th September column. Under the heading "They Don't Embarrass Easy", the Review observes: "It is revealing that some of the harshest criticism of the EPA's classification of ETS as a Group A carcinogen has come from scientists within the EPA". According to the Review, a report by the EPA's Environmental Criteria and Assessment Office (ECAO), produced before the publication of the risk assessment, stated that "studies of the health effects of second-hand smoke reflect limited evidence of human carcinogenicity". The ECAO recommended it not be classified as a Group A carcinogen.

On 23rd March, 1992, a review by ECAO epidemiologist, Patricia Murphy, is said to have characterised the risk assessment as "poorly organised and badly argued". In particular, she called attention to the publication bias problem which, she argues, inherently biases the process of meta analysis in the direction of finding a relationship. "The report on ETS was entirely meta analysis of a selection of old studies that had found no more than a weak relationship between ETS and disease" (National Review 20/9/93).

Article: "Smoke Signals" by Martin Day and Charles Hopkins

A review of tobacco litigation in the US and UK: the authors claim that a "storm of litigation" is gathering over the tobacco industry. They refer to the view of a New York

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investment analyst, Jack Hersh, who suggested that the next three years would see litigation costing the industry enormous sums of money and advising investors to "steer clear" of tobacco industry securities.

According to the authors, the judgments in *Cipollone v Liggett Group* and *Haines v Liggett* in the US last year were "ground-breaking". The former judgment allowed plaintiffs to proceed to trial in alleged negligence, conspiracy and fraudulent misrepresentation, as well as to claim for extra damages relating to alleged conspiracy. In the *Haines* case, the judge ordered the production of important documents. It is suggested that the main stumbling block to the award of significant damages in such cases is the US contingency fee system, which calls for plaintiffs' lawyers to bear the enormous cost of fighting vigorously defended cases. Nevertheless, despite the discontinuation of the *Cipollone* and *Haynes* cases, Day and Hopkins feel that the decisions hold good and will be of benefit to future plaintiffs. They claim that the same is true of Judge Bogen's pre-trial ruling in *Wilks v American* that "Cigarettes are, as a matter of law, defective and unreasonably dangerous for human consumption [being] the most lethal product which may be sold in this country".

The authors go on to review the progress of some three hundred potential plaintiffs in the UK who were refused legal aid on appeal in early July, "following lengthy representations made by the tobacco companies' lawyers". They also mention the two claims being pursued in Scotland and Northern Ireland.

Turning to "passive smoking" claims, the authors comment that "there can be little doubt that this area of litigation has already reached storm phase and it is not just employers who have had to face the wrath of non-smokers. Claims have commenced against Quantas Airlines in Australia and against some of the fast foods stores in the USA, such as McDonalds, for permitting smoking on its premises". They do not view the potential impact of "passive smoking" claims as being of equal significance for the industry as direct claims. They conclude: "What is really needed to bring Mr Hersh's predictions to fruition is the success of just one or two direct smoking claims. Whether this occurs in the USA, Australia or the UK will make little difference. Once it does the writing will be on the wall for the industry worldwide." (Law Society Gazette 24/11/93).

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Nicotine "Spiking" Claim

The US Food and Drug Administration (FDA) has claimed in a letter to Congress that American cigarette manufacturers are adding extra nicotine to their products. According to the FDA, in the course of the manufacturing process, nicotine

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extract is sprayed onto sheets of tobacco fibre before they are shredded to be made into cigarettes. FDA head, David Kessler, claimed that companies were adding nicotine "to achieve drug effects in some smokers". Congress has agreed to hold hearings on the FDA's proposal that tobacco products should be treated as potentially hazardous drugs and come within their jurisdiction (IOS 27/2/94).

FDA Threatens Cigarette Regulation

The US Food and Drug Administration have said that it is prepared to reclassify nicotine as a drug on the grounds that it is addictive. This could lead to more stringent regulation of tobacco products, and conceivably to a ban on cigarettes. FDA Commissioner David Kessler has referred to an alleged tobacco industry practice of manipulating nicotine content in cigarettes during processing. Until now, according to Kessler, the FDA had given the tobacco industry "the benefit of the doubt as to whether they intend cigarettes to be used for this purpose (i.e. affecting the function of the body because some people smoke for other than the drug affect). The alleged new evidence suggested to him that the FDA may not have been sufficiently sceptical. The US Tobacco Institute denied that the nicotine level of products was altered to promote addiction (BMJ 5/3/94).

Morris Companies Inc, Philip Morris Inc, RJR Nabisco Inc, RJ Reynolds Tobacco Co, Liggett Group Inc And Reynolds RJ Tobacco

A class action has been brought on behalf of all residents or domiciliaries of the United States who have used and claim to have been addicted to tobacco products manufactured by the Defendants. There are claims for relief under the following headings: fraud and deceit, negligent misrepresentation, violation of consumer protection statutes, breach of express warranty, breach of implied warranty, intentional infliction of emotional distress, negligence, strict liability, and retribution.

The Plaintiffs also seek equitable (injunctive and/or declaratory) relief. The complaint in summary is that the tobacco products manufactured and marketed by the Defendants were, as the Defendants knew, addictive, and that levels of nicotine in the products have been manipulated by the Defendants to cause and maintain addiction. Equitable relief is sought on the grounds that the Plaintiffs cannot be adequately compensated for injuries suffered or threatened, and the claim therefore calls for disgorgement to the Plaintiffs of all profits from the sale of cigarettes (Class action complaint in the US District Court, Eastern District of Louisiana 29/3/94).

Waxman Committee Invites Tobacco Company Testimony

The Congressional sub committee on health and the environment, chaired by Representative Henry A Waxman, has written to the

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chief executive officers of the seven major US tobacco companies inviting them to testify at a Hearing on 14th April. Indicating that Congress has the authority to issue subpoenas, Waxman said "We are going to insist that they come".

Following testimony by FDA Commissioner, David Kessler, Waxman released a copy of a 1983 paper by a Philip Morris research scientist which appeared to suggest that nicotine was addictive in laboratory rats. The paper had been submitted to the journal Psychopharmacology, but had allegedly been withdrawn at the insistence of company lawyers (WSJ 1/4/94).

Conspiracy Allegations Follow Theft of B&W Documents

Brown & Williamson, the US subsidiary of BAT Industries, was accused of hiding evidence of smoking risks following the disclosure of stolen documents to the New York Times and Wall Street Journal. The documents were said to show that BAT were in possession of data as early as 1963 linking cigarettes to heart disease. BAT are said to have instructed Brown & Williamson to withhold unfavorable research from the US Surgeon General, then compiling the first ever Government report on the health hazards of smoking.

The New York Times claimed that more than 100 documents in its possession contradicted the tobacco industry's claims over the last 30 years that cigarettes have not been shown to be harmful. Among the documents, a memorandum by B&W General Counsel Addison Yeaman is said to have advised the company to "accept its responsibility" and disclose its research findings to the Surgeon General.

Reports suggest that US lawyers pursuing lawsuits against tobacco companies will be given fresh encouragement by the claimed suppression of scientific evidence. In addition, references to addiction in the documents are thought likely to embarrass the US tobacco industry which is fighting attempts to have nicotine regulated as a drug by the FDA. Richard Daynard, head of the Tobacco Products Liability Project, said: "I think this puts the industry at a very grave risk of actually paying for the harm it has done. It's particularly worrying for your local business [BAT]. The material seems to come out of their files as well out of their subsidiary's files." David Pollock, Director of ASE, claimed that the withholding of information on health risks could constitute a criminal offense in Britain. "It graphically illustrates the arrogance and criminal irresponsibility of the tobacco industry and appears to implicate BAT in Britain."

BAT's US lawyers were said to be seeking an injunction to prevent publication of the documents thought to have been stolen by Merrell Williams, an employee at a law firm retained by Brown & Williamson. Other documents are believed to have been obtained by the New York Times from a government official, disturbed by last month's testimony given by tobacco company executives before the Waxman Committee. These

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documents were received by Representative Ron Wyden who turned them over to Representative Waxman.

Congressional investigators are now calling for the disclosure of tobacco industry documents held under seal in a New Jersey case. Judge Lee Sarokan, before being removed from the case in 1992, had said the documents revealed the industry's knowledge of the effects of smoking.

Commentators speculated that the revelations would put BAT at the forefront of liability claims. Until now, the focus had been on Philip Morris and RJ Reynolds (DE, Independent, IET 9/5/94; WSJ, Independent, DT 10/5/94; WSJ 11/5/9).

Philip Morris research scientists Victor DeNoble and Paul Mele, testified before the Waxman Committee that the tobacco company halted research into addiction following the discovery of an artificial version of nicotine. The man-made chemical, 2'methylnicotine, seemed to have few of the toxic effects on the heart claimed to be associated with natural nicotine. The researchers said they left the company after their laboratory was abruptly closed on the April 1984 (Guardian IET 30/4/94).

"Safer Cigarette" Accusations

New accusations that BAT subsidiary Brown & Williamson suppressed research on a "safer cigarette" emerged following the theft of B&W documents. According to US press reports, B&W manufactured a prototype cigarette code named Ariel based on the idea of heating rather than burning tobacco, thus avoiding the creation of "hazardous substances." It is claimed that the company decided against pushing the product for fear of implications that its other products were unsafe. The Ariel cigarette may also have cut down on potential fire hazards.

It was reported that Ariel was developed in the 1960s and a patent granted in 1966. "The company initially had high hopes for the new cigarette, but in 1964, company executives in various memorandums [sic] expressed a fear of disclosing too much harmful information about smoking and of subsequent lawsuits." In addition, fears that consumers would not like the smell or taste of the Ariel cigarette seemed to be confirmed later when RJ Reynolds introduced the "safer cigarette" Premier which was rejected by the markets (IET, Yorkshire Post 14/5/94).

B&W responded to allegations that it had concealed knowledge of addictive effects of nicotine by releasing the Hippo documents from the 1960s (DT 18/5/94).

In a further US development, Joseph Califano, Secretary of Health, Education and Welfare during the Carter administration, told the Waxman Committee that, had he and federal officials known more about secret tobacco industry research into the properties of nicotine they would have moved

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to regulate cigarettes as addictive drugs. The US Surgeon General under Carter had resisted encouragement to pronounce cigarettes addictive because of lack of scientific evidence. Mr. Califano believes the decision would have been different had federal officials been "privy to research" by the industry. Congressman Waxman has asked B&W Chairman Thomas Sandefur to appear before the Committee. (IMT 19/5/94).

High Tar from Light Cigarettes

Federal Trade Commission officials claim that smokers of cigarettes labelled low in tar and nicotine may be getting higher deliveries than figures on the packets lead them to expect. Since 1971, when figures were first published on packets and in advertisements, low tar and nicotine cigarettes have taken over the developed market. They account for about 60% of the cigarettes sold in the US. However, it is claimed that measurements carried out by tobacco company laboratories under the supervision of the FTC may be misleading. According to researchers, cigarettes now include features that make machine tests meaningless.

"For example, a majority of cigarettes now have tiny, invisible holes in their filter paper, or in the cigarette paper near the filter. When the smoking machine draws on the cigarette, a large amount of air is drawn, and this dilutes the smoke getting to the measuring device, making cigarettes appear to contain less tar and nicotine. But smokers do not handle the cigarettes the same way machines do. They find a diluted smoke milder, and to make up for the 'lighter' taste, or less satisfying amount of nicotine, they puff more or draw deeper, pulling in more total smoke, so that the result for the smoker is the same amount, or more, of nicotine and tar. In addition, the tiny filtration holes are often blocked by smokers with their lips or hands, thus cutting off the air that would have diluted the smoke." There have been calls for the FDA or the National Institute on Standards and Technology to take over the administration of the tests (IMT 3/5/94).

Castano Case War Chest

In a further development to Castano, the class action launched in Louisiana at the end of March, it is reported that 50 American law firms have each contributed \$100,000 to a prosecution fund. The plaintiffs' lawyers claim that the \$5 million war chest, combined with new evidence of the industry's early knowledge of health risk, gives them a better chance of winning the action.

Some industry analysts were skeptical. According to an analyst at Merrill Lynch, "It is going to take three to four years for the case to come to trial. They have to collect their evidence. We will have to see if the payments from the 50 law firms come through. They still have to go before the court and see if they can do a class action. They are going to have to assemble these smokers from all over the world.

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They are going to have to convince the jury that cigarette smokers deserve to collect money from tobacco companies for smoking cigarettes. I don't see it as an immediate threat." (Sunday Times 22/5/94).

B&W Ads Attack New York Times

Brown & Williamson ran a full page advertisement in the Wall Street Journal criticizing the New York Times for trying to "camouflage" a correction to its front page story which claimed that B&W's own lawyers acknowledged the risk of smoking in 1963. In an editor's note, the New York Times had admitted that this story was incorrect:

"The article quoted the general council of the Brown & Williamson Tobacco Corporation, Addison Yeaman, as saying the company's research showed that cigarettes contributed to lung cancer, heart disease and emphysema. In fact, Mr Yeaman was not describing Brown & Williamson's own research but was predicting what the Surgeon General would soon say in the first major report on the hazards of smoking." The B&W ad contrasted the coverage given to the original story with the small correction (DT 28/5/94).

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Tobacco Company Was Silent on Hazards

By PHILIP J. KULTZ

Special to The New York Times

WASHINGTON, May 2 — Internal documents from a major tobacco company show that executives struggled with whether to disclose to the Surgeon General what they knew in 1963 about the hazards of cigarettes, at a time when the Surgeon General was preparing a report saying for the first time that cigarettes are a major health hazard.

The executives of the company, the Brown & Williamson Tobacco Corporation, chose to remain silent to keep their research results secret, to stay work on a safer cigarette and to pursue a legal and public relations strategy of administering holdings.

In more than 100 documents, letters and cables from the 1960's and 1970's that provide a rare look at the internal discussions among tobacco executives, the officials

Manufacturer Debated Disclosure in 1963, Documents Show

spoke of the hazards of cigarettes and stated plainly to one another that nicotine is addictive.

In one document, the company's general counsel said Brown & Williamson's research had found that cigarettes caused or predisposed people to lung cancer, contributed to heart disease and might cause emphysema. The statements contradicted the tobacco industry's contention over the last three decades that it has not been proved that cigarettes are harmful or that nicotine is addictive.

The question of addiction has taken on importance in recent months after the Food and Drug

Administration said for the first time that it would consider regulating cigarettes. To establish control over cigarettes, the F.D.A. said, it must show that nicotine is addictive and that tobacco companies intentionally deceive consumers over the amount of nicotine in cigarettes in "mantles or smokers' addiction."

Officials of Brown & Williamson, which makes Kent, Victory and other brands, refused to comment on the documents but sent a letter to The New York Times today suggesting that the documents had been "taken by a former employee of a law firm doing work for Brown & Williamson." The company said the documents should not be disclosed because some of them may be subject to attorney-client privilege and may be covered by an injunction forbidding their release. The injunction was issued by Judge Thomas J. Van of Jefferson County.

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and Court in Louisville, Ky.

Judge Wade is presiding over a case in which Brown & Williamson is suing a man named Merrill Williams, who says he stole documents from the company.

A lawyer for The New York Times Company, Adam Lipman, said he did not believe that the injunction applied to the newspaper. "Under the Supreme Court's decisions, injunctions may be directed only to specific parties to a lawsuit," he said. "Injunctions directed to the whole world are ineffective."

Some documents were obtained by The Times from a Government official who was disturbed about the testimony in the House last month by the top executives of the seven biggest American tobacco companies, in which they said that nicotine was not addictive. The official said that the documents were also given to Representative Ron Wyden, Democrat of Oregon, a smoking opponent who has been working on investigations of tobacco companies in recent weeks. Mr. Wyden said that he had found the documents to be "very disturbing" and that he had turned over the documents to Representative Henry A. Waxman, chairman of the House Energy and Commerce Subcommittee on Health and the Environment.



Adlai Stevenson, a former executive of Brown & Williamson, urged the company to "accept its responsibility" in 1963.

Mr. Waxman's subcommittee has held several hearings on the tobacco industry, including the one at which the top executives testified. Mr. Wyden asked each of the executives whether in his opinion nicotine was addictive, and each answered no.

Thomas E. Schneider Jr., the chairman and chief executive of Brown & Williamson, said in his testimony, "I believe nicotine is not addictive." In response to a request for any research the company has on nicotine and addiction, he said he would turn over documents, but added, "we do not have any animal research."

Minimalizing Research's Impact

From the documents, it is apparent that there were debates within Brown & Williamson in the 1960's and 1970's about whether to disclose what the company knew of the hazards of cigarettes, and to try to make a safer cigarette, or to try to keep silent about their own research and work to minimize the impact of the research of others.

Researchers formerly with other tobacco companies and industry experts said that the debate within Brown & Williamson was echoed within each of the other major companies, and that some of the documents and arguments within Brown & Williamson were shared with others.

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atives of other companies through the Tobacco Industry Research Committee and later the Council on Tobacco Research.

The document, Addison Yeaman, who was general counsel for the company, was a vice president, and usually director of the industry's Council on Tobacco Research, suggested in July 1943 that the company "accept its responsibility" and disclose the hazards of cigarette smoking to the Surgeon General, trusting the company to conduct research privately to develop safer cigarettes. The company officials were aware at the time that the Surgeon General's report was being prepared, the document says. The report was issued in 1944.

Mr. Yeaman's proposal was apparently turned down; later documents show that the research reports remained secret for 30 years and that work on the safer cigarette was

stopped. The documents include a series of exchanges beginning in June 1943, when executives of Brown & Williamson, a subsidiary of B.A.T. Industries P.L.C. of Britain, with offices on both sides of the Atlantic, began to discuss with some executives a "toxicology report" from Battelle Laboratories of Geneva, Battelle had been hired to do health-related research on tobacco. The report found that there were some beneficial effects of quinine. One was that it acted as a tranquilizer-like drug; another, that it acted as an appetite suppressant. But the report also showed that nicotine might be heart disease.

A Safer Filter Is Discarded

Mr. Yeaman wrote to Anthony D. McCormick, a senior executive of the "real" company in London, that they would have to decide what to disclose to the American Surgeon General. Dr. Luther Terry, who was about to issue the first report by a Surgeon General condemning cigarettes as a health hazard.

Mr. Yeaman referred to the Battelle "toxicology report" and to a new filter, created by a company scientist, R. B. Griffin, which could filter out some dangerous substances in cigarettes.

Mr. McCormick called back on July 3, 1943, that "it is too early to submit Battelle reports to Surgeon General's Committee."

Mr. Yeaman called back, "submissions Battelle or Griffin developments to Surgeon General understandable and we agree conclusions of Battelle were useful but deferred as its implications re cardiovascular disorders." He said the new research should cause a "reassessment of our policy re health."

Two weeks later, as part of the private debate about how to handle health hazards of cigarettes while keeping the company free of lawsuits by smokers, Mr. Yeaman wrote a 2,000-word analysis to be called

whether the company should acknowledge the hazards of cigarettes and accept the rules of litigation, or say nothing but give to the ability to talk about its research to public and give no credible standing to analyze and criticize the Surgeon General's report.

Mr. Yeaman said in the report, labeled "strictly private and confidential" and dated July 17, 1943, that the new information about the tranquilizing effects of nicotine and its positive effects on weight loss "directors to the industry what they will be the first effective instrument of propaganda counter to that of the American Cancer Society, et al, claiming cigarettes as having a causal relationship to cancer in the lung."

He said the positive nicotine findings and the Griffin filter were "a bridge over which the industry could pass from its present position of defiance to a field for effective counter-attack." The Griffin filter could effectively take hazardous substances out of cigarette smoke but leave the good taste and the nicotine. This device would provide the opening politically, and the positive use of nicotine would be their "weapon."

He noted that company research had shown that nicotine has a tranquilizing, or anxiety-reducing, effect and helps control body weight, and that "moreover, nicotine is addictive."

"We are, then, in the business of selling nicotine, an addictive drug effective in the release of stress and tension," he wrote.

The research found that despite the beneficial effects of nicotine, cigarettes "cause or precipitate lung cancer."

"They contribute to certain cardiovascular disorders," the research found. "They may well be truly causative in emphysema, etc. etc."

Bracing for Report By Surgeon General

The memo said that the Surgeon General would soon issue a major report that would conclude that cigarettes cause lung cancer and cardiovascular disease.

The industry, he said, should take the crisis seriously. Whatever would the companies tend to minimize the impact of the Surgeon General's report, he wrote, the industry must face the fact that a "respectable and qualified group of previously non-committed medical authorities have spoken."

Mr. Yeaman said the company should not continue to say that the hazards were not proved and should not continue in a defensive posture. Rather, he said, the industry should embark on a "massive and impressively financed" campaign of research that would either disprove the hazard or, far more likely, he said, "discover just which chemicals are the cancer-causing ones so the consumers could 'neutralize' them."

He discussed the possibility that the work could be conducted by the Tobacco Institute Research Committee, which the industry, in full-page newspaper advertisements in January 1944, said would do such research. Mr. Yeaman acknowledged to his colleagues that the research would "be perceived as a public relations ploy and (however unadmitted the Scientific Advisory Board and its critics may be) it has functioned as a public relations operation."

He envisioned a large research program that would be "largely financed, administered, self-perpetuating and uncontrolled" by the industry and that would ask for the help of the American Cancer Society and other major organizations concerned with public health.

The bold move in which the industry would "accept its responsibility" would actually free the company to take a "much more aggressive position to meet attack," Mr. Yeaman acknowledged that it might worsen the industry's position in litigation, but that risk would be worth it because of the greater benefit of being on the attack.

He noted that this advice was very different from what he had offered up to that time, but that it was not really inconsistent. If the industry did not want to take the responsibility for health research, he said, it should remain largely silent.

Mr. Yeaman said that while the industry contemplated this long-term strategy, it would have to deal with the Surgeon General and consulting groups and members of Congress when the Surgeon General's report was issued.

Weighing Openness And Liabilities

Mr. Yeaman accurately predicted that there would be a wave of lawsuits to educate the public about smoking hazards, particularly the young, but there would be no effort to ban smoking set on television and radio, that health warnings of the hazards of smoking would be put on cigarette packs, and that cigarette taxes would rise quickly.

The difficulty of being open with the Government was that justice might realize that the companies knew of the hazards, had the means to make a safer cigarette but did not do so. The justice, he said, might have an "emotional reaction" and go against the companies.

He proposed, finally, that the industry should challenge whatever parts of the Surgeon General's report they could, announce the creation of a new tobacco research institute and announce "an triple, or quadruple or quintuple filter, capable of removing whatever constituents of smoke is currently suspect, while delivering full

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... "AND IF WE LIVE THE LIFE OF ...
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... said, "what price Kent?"

Mr. Yearman, reached at his home
in Louisville, said he would not dis-
count his observations over the ...
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In the years since Mr. Yearman's
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have created cigarettes that are
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...-... which are
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... of cigarettes. None are
... on the market.

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Way to Make Safer Cigarette Was Found in 60's but Idea Was Shelved

By PHILIP J. MILTS

WASHINGTON, May 12 — Tobacco companies not only knew of the hazards of smoking by the early 1960's but had already discovered and patented a critical step for making a safer cigarette.

The idea was to heat the tobacco rather than burn it, thus avoiding the tar and nicotine that creates most of the hazardous substances in tobacco smoke. The Brown & Williamson Tobacco Corporation, a subsidiary of the London-based British-American Tobacco Co. Ltd. put the idea to the test in a cigarette, code-named Anel, according to internal company documents obtained by The New York Times. The prototype was granted a patent in 1964 but was never marketed.

The company decided against marketing the safer products toward the market for fear that they would make their other products look bad, according to company documents and interviews with scientists working on the project. Another likely reason, the documents suggested, was that smokers might find the cigarettes less satisfying and therefore would not buy them.

Thomas Fitzgerald, a spokesman for Brown & Williamson, said: "From the description given to us, it appears you are taking your article on attorney-client privileged documents that were stolen by a former employee of a law firm that worked for Brown & Williamson. Anybody who knowingly uses stolen information is in fact contributing to an illegal act. We have no further comment."

Another Safe Cigarette

Another early safe cigarette invention was made by Dr. Thomas Meid, assistant director of research for Liggett & Myers, and his colleagues. Dr. Meid said in a telephone interview this week that his group had created a safer cigarette in research that began in 1955, and that the product was ready for market by 1972.

Dr. Meid, now retired, said he was told one day in 1979 that there had been a vote of executives in the company, on the advice of lawyers, that the company should not produce a safer cigarette.

"We wrote up the work we had done in a paper for publication, but we were not allowed to publish it," he said. "It describes what we did, how we did it and what the results were."

At Philip Morris, one project mentioned in memorandums and reports dating from the early 1960's was "Research on a new type of cigarette." The project was directed in London by a doctor who was Rose Gifford.

Some who died from lung cancer before her case was completed. She later became the first person to be awarded damages in a smoking liability case in this country.

Reducing Cancer Risk

According to the Brown & Williamson documents, the Anel cigarette would have cut down greatly on the cancer-causing substances in cigarette smoke and cut down the amount of secondhand smoke coming from the cigarette. It would have also reduced its potential fire hazard, as later versions of similar products proved.

The decision at tobacco companies not to proceed with less hazardous cigarettes was complex and much-debated internally, experts familiar with the industry say. Some of the reasons include the fear of litigation and the implication that the companies' other products were hazardous.

In addition, the companies feared marketing problems, that is, the cigarettes would not smell or taste like what smokers were used to, and smokers might not be willing to buy a safer but less satisfying product. These fears later turned out to be justified when R. J. Reynolds introduced its version of the safer cigarette, Premier, which lasted only a short time on the market.

Anel was developed in the 1960's, and after the early success of the prototype, the company applied in 1964 for a patent, which was granted in 1968.

The company initially had high hopes for the new cigarette, but in 1964, company executives in various memorandums expressed a fear of disclosing too much harmful information about smoking and of subsequent lawsuits. The research already completed on both the hazards of cigarettes and solutions was shelved, and the laboratories of the parent company in England, where much of the research on cigarettes was done, were closed down.

Adrian Yerman, general counsel for Brown & Williamson in the 1960's and later chief of the Council on Tobacco Research, advised company officials to be more open about what they knew about the hazards of cigarettes, company documents show, and encouraged them to try to solve the problem of hazards with a less hazardous cigarette rather than with public relations alone.

In a "strictly confidential" report to tobacco executives, Dr. A. B. Griffith, the chief research for Brown & Williamson, discussed research being done at the Tobacco Research Council laboratory in Haringgate, which showed the hazards of cigarettes as well as ways to make less hazardous cigarettes.

Mr. Griffith warned the executives that the sponsoring tobacco companies "may be losing control of the operation of this facility."

"Most people will whom I talked expressed deep concern over the possible impact of the reports to come from Haringgate," he said. "Their support seems to be to find ways of obtaining maximum nicotine for minimum tar." He said the work could prompt government regulation in England and have "significant impact on the American tobacco industry."

Soon afterward, research on the hazards of cigarettes and the alternative was halted at the Haringgate laboratory, memorandums show.

By Dec. 3, 1968, Dr. A. A. Sanford, a research director of Brown & Williamson wrote to the research directors of the parent company, B.A.T. in London, that there were safer-appearing products that could be made, and products that were actually safer: "There are two types of health products possible and they should be distinguished: (a) Health Image (Health Insurance cigarette) such as a low tar-low nicotine cigarette which the public accepts as a healthier cigarette, and (b) Health-oriented cigarette, which has minimal biological activity; for example, one which would yield a sea-term reading in a mouse skin-painting test."

The company did eventually market a low tar and nicotine brand, among them Merit but none of them were as safe as the Anel cigarette. That project was never revived.

Dr. Giv Corn, a scientist who has worked for tobacco companies and for the Federal Government in a search for less hazardous cigarettes over the past three decades, said in an interview that less hazardous cigarettes could have been created and put on the market by now.

But he said the blame lay not just with the tobacco companies. If companies had not been constrained by worries over litigation, he said: "They may have solved the problem of a less hazardous cigarette some years ago. Because of the health and litigation, making a less hazardous cigarette would imply that the company's other products were not good."

"And it is my contention that that is the situation was less hostile between the smoking public and the tobacco industry, we probably would have some much improved cigarettes on the market now," he said. Reform is a program to make a less hazardous cigarette at the National Center

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Institute, which was halted in the late 1970's, he said if it "had been allowed to continue, in 3 to 10 years, we would have solved the problem" of designing a much less hazardous cigarette.

Dr. Dietrich Hoffmann, associate director of the American Health Foundation in New York, a research institute that studies tobacco and health issues, has followed the activities of both industry and the Government since 1954. He also said that smokers had to share the blame. "Finally, you can blame the producers of the cigarettes for not making a less hazardous cigarette when they might have," he said. "But somewhere along the way our government has slipped away."

The most complete version of a less hazardous cigarette was the Premier brand, briefly marketed by R. J. Reynolds Tobacco Company in 1984. It used the Ames idea of heating but not burning cigarettes. Premier was soon withdrawn, and company officials have said that it was put on the market prematurely, when it had an unusual odor and taste that some smokers objected to.

Over the years, anti-smoking groups have fought against the marketing of Premier and other less hazardous cigarettes on the ground that the addiction and some substantial health hazards would continue, even if substantial reductions of disease and death might be gained.

By 1978, several companies had done substantial research in less hazardous cigarettes but the work had been shelved for fear of the effect it would be to invite lawsuits. The companies wanted to wait until they were forced by the Government to market less hazardous cigarettes, as a Philip Morris executive noted in a 1978 memorandum, which was made public during the Cioffi case trial.

Dr. Helmut Wakeman, scientific director of Philip Morris at the time, wrote of the "intensifying pressure to develop a 'safe' cigarette."

"We are working to be in a position to design a cigarette which will meet 'less hazardous' specifications if they are ever imposed on us and at the same time make a product which is attractive to the smoker," he went on. "I am pleased to report that we already have a number of such prototypes on our shelves with more to come in the future."

He said the safer cigarettes were "insurance against surprises that may undermine the pre-eminence of our business."

Dr. Richard A. Daynard, a professor of law at Northeastern University and the chairman of the Tobacco Products Liability Project, an advocacy group that encourages liability suits against tobacco companies, said that less hazardous cigarettes should be marketed, but only under Government regulation.

"The big argument against letting the companies market them without regulation," he said, "is that over the past 40 years the companies have already been pretending to sell safer cigarettes — first with filters, then the low-tar and nicotine brands, and neither of them is a significant improvement in the safety of cigarettes."

House Subcommittee Backs Cigarette Ban

By DAVID E. ROSENBAUM

WASHINGTON, May 12 — A subcommittee in the House of Representatives approved legislation today that would ban smoking in most parts of most buildings open to the public.

This is the most extensive anti-smoking legislation ever to clear a Congressional panel, but it is unlikely to go further in Congress this year. It was adopted by the Energy and Commerce Committee's Subcommittee on Health and the Environment.

Under the measure, smoking in buildings that 10 or more people enter regularly would be permitted only in rooms with their own separate exhaust systems. The only exceptions would be private homes, private clubs, tobacco shops, bars, restaurants and prisons.

Hurdles Facing Proposal

Representative Henry A. Waxman, the California Democrat who heads the panel, called the legislation "a vitally important public health measure" and said, "There is no other legislation before Congress that could do so much good at so little cost."

Mr. Waxman, who has campaigned against smoking for years, said his panel was an especially hard nut to crack because the tobacco industry had succeeded in arranging for many of its supporters to become members.

The bill would probably be passed if it got to the floor of the House, but first it must clear the full Energy and Commerce Committee.

The committee has a backlog of major legislation, including President Clinton's health care proposal, renewal of the Superfund program to clean up toxic waste, an overhaul of telecommunications policy and revision of product liability statutes.

The committee's leading opponent of the smoking ban, Representative Thomas J. Bliley Jr., a Republican from Virginia, said he did not expect the bill to be taken up this year. Other senior members of the committee agreed with that assessment.

Mr. Waxman acknowledged that he had no commitment from the committee's chairman, John D. Dingell, Democrat of Michigan, that the measure would be considered this year. A vote in the sub-

committee on the legislation was delayed twice this spring because Mr. Waxman did not have the votes for approval. It was approved today, 14 to 11, after Mr. Waxman agreed to the exemption for restaurants.

Mr. Waxman said later that he still did not think all restaurants should be exempt and that he hoped to modify the bill at some point so that some restaurants would be included.

Separate Smoking Rooms

The legislation would permit the owners of buildings open to the public to provide separate smoking rooms with their own exhaust fans. But staff assistants who worked on the bill said they expected that if it became law, most building owners would simply prohibit smoking altogether.

At a Congressional hearing on Wednesday, a similar bill sponsored by Senator Frank R. Lautenberg, Democrat of New Jersey, won support from Surgeon General Joycelyn Elders and from Carol M. Browner, the Administrator of the Environmental Protection Agency.

The Lautenberg bill stands little chance of winning committee approval this year.

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TOBACCO ON TRIAL

Part of a continuing series.

'Safer' cigarette was sought in 1960s

By GREG OTOLSKI
Business Writer

In the 1960s, researchers at Louisville-based Brown & Williamson Tobacco Corp. and its British parent company were so eager to find a safe cigarette that they considered replacing the tobacco in cigarettes with a substance that would deliver smoking's pleasures without its risks.

They also developed new cigarette designs and filters that would reduce health risks.

They did it all amid holding private research conferences at which they discussed the dangers they knew smoking presented, according to Brown & Williamson documents obtained by The Courier-Journal.

But the safer cigarettes — including one known as Ariel that only heated tobacco instead of burning it — never made their way to market.

And now, what Brown & Williamson and other cigarette companies knew about the harmful effects of smoking, when they knew it and what they did to make cigarettes safer is the focus of congressional hearings that could lead to strict government regulation of the cigarette industry.

Cigarette companies have maintained for 40 years that there is no definitive evidence that smoking

See SAFER
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Safer cigarette was sought

Continued from Page One

causes cancer or other diseases. They have said they never had research that showed otherwise. And they generally have rebuffed studies that tied smoking to disease.

However, documents from a Brown & Williamson research conference held Sept. 24-30, 1962, show that researchers were concerned about the results of their work studying the harmful compounds found in cigarette smoke. Notes from the meeting, held at Hilton Head Island, S.C., also reveal an urgency to do more research and to produce a safer cigarette.

A company report on the meeting refers to biological tests researchers were conducting on mice to determine the cancer-causing effects of cigarette smoke. The report also suggests that the researchers were making progress at eliminating the harmful compounds in cigarette smoke.

The Hilton Head meeting was attended by 12 company researchers and executives, including Robert Griffin, research director for Brown & Williamson, and Sir Charles Ellis, head of research for B.A.T. — Brown & Williamson's London-based parent company.

One method used by researchers to test for cancer-causing effects of cigarette smoke was to reduce the smoke into a solid form that could be painted on the backs of mice. Researchers then looked for any effects, which they referred to as "biological activity."

Similar research first done in the early 1950s by doctors at Memorial Sloan-Kettering Cancer Center in New York, had shown that the contents of cigarette smoke would cause mice to develop malignant tumors.

"The clear possibility of producing cigarettes with reduced mouse-skin biological activity therefore becomes of greater importance, and a research solution to the whole problem is more likely," the report from the conference said.

The report revealed that research-

ers already knew a wide range of factors — including the type of tobacco and additives used in cigarettes and how deeply the smoker inhaled — altered the amount of biological activity.

"These factors will be increasingly important when future cigarettes are designed," the report said.

The documents show that researchers were experimenting with ways to reduce the biological activity of smoke by removing harmful compounds and by changing the physical design of the cigarette.

One note said that "a number of new developments" had been made in changing the cigarette design to alter the volume of smoke that could be inhaled. The note said the developments should be tested for "short-term biological" effects.

The researchers also noted at the Hilton Head meeting that there was growing interest in research into non-cancer diseases linked to cigarette smoking, such as emphysema, bronchitis and cardiovascular diseases. Other research being conducted focused on nicotine and carbon monoxide content in cigarette smoke.

Brown & Williamson had been working on a safe cigarette, called Ariel, since the early 1960s. Ariel, which would only heat the tobacco, would still be able to deliver the nicotine that smokers craved but would eliminate the harmful smoke. The company applied for a patent on the Ariel cigarette in 1964; it was granted in 1966.

Ariel was never marketed. (The New York Times reported in today's editions that it was dropped because the cigarette had "a tremendous kick" that gave smokers more of a jolt than they could comfortably tolerate.)

But the cigarette was still being discussed by company researchers at the 1962 Hilton Head meeting in terms of delivering nicotine to smokers. The document shows that the company had already conducted research on how nicotine stimulated the brain.

During the late 1960s, research results also began to emerge on finding substitutes for tobacco. By the 1974 annual research conference, which was held Jan. 12-16 at Duck Key, Fla., several tobacco sub-

stitutes were being studied.

The Duck Key conference was attended by B.A.T. researchers from the United States, England, Germany, Canada and Australia. Brown & Williamson participants included executive L.W. Hughes and research director Robert Sanford.

Notes from the meeting show the researchers and executives believed that they might be able to change the medical community's general opinion that cigarette smoking was harmful by making cigarettes with non-tobacco substances. They also thought there might be economic advantages to not using tobacco.

Company notes from the Duck Key conference said that as of 1974, at least 10 non-tobacco substances had been developed by Brown & Williamson and other tobacco companies. The substances were being tested to see whether they caused harmful health effects.

Notes from the conference also reveal that Brown & Williamson and B.A.T. were continuing research into the cancer-causing effects of cigarette smoke. Researchers said they had discovered that "the addition of caffeine to cigarettes is now known" to reduce tumors caused by cigarette smoke in its solid form.

German researchers who attended the conference said they had developed a test that apparently could significantly reduce the amount of time needed to determine whether cigarette smoke produced tumors in mice. Company executives often complained that it could take as long as two years to do biological tests on animals before any significant results were obtained.

The notes do not give details about the German test and B.A.T. apparently decided not to share its breakthrough with other cigarette companies.

"We propose not to make this test available to competitors at this time since it might be of considerable commercial advantage," the Duck Key notes said.

Brown & Williamson was told which documents were being used as a basis for this story and was given the opportunity to comment. Spokesman Tom Fitzgerald said, "We'll call you if we have any comment." None had been received at press time.

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Tobacco Firm Sought to Cull Studies as 'Deadwood'

■ **Litigation:** Lawyer wrote memo as company resisted efforts in wrongful death suits to disclose research.

By MYRON LEVIN
Times Staff Writer

It was an interesting time to be cleaning house.

The year was 1985, and tobacco companies, facing a surge in wrongful death claims, were being pressed to disclose internal documents on their knowledge of the risks of smoking.

Even as they fought the discovery requests, lawyers at Brown & Williamson Tobacco Corp., the third biggest U.S. cigarette maker, sought to clear what they called "deadwood" from company files.

In a memo that used the term seven times, B&W corporate counsel J. Kendrick Wells said he had advised Earl Kohnhorst, B&W's

vice president for research, development and engineering, on the need to prune scientific reports from his files.

Wells said he had marked certain reports "with an X" to designate those that "were deadwood in the behavioral and biological studies area."

Those papers, he wrote, should be segregated, boxed and put in the basement for possible shipment to B&W's parent firm, BAT Industries, in England. But no one "should make any notes, memos or lists" of the documents. Wells said in the Jan. 17, 1985, memo, recently leaked to several news organizations and Congress.

Whether B&W sent scientific
Please see MEMO, A6

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MEMO: Tobacco Firm's Files Marked as 'Deadwood'

Continued from A1
reports from its Louisville, Ky., headquarters in England is unknown. Company officials have refused to say if they took Wells' advice. What is known is that the industry's legal efforts—including those pertaining to disclosing internal documents—were a huge success.

The cigarette makers repudiated about 150 lawsuits in the 1980s, preserving their record of never paying a nickel in settlements or judgments to people seeking damages for smoking-related illness.

Realizing that a few losses could bring an avalanche of claims, the companies assigned platoons of lawyers to fight each suit, sparing no expense to overwhelm their opponents. By resisting every motion and appealing every ruling that could be appealed, they exploited the cash-flow problems of plaintiff lawyers, who worked for contingency fees.

Only a handful of cases made it to trial. Some were dismissed by judges, but many plaintiffs—crushed by the industry's harassment—simply gave up.

"To paraphrase General Patton, the way we won these cases was not by spending all of Reynolds' money, but by making that other son of a bitch spend his," crowed a memo by an RJ Reynolds lawyer.

Like the other cigarette makers, Brown & Williamson stubbornly fought requests for internal memos and reports on smoking and health. But here the company was more successful than its rivals.

Philip Morris, Lorillard, and Liggett Group, for example, were compelled by court orders to surrender reams of internal records in the Cipollone wrongful death case in New Jersey. Disclosure of the documents during the 1984 trial triggered a flood of bad publicity and a \$400,000 damage award against Liggett that was reversed on appeal. Brown and Williamson, on the other hand, apparently was not forced in any of its lawsuits to disclose similar sensitive documents.

However, some legal experts say the "deadwood" memo puts the firm's resistance in a new light. If B&W sought to conceal evidence in the midst of relevant litigation or knowing court battles were under way, experts say the firm may have violated state criminal laws and standards of legal ethics.

For example, in both Texas and New Jersey, where B&W faced injury claims, it was a crime to destroy, conceal or remove any "record, document . . . or thing" to impair its availability in an "official proceeding"—including a civil court case.

The model rules of conduct of the American Bar Assn. held it improper to counsel clients to unlawfully destroy or hide "a document or other material having potential evidentiary value." Kentucky State Bar rules stated that a lawyer should "not suppress any evidence that he or his client has a legal obligation to reveal or produce."

Businesses aren't required to save paperwork forever. Some balance legal and housekeeping requirements with formal record retention policies that dictate how long to keep records. It is common practice to make opponents work hard in lawsuits to get information.

But experts in legal ethics and procedure say it is improper at best to purge documents based on their potential value to legal adversaries. Some of these experts said the deadwood memo raises suspicions that that is what B&W was up to. Among other things, they questioned why Wells' memo said to keep no lists of the "deadwood" documents—and how a lawyer could know better than B&W's vice president for research what was scientific deadwood.

Some legal experts also questioned why true deadwood would be parked offshore and not merely trucked to a landfill.

"Deadwood" sounds like a euphemism," said Geoffrey Hazard, a law professor at the University of Pennsylvania and expert in civil procedure.

"It is unethical to destroy evidence to keep it from an opponent who has a right to it," said Richard Lempert, a professor of law and sociology at the University of Michigan. "I find it ridiculous that they were going to keep the documents in storage but wanted no notes, memos or lists which might reveal to others the documents were there."

If the documents "genuinely were deadwood . . . there would be no reason not to destroy them," added Stephen Suncy, a professor of legal ethics at the UC Berkeley.

Conspicuous in the memo was a statement that "Janus" studies be among those treated as deadwood.

"Janus"—the two-faced Roman god depicted as facing both future and past—was the name for a secret program of biological research conducted in Germany for B&W's parent, B.A.T., from 1963-78.

The "Janus" research included numerous animal experiments on the effects of smoking. Among other things, they confirmed that mice painted with tar from tobacco smoke developed tumors. Other Janus studies compared the toxic-

ity of smoke from different cigarettes and types of tobacco. Thus, the "Janus" papers would be of great interest to plaintiffs probing what the industry knew and when.

"Normally, studies are not 'deadwood' at all," said William Townsley, a Texas lawyer who filed several unsuccessful claims against B&W and other tobacco companies. "Deadwood" would be something that no longer had any usefulness," he said. "You don't go around destroying research data."

The deadwood memo is among thousands of pages of B&W documents leaked in May to anti-smoking members of Congress and several news organizations, including The Times. B&W officials say the documents were stolen by a former paralegal for a Louisville law firm that represents the company. The paralegal was under a court injunction not to disclose the documents.

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John Wells, the B&W's assistant general counsel for product litigation and litigation, now executive vice president and chief operating officer, declined comment when reached by telephone.

Said company spokesman Tom Fitzgerald, "We cannot discuss this or other stolen documents because they are covered by attorney-client privilege."

Court records indicate that 50 liability claims were filed against B&W during the 1980s. The Times contacted the lawyers who filed 49 of these claims. Lawyers in the other state could not be reached in the 49 cases, no significant discrepancy was obtained from B&W before the cases were dismissed or abandoned, according to interviews and court records.

Typical of their efforts was the case in Washington state of lung cancer victim Jimmy Newell, a scissor worker who sued asbestos manufacturers, B&W and a second cigarette maker whose brand he had smoked.

When Newell's lawyers filed interrogatories concerning B&W's involvement in research on the health consequences of smoking, B&W responded that it objected to questions that use phrases such as "the health consequences of cigarette smoking." . . . Such phrases are vague, ambiguous and unintelligible in that B&W cannot reasonably ascertain their meaning," the company said.

When Newell asked if B&W had destroyed any documents on smoking and health, B&W objected that the question was "overly broad and argumentative."

Given B&W's long-held position that smoking is neither addictive nor a proven risk to health, it is clear why the company would not have wanted to disclose the internal papers that recently came to light.

Among them are memos and reports dating to the 1960s in which top officials of B&W and BAT, then known as British-American Tobacco, declared that nicotine was addictive.

For example, in a July, 1962, memo, B&W general counsel Addison Yeaman said the company was "in the business of selling nicotine, an addictive drug effective in the release of stress mechanisms."

In the memo, written several months before the U.S. Surgeon General's landmark 1964 report linking smoking and lung cancer, Yeaman also predicted the industry would be unable to disprove the cancer connection.

"At the time," he wrote, "the prevailing view was that some combination of constituents of smoke will be found conducive to the onset of cancer or to create an environment in which cancer is more likely to occur."

"Holy . . ." said an outraged plaintiff's lawyer whose lawsuits against B&W were abandoned after seeing the Yeaman memo for the first time last month.

"That is completely and 100% contra the party line that they've been taking that nicotine is not addictive, that anybody can quit smoking who wants to," said the lawyer, who would not speak if identified because of concern about B&W's assertion that the leaked documents were stolen. "There's smoke coming out of these documents," he said. "I've never seen any of this stuff before, and had I seen it I would have used it."

Another leaked document—minutes from a 1962 research conference in England attended by scientists from B&W—quoted British-American research director James Green's suggestion that "we should adopt the attitude that the causal link between smoking and lung cancer was proven, because then at least we could not be any worse off."

According to the minutes, Anthony D. McCormick, a member of British-American's board of directors, remarked at the meeting that acknowledging the risks of smoking would be irresponsible.

"You had not only your own business to consider but the employees throughout the industry, retailers, consumers, farmers growing the leaf, and so on, and you were in much too responsible a position to get up and say: 'I accept that the product which we and all our competitors are putting on the market gives you lung cancer,' whatever you might think privately," McCormick was quoted as saying.

According to letters and memos, B&W lawyers were particularly worried about legal fallout from statements and writings by BAT scientists who were engaged in sensitive research and tended toward blunt statements on smoking and health. Like an adolescent mortified by clumsy parents, B&W was ever fretful its British corporate parent would cause legal embarrassment.

A 1970 letter from B&W's outside lawyers to the firm's general counsel was almost passionate about the threat. In the letter, David R. Hardy of Shook, Hardy & Bacon, which represented B&W and other tobacco firms, warned that ill-advised statements attributed to B&W's parent might be used against B&W in court.

As an example, he cited minutes of British-American's research conference in Germany in 1963 that cited "the possibility of distinct adverse health responses to smoke aerosol" as "lung cancer (b) Emphysema and bronchitis."

"Of course," Hardy wrote, "we would make every effort to explain such statements if we were confronted with them during a trial, but I seriously doubt that the average juror would follow or accept the subtle distinctions and explanations that we would be forced to urge."

It is one thing when "known enemies" claim smoking is dangerous, continued Hardy, who died in 1976. "Our problem becomes entirely different and far more serious when agents and employees of the defendant cigarette company or its parent become the spokesmen against us," he wrote. "In our opinion . . . documentary evidence from the files of either BAT or B&W which seems to acknowledge or tacitly admit that cigarettes cause cancer or other disease would likely be fatal to the defense . . . in a smoking and health case."

These fears intensified as BAT continued its program of biological research. According to memos, B&W would be unable to distance itself from the research because it was helping to pay for it.

In two 1978 memos, corporate counsel Wells said B&W should route incoming research reports through the company's law department. That way, he wrote, the company could claim the reports were produced for litigation purposes. (Under the doctrine of "attorney work-product," documents produced for use by a company's lawyers usually can be withheld from adversaries.)

However, B&W remained fearful of being tied to the research in Europe. "The problem posed by BAT scientists and frequently used consultants who believe cause [that smoking causes disease] is proven is difficult," Wells wrote in a memo in 1984.

Wells later sought other safeguards against the buildup of sensitive documents. In a February, 1986, memo, he said he had asked B&W scientists and engineers to stop requesting status reports on all but the most vital research.

From now on, the memo said, "B&W will receive concise reports, estimated to be about one-half page in length, twice each year for each project; it wishes to follow. While the brevity of the reports will reduce the potential for receipt by B&W of information useful to a plaintiff, disadvantageous information could be included and the reports could serve as road maps for a plaintiff's lawyer."

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These precautions reflected the enormous financial stake of the cigarette litigation.

Should the lawsuits produce large damage awards, pressure will develop in the Congress for superfund legislation applicable to smoking and health lawsuits. Wells warned in a 1983 memo "Such a fund would be financed by contributions from cigarette manufacturers amounting to a large percentage of profits."

Nothing of the sort has happened. But the tobacco companies find themselves under renewed legal pressure, and the B&W documents are not helping their cause.

The 'Deadwood' Memo

Early in 1985 J. Kenneth Wells, a top lawyer for Brown & Williamson Tobacco Corp., wrote a memo outlining his directive to clear "deadwood" from the files of the cigarette company's research and development department. Wells wrote that he advised Earl Kohnstamm, the department's director, to box the documents—including some describing a project called "Janus," which confirmed that tobacco smoke causes tumors in animals—for possible shipment overseas. B&W workers were not to make any note of the contents.

FILE NOTE

FROM: J. K. Wells

DATE: January 17, 1985

RE: Document Retention

abstracts. I explained I had marked certain of the document references with an X. The X designated documents which I suggested were deadwood in the behavioral and biological studies area. I said that the "B" series are "Janus" series studies and should also be considered as deadwood.

I suggested that Earl have the documents indicated on my list pulled, put into boxes and stored in the large basement storage area. I said that we would consider shipping the documents to BAT when we had completed segregating them. I suggested that Earl tell his people that this was part of an effort to remove deadwood from the files and that neither he nor anyone else in the department should make any notes, memos or lists.

ONE STATE'S LAW

Several states in which smoking-related lawsuits were filed against Brown & Williamson have laws that prohibit the concealment of evidence in court proceedings. New Jersey's law is typical:

"A person commits a crime of the fourth degree if, believing that an official proceeding or investigation is pending or about to be instituted, he ... alters, destroys, conceals or removes any article, object, record, document or other thing of physical substance with purpose to impair its verity or availability in such proceeding or investigation."

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FDA Panel Says Nicotine Is Addictive

By Jean Schwartz
Washington Post Staff Writer

An advisory panel of the Food and Drug Administration yesterday rejected tobacco industry contentions that its products are not addictive, voting unanimously that "the amount of nicotine delivered by currently marketed cigarettes [is] likely to lead to addiction in the typical smoker."

The finding does not commit the agency to a course of action, but it allows the FDA to go forward in considering whether to regulate tobacco products, just as it regulates all drugs ranging from cocaine to over-the-counter antihistamines. The FDA has said that it could regulate tobacco products if it determined that they are sold as drugs—or, in the language of the laws governing the agency, to "affect a structure or function of the body."

FDA Commissioner David A. Kessler called the panel's decision about addictiveness "enormously important, because it changes the way you have to look at the whole issue." The industry has long contended that smokers choose their habit freely, but addictiveness would eliminate that choice, Kessler said.

Tobacco industry repre-
See FDA, A4, Col. 1

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FDA Panel Says Cigarette Nicotine Can Be Addictive

FDA Panel AI

sensitives, sitting grumpy at the back of the meeting as the committee members voted, denounced the finding. "You can't determine, by their definition, the difference between caffeine and crack cocaine," said Maura Ellis, a spokeswoman for R.J. Reynolds Tobacco. "That's a ludicrous definition."

The eight-member panel was convened to evaluate evidence on nicotine's addictive potential and to vote on seven questions concerning dependence and thresholds of addiction. They spent the day at the Silver Spring Holiday Inn bearing radically conflicting testimony.

One group of speakers portrayed nicotine as a highly addictive drug that exposes smokers to numerous health risks. Another group, speaking during time allotted to the tobacco industry, vehemently denied that nicotine is addictive.

The panel also was asked to consider whether there is an apparent threshold of nicotine addiction—a level below which persons could smoke but not become hooked. Finding that level would make it possible to mandate nonaddictive cigarettes, ensuring that people experimenting with tobacco products would not become addicted, researchers said.

Kessler, who sat in on the entire nine-hour meeting yesterday, said, "The more I read and the more I look at this, the more I realize our goal ought to be to prevent the next generation from becoming addicted."

Neal Benowitz of the University of California at San Francisco told the panel that it takes from two to three years for smokers to move from trying their first cigarette to daily smoking.

Benowitz said that research conducted with

Jack E. Henningfield of the National Institute on Drug Abuse suggested that the nicotine levels in cigarettes could be reduced to nonaddictive levels. Benowitz said that the 10 to 15 percent of smokers who smoke five cigarettes a day or fewer do not appear to be addicted. They take in about 5 milligrams (mg) of nicotine a day, Benowitz said, and he estimated that "maybe 5 mg a day is a level below which addiction is not maintained."

Thus, cigarettes that contain 0.6 milligrams of nicotine and deliver 0.25 mg of nicotine to the smoker would fall below the addictiveness threshold for a person who consumed 20 cigarettes a day, Benowitz said.

No cigarette on the market offers such low nicotine levels, and nicotine-free cigarettes so far have failed in the market. Panelist Lynn Kozlowski, a researcher from Pennsylvania State University, said, "I'm kind of skeptical that there would be any smoking at all of a cigarette that doesn't have a buzz attached to it."

Benowitz said that to protect current smokers from the pains of cold-turkey withdrawal—and to head off the prospect of a black market in high-nicotine cigarettes—any plan to reduce nicotine levels should be phased in gradually over a period of at least 10 years.

R.J. Reynolds scientist John Robinson charged that the FDA is planning to embark on "a huge social experiment with what would amount to nicotine prohibition—with 45 million American smokers as the test subjects."

Members of the advisory panel questioned Benowitz's thesis, however. Panelist Alice M. Young of Wayne State University suggested that gradual diminution of nicotine in cigarettes could result in current smokers increasing their intake to compensate.

Others pointed out that the low-nicotine route

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Cont'd from p.

could not be tested scientifically by any means short of regulation.

A study to determine whether young people become addicted to low-nicotine cigarettes would be impossible to conduct, Benowitz said, because "you can't give kids cigarettes and wait until they become addicted in the laboratory."

David Sachs of the Palo Alto (Calif.) Center for Pulmonary Disease Prevention offered supporting evidence that 5 mg per day was a reasonable addiction threshold. Analysis of the experiences of users of nicotine patches indicated that 5 mg a day does maintain physiological dependence, he said.

At the end of the day, a majority of the panel voted that some threshold existed, but that there was insufficient evidence to determine the exact amount of nicotine that causes dependence.

The pro- and anti-tobacco camps came into sharp conflict repeatedly throughout the day.

Robinson, speaking for the tobacco industry, said that nicotine is not addictive "by any meaningful definition of the word," because, according to him, addiction requires intoxication. "To conclude otherwise actually endangers our credibility as scientists," Robinson said.

Similarly, psychologist Dominick Ciraulo of Tufts University School of Medicine contended that because nicotine does not produce intoxication and euphoria as opiates do, it could hardly be considered in the same category.

But John Grabowski, an addiction specialist at the University of Texas Health Sciences Center, said in an interview that references to intoxication were misleading because there are substances, such as methadone, that are addictive yet produce no kick. Grabowski said that tobacco industry speakers were "misrepresenting the field" with "straw man" arguments.

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A Life of Hiding for a Tobacco Critic Bound to Silence

By PHILIP J. HILTS

Special to The New York Times

WASHINGTON, Aug. 5 — In the last few months, as thousands of pages of documents from the Brown & Williamson Tobacco Corporation have surfaced in Congress and in news reports, one man's name has repeatedly been cited as the source.

But not a word has been heard from that man, Merrell Williams, a 53-year-old former paralegal. A Louisville, Ky., court has enjoined him from discussing the documents with anyone, including his own lawyers. So he is silent, even though he has been publicly accused by Brown & Williamson of stealing its papers.

In several interviews in the past few weeks, Mr. Williams has discussed his role in the case, although not the documents themselves. He is, by his own description, a nervous and sometimes contentious man, with an erratic employment history.

Mr. Williams has acknowledged that he was shocked by what he saw in the Brown & Williamson documents when he was working as a paralegal for the tobacco company's law firm in 1983. According to a letter written by his lawyer, he copied the documents and removed the copies, but he says he returned them later. The law firm and Brown & Williamson are suing Mr. Williams, claiming that he violated a confidentiality agreement.

Tortuous Path

Judge Thomas B. Wine of Jefferson County Circuit Court, who imposed the gag order, acknowledged in court that even if Mr. Williams's actions constituted a crime, it would be a misdemeanor for which the statute of limitations would have long expired. But Judge Wine said he was concerned about the confidentiality of the relationship between a law firm and its client.

"I don't understand it," said Mr. Williams in an interview. "How can I defend myself if I can't talk to my lawyer?"

Mr. Williams's lawyers, J. Fox DeMousey of Louisville and Alan Morrison of Washington, are trying to ap-



© Corbis for The New York Times
Merrell Williams

peal the judge's order — without discussing it with their client.

This odd legal situation is only one of many peculiarities of the case of Mr. Williams, a father of two, former teacher of drama, former paralegal and current tobacco industry pariah.

Mr. Williams says he fears for his safety in his home in Kentucky. For the past few months, he has been living in a maze of apartment buildings in a small town strung along an old Mississippi highway, long since bypassed by the Interstate.

About six weeks into his stay there, the apartment's refrigerator had little food but plenty of beer and wine. Boxes were not yet unpacked, and lamps not set up. He sat in the dark as light weakly shined from the kitchen, and gave this account of his life:

He was born in Louisiana into a conservative family. His father, who ran a small furniture store in West Texas, once switched churches when the minister used the word "belly." He has one sibling, a sister who is an artist. His father smoked Lucky Strikes and died of a heart attack in his early 50's. Mr. Williams, who smoked Kocis a Brown & Williamson brand, off and on for many years, suffered a severe attack of angina pectoris at about the same age.

Mr. Williams went to Baylor University and got a Ph.D. in drama from the University of Denver. He wrote plays, and some of his work was produced in Off Off Broadway theaters in New York; he also sold some television scripts. But life in New York made him nervous, so he took a job teaching drama at Jackson State University in Florida, where he married and became the father of two children. When, at age 40, he was replaced by a younger teacher, who he says had lesser credentials, he entered a complaint against Jackson State for age discrimination.

Turning to Law

In 1981 he moved from Florida to Louisville. Despite his 11 years of experience at Jackson State, he was unable to find a teaching job. Instead, he says, he took paralegal courses at Sullivan Junior College of Business in Louisville. He then sued the college, saying it had misrepresented its record of getting jobs for its graduates. The college counter-sued, and the case was eventually dismissed.

Around that time, his wife sued for divorce after 10 years of marriage. "What I had, when it was over," Mr. Williams said, "was a bicycle. I took jobs as a car salesman, a waiter, and I cut roses at one job."

Finally, in January 1982, he was hired by the law firm of Wyatt, Tarrant and Combs. At the time, the Wyatt firm was working for Brown & Williamson, describing, classifying and filing the company's internal papers. Other tobacco companies were carrying out similar projects because of lawsuits by former smokers.

Judge Wine's order prohibits Mr. Williams from talking about his work. But he said, "I can tell you that I read documents," he said, and that he had described himself in Judge Wine's court "as being horrified by what I had read."

He said he had found himself looking at documents that might be considered evidence of criminal acts. In September 1983, he drove into the mountains of Kentucky in a highly emotional state. After an attack of religious insight that he describes as "Gandhism," he decided to act.

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A Fresh Start

First, he quit smoking. And he decided to do something about tobacco and public health.

Because of Judge Wine's order, he cannot relate what he did over the next few years. He can say that in 1993, after his attack of angina, he underwent multiple bypass surgery.

Because he is thin and has low cholesterol levels and low blood pressure, he decided smoking had caused his heart disease and that of his father.

In July 1993, Mr. Williams appeared in the law office of Mr. DeMousey in Louisville. His life was being shortened by smoking, he said, and he wanted to sue.

He had brought with him a file box full of documents, which he described as papers taken from the files of Brown & Williamson. He told Mr. DeMousey of the "horrors" of what he had found in those documents about the company's knowledge of health hazards from smoking.

Mr. DeMousey promptly wrote to the Wyatt firm. In that letter, he said Mr. Williams intended to sue Brown & Williamson unless a settlement was reached. He also said that he had advised Mr. Williams to send back to the law firm the copies of documents he had and that he had been assured that this had been done.

The Wyatt law firm and Brown & Williamson then sued Mr. Williams, saying he had stolen documents and violated a confidentiality agreement.

Nine months later, in April, Brown & Williamson documents began to appear in the offices of members of Congress and newspapers. How the documents may have gotten from Mr. Williams's file box, which was sent back to Brown & Williamson, to those offices is not clear. Mr. Williams is unable to comment, but some have

suggested that he may have sent the papers to intermediaries, who then passed them to Congress and reporters.

The Food and Drug Administration, as it tries to determine if cigarettes should be regulated, has requested many of the documents from the company. The documents were also important in two hearings held by Representative Henry A. Waxman's Energy and Commerce subcommittee on health and the environment, and more hearings may be held later this year.

After Mr. Williams watched the televised hearings, he said he was feeling "a bit of euphoria. I'm very pleased that Waxman is taking hold of this issue. Someone is actually getting to some truth after 40 years of deception."

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Industry exploited safer-cigarette study

By GREG OTOLSKI
Business Writer

A federal project, begun in 1968 to save lives by developing a safer cigarette, instead wasted millions of taxpayer dollars and unwittingly helped cigarette companies create a lucrative market for low-tar cigarettes.

The project, which was launched by the National Cancer Institute, involved the tobacco industry to join scientists from government and academia in research to identify and remove the dangerous elements in cigarettes.

The cigarette companies accepted the invitation, but they had something else in mind: protecting the tobacco industry and finding a way to sell more cigarettes, according to

of half-heartedly cooperating and doggedly denying that cigarettes were harmful. Since then, the committee's research, including studies with dramatic evidence of smoking's impact on health, has accumulated dust in government files.

Neither Brown & Williamson nor the Tobacco Institute, which is the cigarette industry's Washington lobbying organization, would discuss the documents or this story.

The "less hazardous" cigarette project was administered by the National Cancer Institute and overseen by the Tobacco Working Group, headed by Dr. Gin Gori.

The Brown & Williamson documents, including memos between executives and letters to project officials, show that the tobacco industry was worried about the project from

the start. It didn't know what the Tobacco Working Group would find, and it feared that the group's work might lead the government to set standards for cigarettes, including limits on tar and nicotine content.

"One can logically expect that any reluctance on the part of the industry to voluntarily produce commercial cigarettes on the basis of positive results from this program would result in legislation to force the companies to adopt a safer cigarette without regard as to whether it would be commercially acceptable," Brown & Williamson's research director, Robert Griffith, wrote in a September 1968 memo to the company's president, E. P. Finch.

Griffith noted, however, that, "since the industry has representatives on this committee, it should be

The tobacco industry's first in influencing the Tobacco Working Group was to deny that cigarettes caused any health damage through the group officially approved the project that "try smoking is a major contributor in the causation of lung and chronic cardiovascular and pulmonary disease."

"The problem was that all we always said smoking was doing, the industry kept trying to discredit this as a safe cigarette there is no such thing," said Dr. Fisher, a former director of the National Cancer Institute, who was the project in its early years. Baker remembers "well

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Page 6, col 1, this

Although many of the study's findings did not bode well for the cigarette companies, the companies began looking for ways to take advantage of their dilemma.

possible to remain completely aware of all actions taken and in these actions."
That set up the conflict that eventually sank the project.

Fiscal Court may spend \$1 million to lease rail space

I wasn't prepared to see those bodies'



Fire kills
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AUGUST 11, 1974

Cigarette firms found unlikely ally in adversary

By GREG OTOLSKI, Business Writer

TOBACCO ON TRIAL

Turning government
research into profits

LAST OF TWO PARTS

the premise that cigarettes were bad for health, Gori was one of the last people cigarette-company officials would have expected to help create a lucrative market for dozens of new cigarette brands. Indeed, industry executives exchanged letters suggesting that Gori was off the mark on a variety of matters.

That, Internal Brown & Williamson Tobacco Corp. documents obtained by The Courier-Journal show, that the tobacco industry went from fearing and disliking Gori's work in adopting him as an ally. Now the industry pays Gori, a consultant in Bethesda, Md., to testify in its behalf on issues related to smoking and health.

Brown & Williamson did not respond to an

invitation to comment on this story. By the mid-1970s, colleagues of Gori's say, they began to worry that he was giving the public a false sense of security about smoking's impact on health.

And some were shocked in 1976 when Gori, then a deputy director of the publicly funded National Cancer Institute, said in a speech on smoking and disease that a person could smoke as many as 10 to 20 of some low tar cigarettes every day and not be statistically at any more risk of developing health problems than a num-

See ADVERSARY
Page 6, col. 1, this section

Adversary became ally

Continued from Page One

smoker. His conclusions were based on separate statistical studies rather than the working group's animal studies.

Gori continued to push his low-tar theory, and, in 1976, was even a co-author of a paper in the Journal of the American Medical Association that included a chart showing how many cigarettes of various brands he said people could smoke a day with minimal risk.

Gori's low-tar speeches and articles caused such an uproar in the health community and within the government that other scientists at the National Cancer Institute called for his resignation, and Health, Education and Welfare Secretary Joseph Califano publicly criticized him.

Gori took a sabbatical from the National Cancer Institute in 1976 after the barrage of criticism over his paper on low-tar cigarettes. He returned to the institute for a short time before leaving in 1980. Since then he has worked for various privately funded public-policy and health groups and has continued to write about smoking and health.

Gori said he believes he was the victim of a change in the government's policy toward smoking and health. When Jimmy Carter became president in 1976, the policy started to shift from one of trying to make cigarettes less hazardous to eradicating smoking, Gori said.

"The new policy was: Smokers shouldn't be helped; smokers should be eliminated," Gori said in an interview last week.

He has said all he did was tell committed smokers how to smoke with less risk.

He said statistical studies done separately from the working group's animal research clearly backed him up.

Dr. Jesse Steinfeld, an original member of the Tobacco Working Group who was U.S. surgeon general from 1969-73, said he remembers reading about Gori's statements and thinking they were "ludicrous" in light of the evidence that had been gathered.

"We thought maybe we could identify the harmful constituents in tobacco smoke and remove them, but there's no way to make a safe cigarette," Steinfeld said. "What was so crazy about Gori's statement was that even if lower levels of tar somehow made cigarettes slightly less hazardous, that still didn't do anything to reduce the carbon monoxide and all the other things in cigarette smoke that affect the heart and cause things like emphysema."

What caused change?

What turned the industry adversary into an asset?

Tobacco-company documents and interviews with other scientists show that a change occurred, but they don't suggest why.

After the project began, documents show, the companies conferred repeatedly on their correspondence with Gori, objecting to proposals he made to test cigarettes or to the way he had characterized findings from experiments.

On more than one occasion, the cigarette companies discussed ways to respond to Gori's proposals for the Tobacco Working Group, which ran the National Cancer Institute's project to develop a less hazardous cigarette.

The cigarette companies worried that the working group would prompt legislation requiring the industry to manufacture cigarettes that were safer but unappealing to smokers, according to a memo its members exchanged.

Indeed, Gori directed a series of experiments on animals showing that cigarette smoke would cause tumors and damage the respiratory system. Nor one of the more than 70 experimental cigarette types made and tested by the Tobacco Working Group was proven to be safe.

"Up until 1976 he was thought to be someone pursuing a line of scientific research that a lot of people thought would have some benefit," said Don Shopland, coordinator of the current National Cancer Institute's Smoking and Tobacco Control Program, an anti-smoking effort.

"It was perceived as legitimate until he began making these outlandish comparisons about smoking low-tar cigarettes and health risk," Shopland said.

Views gained attention

The news media picked up Gori's contentions that people could smoke some low-tar cigarettes with out unreasonable risk. He appeared in newspaper stories and on television programs across the country.

Some scientists and health officials were alarmed, but cigarette industry officials saw an opportunity.

Brown & Williamson and other cigarette companies developed new brands of cigarettes containing the levels of tar that Gori said were "tolerable" and marketed them as safer cigarettes that they labeled a "low-tar," "ultra light" and "ultra low-tar."

The Federal Trade Commission says it does not regulate the use of these terms. The cigarette industry



Dr. Gio Gori
FEDERAL TRADE COMMISSION
WASHINGTON, D.C.

however, set its own standards by marketing any cigarette with 15 milligrams of tar or less as "low-tar" and 9 milligrams of tar or less as "ultra-low-tar."

Although there is no scientific standard for claiming what constitutes a low-tar cigarette, each company aggressively marketed its "safe" brands. The Liggett Group put together a store-display advertisement that reprinted a 1975 Washington Post story about Gori's statements on low-tar cigarettes.

One Brown & Williamson proposal for a low-tar cigarette said, "The parameters of a 'safe' cigarette have been defined by Dr. Gori of the Federal Government, although his definition of 'safe' is believed to as yet be largely unrecognized by the medical community at large."

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Sales of low-tar and ultra-low-tar cigarettes quickly took off. In 1976, low-tar cigarettes accounted for just 16.7 percent of U.S. sales, but by 1983 they had grown to 48.5 percent, according to reports from that time. Of the 461.2 billion cigarettes sold (for \$47 billion) in the United States last year, 59.2 percent were low-tar, said John Maxwell, an analyst in Richmond, Va., with Wheat First Securities.

An article in the Nov. 17, 1980 issue of *Fortune* magazine all but called Gori the father of the market for "ultra-low-tar" cigarettes. It traced the ultra-low-tar boom to an interview Gori gave *The Associated Press* about his 1976 paper on low-tar cigarettes.

"The AP's account of this study, picked up by newspapers throughout the country, was read as a cheering reprieve by countless smokers," the *Fortune* article said. "It had been commonly assumed that even the mildest cigarettes posed a significant health hazard. But here was a quasi-official source, with no ties to the tobacco industry, suggesting that certain cigarettes were reasonably safe."

Working relationship

Although Gori was on the government payroll and took some positions that the cigarette companies strongly disagreed with, he did have close working ties with the industry. Industry representatives were members of the Tobacco Working Group he chaired and, although tobacco-company documents show that the companies were uncooperative members, they apparently maintained a regular correspondence with Gori and sometimes took vigorous exception to things he wrote.

Brown & Williamson's vice president for research and development, I.W. Hughes, ended one letter containing criticism by adding, "I hope that the above comments do not offend you, but I felt that our relationship would stand the stress."

Internal Brown & Williamson documents show that cigarette-company executives received drafts of National Cancer Institute press releases on smoking and health dur-

ing the 1970s as well as a draft of Gori's 1976 low-tar article that appeared in the *Journal of the American Medical Association*.

On Dec. 23, 1975, Hughes wrote Gori about two proposed press releases from the Cancer Institute, one over Gori's name and another that was a joint statement by leaders of the institute, the National Cancer Advisory Board and the National Heart and Lung Institute. The release outlined the dangers of smoking and the need for the cigarette companies to make their products safer.

Hughes objected to both as containing "unsupportable claims and exaggerations."

"Dear Dr. Gori, Thank you for sending me the two press releases," he said. "After reading them, I have no choice but to urge you to try to convince the people concerned not to use them."

The National Cancer Institute could find no record of whether the press releases were issued or changed. However, in a Dec. 18, 1975, letter to Gori marked "Confidential," a senior vice president of Lorillard, Dr. A.W. Spears, confirmed that Gori had told him in a telephone conversation that the objectionable press release was unlikely to be issued and that if it were released, it would not be before March 1976.

Gori said there was nothing wrong with giving drafts of press releases to the cigarette-company executives, because they were involved in the Tobacco Working Group

"It was the duty to send all the members copies of everything in advance," Gori said.

He said he never felt any pressure from the companies to change press releases or alter any work he was proposing for the working group.

Brown & Williamson executives clearly welcomed Gori's 1976 speech saying low-tar cigarettes could be smoked with little health risk.

"I believe Gori is saying that the problem virtually has been solved," Ernest Pepples, Brown & Williamson's vice president for law, said in an Oct. 29, 1975, letter to H.A. Minner, the chief lawyer for Brown & Williamson's parent company, B.A.T. Industries PLC.

Pepples noted that as the head of a group pursuing a safer cigarette, Gori would still say that studies showed tobacco dangers. But overall, he believed Gori could be a great help to the industry.

"It must be kept in mind, however, that Gori is a man who claims to be building a better mousetrap with government funds. Accordingly, he must continue pointing out that mice are a hazard," Pepples wrote.

Gori said last week that he still believes cigarettes can be made safer, but the man who once wrote that cigarette smoking "is a major contributing factor in the causation of lung cancer and chronic cardiovascular and pulmonary diseases" now says smoking is beneficial to some people.

"People will continue to smoke because they like it and smoking provides them with some way of coping with the stress of daily life," Gori said. "Smoking helps them."

When asked if people would be healthier if they didn't smoke, Gori said, "I'm not sure."

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LESS HAZARDOUS CIGARETTES?

In the Sept. 15, 1978, issue of the Journal of the American Medical Association, a paper of which Gid Gori was co-author said that some low-tar cigarettes could be smoked in moderation with little apparent health risk. Gori examined 27 brands for how much tar, nicotine and four other dangerous compounds they contained.

The paper listed the brands and how many cigarettes, he said, could be smoked daily with minimal risk. Many scientists vigorously disagreed with Gori's findings and said cigarettes aren't safe in any quantity.

Brand	Number per day	Brand	Number per day
Benson & Hedges Light	4	Lucky 100	8
Carton	16	Merit	3
Carton Menthol	23	Merit Menthol	3
Decade	7	Newport Lights Menthol	4
Decade Menthol	6	Now	17
Iceberg 100s	6	Now Menthol	18
Kent Golden Lights	5	Pall Mall Extra Mild	7
Kent Gold Lights Menthol	6	Real	3
King Sans	3	Real Menthol	5
King Sans Menthol	3	Stride	17
L&M Flavor Lights (Kings)	8	Tareyton Lights	6
L&M Long Lights (100s)	6	Tempo	3
Lara II	6	True	8
		True Menthol	8

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SMOKING

THE CANCER CONTROVERSY

SOME ATTEMPTS TO ASSESS
THE EVIDENCE

SIR RONALD A. FISHER,
Sc.D., F.R.S.

OLIVER AND BOYD
EDINBURGH: TWEEDDALE COURT
LONDON: 39A WELBECK STREET, W.1

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CIGARETTES, CANCER, AND STATISTICS*

SEVEN OR EIGHT years ago, those of us interested in such things in England heard of a rather remarkable piece of research carried out by Dr. Bradford Hill and his colleagues of the London School of Hygiene. We heard, indeed, that it was thought that he had made a remarkable discovery to the effect that smoking was an important cause of lung cancer. Dr. Bradford Hill was a well-known Fellow of the Royal Statistical Society, a member of Council, and a past president—a man of great modesty and transparent honesty. Most of us thought at that time, on hearing the nature of the evidence, which I hope to make clear a little later, that a good *prima facie* case had been made for further investigation. But time has passed, and although further investigation, in a sense, has taken place, it has consisted very largely of the repetition of observations of the same kind as those which Hill and his colleagues called attention to several years ago. I read a recent article to the effect that nineteen different investigations in different parts of the world had all concurred in confirming Dr. Hill's findings. I think they *had* concurred, but I think they were mere repetitions of evidence of the same kind, and it is necessary to try to examine whether that kind is sufficient for any scientific conclusion.

The need for such scrutiny was brought home to me very forcibly about a year ago in an annotation published by the British Medical Association's Journal, leading up to the almost shrill conclusion that it was necessary that every device of modern publicity should be employed to bring home to the world at large this terrible danger. When I read that, I wasn't sure that I liked "all the devices of modern publicity", and it seemed to me that a moral distinction ought to be

* Lecture delivered at Michigan State University. (1958)

drawn at this point. There is the attitude of a man (may I say, I think it is an entirely rational attitude and one within his own competence to judge) who says, "There seems to be some danger—I can't assess whether it is infinitesimal or serious. This habit of mine of smoking isn't very important to me. I will give up smoking as a kind of insurance against a danger which I am quite unable to assess." That seems to me a perfectly rational attitude. What is not quite so much the work of a good citizen is to plant fear in the minds of perhaps a hundred million smokers throughout the world—to plant it with the aid of all the means of modern publicity backed by public money, without knowing for certain that they have anything to be afraid of in the particular habit against which the propaganda is to be directed. After all, a large number of the smokers of the world are not very clever, perhaps not very strong-minded. The habit is an insidious one, difficult to break, and consequently in many, many cases there would be implanted what a psychologist might recognize as a grave conflict.

If there is cause for fear, let there be warning. But there is no reason for this in the first rational response that I described—that does not require scientific proof that there is reason to fear. There is only the possibility that there is reason.

Before one interferes with the peace of mind and habits of others, it seems to me that the scientific evidence—the exact weight of the evidence free from emotion—should be rather carefully examined. I may say, I am not alone in this. I have been interested to note that leading statisticians in this country also—and I contact a good many statisticians both in my own country and here—are exceedingly sceptical of the claim that decisive evidence has been obtained. In the popular press, the matter seems to be argued, as always, a little off the simplest lines. For example, I find people saying, "These statisticians think this"—"These statisticians think that", or representing that this kind of evidence which has been produced has been attacked as being merely statistical. Now I should be the last person to attack evidence for being merely

statistical, because for a great part of my work I have been concerned with the problem of *how* experimentation should be carried out, *how* reasoning processes should be applied to the data supplied by experimentation or by survey so as to give really conclusive answers.

Progress has been made during the last twenty-five years. A large part of the educated world, at least in the statistical field, has become aware that, by taking certain specific precautions, entirely unchallengeable conclusions can be obtained in the experimental field. The work was done primarily in agriculture, where problems of experimentation attracted the attention of leading agronomists at an early time. The key words which emerged in the course of these inquiries—replication, randomization, and control—are now widely understood.

We understand that replication is required for two purposes: it is necessary in order to add precision to our results by diminishing the error to which they are subject, and it is essential in a more important way, as supplying the only means of the estimation of such error.

Although replication is essential in this way, it is not sufficient without the added precaution of randomization, that is, the assignment of the different treatments—which may be manurial treatments, or different varieties of agricultural crops, or different methods of tillage—to the plots set aside for the purpose, in such way at random as to guarantee the validity of the experiment, and in particular of the estimate of error to which it is subject. This necessity for randomization was brought home to agriculturists largely because it was found that human judgment was very liable to err in this matter, that if one tries to think of numbers at random, one thinks of numbers very far from at random. If one tries to think of a card of an ordinary playing deck, it's well known (perhaps it's not so well known—it is known to me, at least) that red cards are thought of more readily than black cards, that odd numbers are thought of more readily than even numbers, and that the Queen of Diamonds is a hot favourite. This proclivity of the human mind affects any consciously guided

choice or assignment of material. Agriculturists, at least, do not trust themselves to choose plous and say that they have been chosen at random. They use decks of cards or, more expeditiously, in recent years, some of these large collections of random sampling numbers which some of you may have seen at the ends of books of tables and perhaps wondered what on earth they can be for. They are in constant use in the design of experiments.

There is a logical aspect, too, of randomization which needs emphasis in this connection. Supposing we have an association—an observable and verifiable association—between two things. I remember Professor Udny Yule in England pointing to one which illustrates my purpose sufficiently well. He said that in the years in which a large number of apples were imported into Great Britain, there were also a large number of divorces. The correlation was large, statistically significant at a high level of significance, unmistakable. But no one, fortunately, drew the conclusion that the apples caused the divorces or that the divorces caused the apples to be imported. The early logicians would say that *post hoc* is not the same as *propter hoc*, or in other words—as it would be put in the early years of our century, when statisticians had had perhaps ten years' experience of the correlation coefficient as a means of research—that *correlation is not causation*. The fact is that if two factors, *A* and *B*, are associated—clearly, positively, with statistical significance, as I say—it may be that *A* is an important cause of *B*, it may be that *B* is an important cause of *A*, it may be that something else, let us say *X*, is an important cause of both. If, now, *A*, the supposed cause, has been randomized—has been randomly assigned to the material from which the reaction is seen—then one may exclude at a blow the possibility that *B* causes *A*, or that *X* causes *A*. We know perfectly well what causes *A*—the fall of the dice or the chances of the random sampling numbers, and nothing else.

But in the case where randomization has not been possible, these other possibilities lie wide open and should be excluded, or at least every effort should be made to exclude them, before

we can assert that causation has been established. When I spoke to Bradford Hill in the early days of this affair, he was entirely unwilling to claim that causation had been proved. He said he didn't see what else it could be, but he was certainly unwilling to make the claim which is being made vociferously during the last year or two by committees reporting to the Medical Research Council in England, and to the American Cancer Society. Now, randomization is totally impossible, so far as I can judge, in an inquiry of this kind. It is not the fault of the medical investigators. It is not the fault of Hill or Doll or Hammond that they cannot produce evidence in which a thousand children of teen age have been laid under a ban that they shall never smoke, and a thousand more chosen at random from the same age group have been under compulsion to smoke at least thirty cigarettes a day. If that type of experiment could be done, there would be no difficulty.

The principles of experimentation—which, as I mentioned, were developed in the agricultural field, where the need for them was greater or more manifest—have spread, and spread rapidly and healthily, into the other experimental sciences. And I suppose during the last fifteen years a dozen important books have been written on the design of experiments, principally to make clear what these principles are in their particular applications in chemistry, physics, biology, or what you may will.

But the most difficult field for the application of these principles has always been the medical field. This is partly because you can do things to a rat or rabbit which may not be good for it, feeling that in a good cause you have a right to do so. But no one feels—and especially a medical man could not feel—that it is right to do things to a human being which probably will do him harm. Consequently, deliberate experimentation has not been very widely used in the medical field. There is a movement at the present time to organize clinical trials, let us say, of new drugs or of new antibiotics in such a way that an impartial judgment in comparing the new with the old may be obtained by hospital staffs. And that would

involve applying the new and the old at random to some of the hospital patients. So long as no body of medical opinion can say with confidence that one is better than the other, or perhaps that in matters usually as complicated as this, for what cases one drug is the better and for what cases the other—so long as that state of ignorance remains, it would be perfectly fair, I think, to clear the air by such simple experimentation.

But manifestly we cannot experiment with the same freedom that is possible with agricultural animals and laboratory animals in other sciences. For lack of that, medical research has had to rely a good deal on uncontrolled experiments, uncontrolled observations; and of course from the time of Jenner onwards there were numerous cases where an observant (and also, I may say, an experimental) physician may be able to make out an exceedingly strong case. Jenner's work was not completely passive. And Dr. Snow, who studied and in the end quelled the occurrence of cholera in London, used a very large number of different types of inquiry in order to gain sufficient confirmation of his important conclusion, namely, that it was faecal contamination in the water supply that was responsible for the cholera, an opinion that is easy to take for granted at the present time, but which in the absence of any knowledge of the organisms concerned—or, indeed, knowledge that the disease *was* caused by an organism—was a considerable advance, just as Jenner's was also in the case of smallpox. Consequently, when inconclusive evidence is criticised on the ground that it is inconclusive, it is not uncommon for medical men to defend it, perhaps with certain indignation, on the ground that in the past medical science has made notable advances primarily—not solely, never only, but primarily—by the observational method.

Now, in the sciences we also have cases in which experimentation is impossible. In astronomy, for example, experimentation, you might say, has only just begun. And in those sciences we must use what I may call *sidelights*.

Let me illustrate this possibility with a very few instances.

The first reports of Hill and Doll made a very simple claim. They said that the additional amount of lung cancer observed in patients was proportional to the amount of tobacco they consumed. That simple conclusion was quite rapidly withdrawn, and it was admitted that tobacco consumed in the pipe or in the cigar did not appear to have so close an association with lung cancer as that consumed in the cigarette. And this was a puzzling thing. After all, tobacco is burned in all three cases. The effluvia, smoke, or aerosol from the burning tobacco passes into the mouth, partly into the throat, partly, indeed, into the lungs, in all three cases. It is not obvious—it is not what one would guess at first sight, it was not what Doll and Hill guessed at first—that the one sort of smoke should be comparatively or perhaps wholly innocuous and the other sort should have the effect of inducing the beginnings of a dreadful disease.

And now I must go back and recall just what the kind of evidence it was that Hill and Doll laid before us at the beginning, and in what ways it has been extended by other evidence.

The first inquiry was to take about 1500 patients in a number of different hospitals who had been diagnosed as suffering from lung cancer. Of course the diagnosis is enormously aided in recent times by the use of radiology. The lung cancers can be perceived by their shadows when X-rays are passed through the lungs. Consequently there was good reason to think that these patients—although they were alive and had not been examined post-mortem—really were lung cancer cases. Arrangements were made to record their smoking habits and their smoking history: non-smokers, cigarette smokers, pipe smokers, estimates of the amount of daily consumption of tobacco in each case, and a number of other questions. A similar number, perhaps a few more, of non-cancer patients from the same hospitals received the same questionnaire, and the comparison between these two samples, one of them selected as being lung cancer cases and the other as being in hospitals from some other condition, was made of the classification by smoking habit. And it appeared from

that that the cigarette smokers were more common among the sufferers from lung cancer than they were among other patients, and that within the cigarette smokers, heavy cigarette smokers were more common among the lung cancer patients than medium or light cigarette smokers.

The statement that consumers of tobacco in other forms were associated with lung cancer seems to have largely evaporated. I should say a word about it because it represents a common cause of error in statistical investigations, namely, the kind of error which flows from the difficulty of a perfect classification. Everyone can make a rough classification of cigarette smokers or pipe smokers or non-smokers, but there will be borderline cases. There are people who, though they may prefer a pipe when they have the opportunity, yet may be constrained by duress, such as in the intervals of a play when there is very little time, to smoke a cigarette. There are also distinguished and expensive restaurants, as well as aircraft, who don't like the customer to pull out a pipe. Consequently there is an overlap in the practices and habits of different people; there may not be exactly the same interpretation put on the questionnaire by all the different subjects; and, in fact, a good many pipe smokers may be classified as cigarette smokers, and vice versa. There is bound to be some mixture of the classes in any inquiry on a complicated question. And so the first results did seem to show some effect on pipe smokers and cigar smokers, but it is quite clear that the amount was much smaller than was at first thought, and certainly no more than might easily arise due to misclassification. At least it would be very foolish for anyone who wished to make a case for saying that cigarette smoking was a cause of lung cancer to bring in the evidence about pipe and cigar smoking.

When an unexpected discrepancy occurs, it is a common reaction (I won't say, a failing—it's part really of the scientific discussion which data deserve) to think up some reason for it. This, in effect, may be something like what the logicians would call a "special pleading". That is to say, the making of an

assumption, which might be true, which might, indeed, not be true, but which, if true, would help to explain what is otherwise inexplicable. For example, the cigarette contains paper, or, rather, is contained by paper. One doesn't smoke paper much in pipes. There are, indeed, special papers supplied to pipe smokers who wish to enjoy their tobacco in that way. But most pipe smokers and, I suppose, all cigar smokers, do without paper. And it could be, therefore, that it's the consumption of paper that is the really dangerous practice. Then, also, it has been observed that the temperature at which the tobacco is burned is higher in the case of the cigarette than in the case of the pipe, and, it could be (though it certainly is not known to be) that burning at a higher temperature is a condition for producing something quite unknown, something quite unexplored, something quite hypothetical, in the tobacco smoke which would be capable of producing lung cancer. It is also known that the tobacco used as pipe tobacco and for cigars is more thoroughly fermented before use than is that used in cigarettes, or at least in the predominant source of cigarette tobacco, in Virginia. I think those who prepare the tobacco produced in Virginia are rather acutely aware, that the price per pound is high, there is loss of weight in fermentation, and it is as well not to lose 10 per cent. more weight than is necessary. And so, on the whole, the Virginia tobacco is rather lightly fermented. You could imagine—you could claim even—as a special pleading, that it was the unfermented condition of the Virginia tobacco, largely used in cigarettes, that was responsible for the supposedly noxious fumes which the burning of such tobacco produces. Discussion is full of such things.

One of the first people in the United States that spoke to me on the matter, a lady, said, "Of course, cigarette smokers inhale; pipe smokers don't." And of course she laid her finger on an extremely important point. Cigarette smokers in this country, I believe, generally inhale. In England, some do and some don't. When I was a little boy, it was thought that smoking was all right and did you no harm, but inhaling was

perhaps a perverse practice and might not do you any good. And so, at any rate my generation, and perhaps some decades of younger men, had a certain amount of warning against this particular practice. I imagine it is something like that that explains the difference in practice between the two countries.

Now, Doll and Hill, in their first inquiry—the one that I've gone over approximately—*did* include in their questionnaire, which was put both to the cancer patients and to the patients from other diseases, the question: "Do you inhale?" And the result came out that there were fewer inhalers among the cancer patients than among the non-cancer patients. That, I think, is an exceedingly important finding. I don't think Hill and Doll thought it an important finding. They said that perhaps the patients didn't understand what inhaling meant! And what makes it far more exasperating, when they put into effect an exceedingly important research, based on the habits of the medical profession, by asking about 60,000 doctors in Great Britain to register their smoking habits, and about 40,000 of them did so co-operatively, I am sorry to say that the question about inhaling was not in that questionnaire. I suppose the subject of inhaling had become distasteful to the research workers, and they just wanted to hear as little about inhaling as possible. But it is serious because the doctors could have known whether they were inhalers or not; they could have known what the word meant; perhaps they would have consulted each other sufficiently to lay down a definition which the rest of us could understand. At any rate, there would have been no *alibi* if the question had been put to a body of 40,000 physicians.

So, our evidence about inhaling is embarrassing and difficult. There is no doubt that inhaling is more common among heavy cigarette smokers than among light cigarette smokers in Great Britain, where inhaling is not nearly a universal practice. There is no doubt that cancer is commoner among the heavy cigarette smokers than among the light cigarette smokers. Consequently, if inhaling had no effect whatever,

you would expect to find more inhalers among the cancer patients than among the non-cancer patients. There would be an indirect correlation through the association of both with the quantity smoked. Now, of course, in what was reported everything was thrown together; and yet, in the aggregate data, it appeared that the cancer patients had fewer inhalers than the non-cancer patients. It would look as though, if one could make the inquiry by comparing people who smoke the same number of cigarettes, there would be a negative association between cancer and inhaling. It seems to me that the world ought to know the answer to that question.

Before I stop, in fact, I hope I shall make clear that there is a case for further research, and I shall only mention two areas which would seem to be profitable for investigation. I would stress the importance of what could be done comparatively easily with rather little expense, namely, to ascertain unmistakably what the facts are about inhaling. If inhaling is found to be strongly associated with lung cancer, it would be consonant with the view that the products of combustion, wafted over the surface of the bronchus, might induce a pre-cancerous and thence a cancerous condition. But if there is either no association at all or a negative association, we should have to reject altogether that simple theory of the causation of cancer.

The subject is complicated, and I mentioned at an early stage that the logical distinction was between *A* causing *B*, *B* causing *A*, or something else causing both. Is it possible, then, that lung cancer—that is to say, the pre-cancerous condition which must exist and is known to exist for years in those who are going to show overt lung cancer—is one of the causes of smoking cigarettes? I don't think it can be excluded. I don't think we know enough to say that it is such a cause. But the pre-cancerous condition is one involving a certain amount of slight chronic inflammation. The causes of smoking cigarettes may be studied among your friends, to some extent, and I think you will agree that a slight cause of irritation—a slight disappointment, an unexpected delay,

some sort of a mild rebuff, a frustration—are commonly accompanied by pulling out a cigarette and getting a little compensation for life's minor ills in that way. And so, anyone suffering from a chronic inflammation in part of the body (something that does not give rise to conscious pain) is not unlikely to be associated with smoking more frequently, or smoking rather than not smoking. It is the kind of comfort that might be a real solace to anyone in the fifteen years of approaching lung cancer. And to take the poor chap's cigarettes away from him would be rather like taking away his white stick from a blind man. It would make an already unhappy person a little more unhappy than he need be.

For my part, I think it is more likely that a common cause supplies the explanation. Again, we do not know. I do not put forward any explanation as proved, but as requiring investigation. The obvious common cause to think of is the genotype. We are all different genotypes. I suppose in this nation there must be well over 150 million different genotypes. If one studies cancer in mice (and I suppose about half the mice of the world are kept to study cancer with), if one examines any of the many (and there are thousands) of inbred lines of mice (where we can get a hundred or two hundred individuals of the same genotype to study)—if you take, then, any two such lines of differing genotypes, they will, I believe, invariably be found to differ in the frequency, in the age incidence, and in the type of cancer which those mice suffer from. Consequently if there is any genotypic difference between the different smoking classes, we may expect differences in the type or frequency of the cancers that they display.

That is the second line of research which I should like to advocate; a little bit more difficult than that which is concerned with inhaling, but certainly well within the capacity of modern methods in human genetics. It certainly could be ascertained, as a matter of fact, whether in the different smoking classes of non-smokers, cigarette smokers, pipe smokers, cigar smokers (the minor classes, perhaps, of snuffers and chewers perhaps might not be sufficiently numerous, but in

those first main four classes it could certainly be ascertained) whether there was evidence that they differ genetically. It wouldn't be a long shot to guess that they did. After all, we choose these things for ourselves. I know that there are families in which there would be some pressure on a growing boy or girl to be a non-smoker, because his father and mother firmly believe that smoking is an objectionable habit, or perhaps an irreligious habit. But most of us choose for ourselves, and even though one may have been exposed to opportunities—temptations, if you like—to smoke cigarettes from a fairly early boyhood, it is not uncommon to find people who never smoke anything but a pipe. Why? Because they are made that way. They are the sort of men who take to the pipe and don't take to cigarettes, just as there are other men who would never take to a pipe but constantly feel the need of cigarettes. It is not, then, a very long shot to guess that there is a genetic component which distinguishes the different smoking classes. And that is the second piece of research which I think is extremely urgent.

I have criticized the over-confidence shown at least in public utterances or published reports of anonymous committees on this subject, and I do not suppose that Bradford Hill, at least, is at all to blame for that over-confidence. The worst effect of that over-confidence, so far, is that it seems to have held back the various teams of workers. They are well supplied with money—the Medical Research Council is not stinting money on cancer research, and the American Cancer Society is obviously exceedingly well supplied with money. And yet, I think nothing but over-confidence that they had found the solution, that they had the game in the bag, could have prevented them from following up some of the other lines of inquiry which are much needed. I have said nothing, for example, so far of the very striking fact that at the same level of cigarette smoking, dwellers in towns have considerably more lung cancer than dwellers in the country. I don't know any extensive piece of research which has been set on foot to get to the bottom of that important difference.

The desire to make a strong sensation, to bring home the terrible danger to these passive millions, has led writers to stress the very alarming fact that lung cancer is a disease increasing, one of the few important diseases that are increasing in frequency. It is not so important in the United States as it is in England, but it is an important cause of death in both countries. It has been increasing over the last fifty years. It is frightening. But it shouldn't be used to frighten people.

The change over recent decades gives not the least evidence of being due to increasing consumption of tobacco. We can't tell much about the absolute magnitude of this secular change. It is certain that radiology has facilitated the detection of lung cancer enormously, that radiological apparatus and radiologists are much more abundantly available for our populations than they formerly were. I do not know that there are not remote and secluded communities where patients with lung cancer are not looked at by radiologists, but that proportion of our populations must be still decreasing. Again, the attention of the medical profession has been forcibly drawn to lung cancer, and it invariably happens that when the attention of the medical profession is drawn to any disease, that disease begins to take up more space in the official reports—it is more often seen and more often diagnosed with confidence; death certificates more often include that particular disease. Consequently it is not easy to say how much of the increase is real. I think part of it must be real, because there's no doubt that the populations concerned have been enduring or enjoying a very considerable increase in urbanization. The big metropolitan cities have been growing rapidly. In England, smaller towns have been running together into extensive masses called conurbations, like those of Clydeside or Merseyside or the Birmingham region. Even in the country, even in what used to be remote villages, there are motor-buses regularly which take the young men and women into cinemas perhaps six or eight miles away. You might say that the whole population during the last twenty, thirty, forty years has been becoming steadily urbanized, and as the urban rate

for lung cancer is considerably greater than the rural rate, in my country as in yours, we must recognize here the possibility of one real cause of the increase in lung cancer. There may be others.

But the only good comparison we can make in respect of the time-change is that between men and women. The same apparatus, the same radiologists, the same physicians diagnose both men and women. Whatever effects improved apparatus may have, whatever effects an increased attention to the disease may have, will be the same in the two sexes. Whatever effects urbanization may have you would think might be the same in the two sexes. Consequently, we can, at least, inquire whether the rate of increase of lung cancer in men is the same, or greater, or less, than the rate of increase of lung cancer in women. For it is certainly true, I think in both our countries, that whereas the smoking habits of men have not changed very dramatically over the last fifty years, yet the smoking habits of women have changed a very great deal. And on making that comparison, it appears that lung cancer is increasing considerably more rapidly—absolutely and relatively—in men than it is in women, whereas the habit of smoking has certainly increased much more extensively in women than in men. There is, in fact, no reasonable ground at all to associate the secular increase in lung cancer with the increase in smoking as has been done with dramatic eloquence, I suppose as part of the campaign of bringing home the terrible danger, just as though it was impossible that statistical methods of inquiry should supply a means of checking that very rash assumption.

And so I should like to see those two things done, one immediately and quickly: an inquiry into the effects of inhaling, and secondly, a more difficult but certainly a possible task of seeing to what extent different smoking classes were genotypically conditioned. And I believe that only over-confidence, if it is allowed to have its way, could prevent those further inquiries from being made.

SMOKING AND HEALTH

*Summary of a Report of
The Royal College of Physicians of London
on Smoking
in relation to
Cancer of the Lung
and
Other Diseases*



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and 5, pp. 9 and 11) (paras. 9 and 11).

Advertising of Tobacco. There has been a steep increase in expenditure on advertisements of tobacco goods recently. Over 11 million pounds was spent on such advertisements in 1960 (Table 1, p. 6; Figure 6, p. 13). The increase has mostly been devoted to advertising cigarettes and many recent advertisements have been aimed at young people. It cannot, however, be assumed that advertisements are responsible for the continuing increase in tobacco consumption today (paras. 10-11).

SUMMARY

Introduction

Several serious diseases, in particular lung cancer, affect smokers more often than non-smokers. Cigarette smokers have the greatest risk of dying from these diseases, and the risk is greater for the heavier smokers. The many deaths caused by these diseases present a challenge to medicine, for in so far as they are due to smoking they should be preventable. This report is intended to give to doctors and others evidence on the hazards of smoking so that they may decide what should be done (paras. 1-3).

History of Smoking

After its introduction to Europe in the 16th century, tobacco smoking, mostly in pipes, rapidly became popular. It has always had its advocates and opponents, but only recently has scientific study produced valid evidence of its ill-effects upon health. Cigarettes have largely replaced other forms of smoking in the past seventy years, during which time tobacco consumption has steadily increased. It is still increasing. Women hardly ever smoked before 1920: since then they have smoked steadily increasing numbers of cigarettes (Figure 1, p. 3) (paras. 5-6).

Present Smoking Habits

Three-quarters of the men and half of the women in Britain smoke. Men smoke more heavily than women. Smoking is now widespread among schoolchildren, especially boys. (Figures 2 and 3, pp. 5 and 7) (paras. 7-9). Many doctors have given up smoking since the dangers of the habit have become apparent: only half of

Chemistry and Pharmacology of Tobacco Smoke

Tobacco smoke is complex in composition. Its most important components are: nicotine which acts on the heart, blood vessels, digestive tract, kidneys and nervous system; minute amounts of various substances which can produce cancer; and irritants which chiefly affect the bronchial tubes. The amounts of carbon monoxide and arsenic in the smoke are probably too small to be harmful (paras. 12-22).

Smoking and Cancer of the Lung

There has been a great increase in deaths from this disease in many countries during the past 45 years (Figure 7, p. 15). Some of this increase may be due to better diagnosis, but much of it is due to a real increase in incidence. Men are much more often affected than women. (Table 11, p. 14) (paras. 23-26).

Surveys. Many comparisons have been made in different countries between the smoking habits of patients with lung cancer and those of patients of the same age and sex with other diseases. All have shown that more lung cancer patients are smokers, and more of them heavy smokers than are the controls. The association between smoking and lung cancer has been confirmed by prospective studies in which the smoking habits of large numbers of men have been recorded and their deaths from various diseases observed subsequently. All these studies have shown that death rates from lung cancer increase steeply with increasing consumption of cigarettes. Heavy cigarette smokers may have thirty times the death rate of non-smokers. (Figure 8, p. 17). They have also shown

that cigarette smokers had lower death rates than those who had not smoked (Figure 9, p. 19) and that those who had given up smoking at the start of the surveys had lower death rates than those who had continued to smoke (Figure 10, p. 21). Various criticisms, based on possible errors of selection and of diagnosis, which might have caused a spurious association between smoking and lung cancer in these studies, are discussed (paras. 25-29).

Pathology of Smokers' Lungs. Of three types of lung cancer, only the two commoner types are associated with smoking. The lungs of smokers without cancer show changes of chronic irritation, of the sort which might precede cancer, more often than the lungs of non-smokers (paras. 30-31).

Interpretation of the Evidence. The association of lung cancer with cigarette smoking is generally agreed to be true but various possible explanations of this association other than that of cause and effect have to be considered. These are (para. 32):—

- (i) that people who are going to get lung cancer have an increased desire to smoke throughout their adult lives;
- (ii) that smoking produces cancer only in the lungs of people who are in any case going to get cancer somewhere in the body, so that smoking determines only the site of the cancer;
- (iii) that lung cancer affects people who would have died of tuberculosis in former times but have now survived with lungs susceptible to cancer;
- (iv) that smokers inherit their desire to smoke and with it inherit a susceptibility to some other undiscovered agent that causes lung cancer;
- (v) that smokers are by their nature more liable to many diseases, including lung cancer, than the "self-protective" minority of non-smokers;
- (vi) that smokers tend to drink more alcohol than non-smokers so that drinking and not smoking may cause lung cancer;
- (vii) that motor car exhausts, or—
- (viii) that generalised air pollution may render the lungs of smokers more liable to cancer.

None of these explanations fits all the facts as well as the obvious one that smoking is a cause of lung cancer. There are other causes, including air pollution and substances which may be met in a few

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smoking (para. 33).

There are a few facts which may be considered to conflict with this conclusion namely:—

- (i) that lung cancer occurs in only a minority of smokers;
- (ii) that death rates from this disease are lower in some countries than would be expected from their cigarette consumption;
- (iii) that there is some conflicting evidence on the effects of inhalation of smoke;
- (iv) that no animal has yet been given lung cancer by exposure to cigarette smoke.

Conclusion. These facts are discussed (paras. 33-40) and none of them is found to contradict the conclusion that cigarette smoking is an important cause of lung cancer. If the habit ceased, the number of deaths caused by this disease should fall steeply in the course of time (para. 41).

Smoking and Other Lung Diseases

Chronic bronchitis is a common and distressing disease in Britain and causes many deaths, especially in middle aged and elderly men. Smokers, particularly cigarette smokers, are much more often affected than non-smokers (Figure 31, p. 29). Other agents, of which generalised air pollution is the most important, are involved and it may be that damage done to the bronchial tubes by cigarette smoke makes them more susceptible to these other agents. Many men and women who are now disabled by chronic bronchitis might have remained well had they not smoked (paras. 42-50).

Smoking may possibly contribute to the development of pulmonary tuberculosis, especially in the middle-aged and elderly (paras. 51-52).

Smoking and Diseases of the Heart and Blood Vessels

Coronary heart disease is a more frequent cause of death in smokers, particularly cigarette smokers, than in non-smokers, although the latter are also commonly affected (Table III, p. 34). Those who give up smoking have a reduced death rate (Figure 12, p. 32). Many other factors, such as mental strain, sedentary occupation and diet, may explain some of the association of this

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to its serious effects (paras. 53-57).

Smoking appears to play a part in causing other arterial diseases but not high blood pressure (paras. 58-59).

Smoking and Gastro-Intestinal Diseases

Smoking affects the movements and secretion of the gut in many ways and may cause symptoms such as nausea and discomfort. It depresses appetite and may reduce weight. It does not appear to cause gastric or duodenal ulcers but interferes with their healing (paras. 60-65).

Cancers of the mouth, throat and gullet occur more frequently in smokers than in non-smokers (para. 66).

Smoking and Other Conditions

Several relatively uncommon diseases occur more often in smokers than non-smokers (paras. 67-69). Smokers may be more liable to accidents than non-smokers (para. 70). Women who smoke tend to have babies that are underweight (para. 71). Smoking may impair athletic performance (para. 72).

The Psychological Aspect of Smoking

Very little is known about why people smoke. Children tend to follow their parents' smoking habits. Intelligent children smoke less than duller children. Adults claim that smoking gives a sense of relaxation, helps them to concentrate and gives them relief when they are anxious, but these claims are difficult to test. Psychologists have suggested various unconscious motives for smoking (para. 73-78).

Smokers tend to be more restless, less dependable and more neurotic than non-smokers. Cigarette smokers are more extraverted than non-smokers, pipe smokers are more introverted. That the tendency to smoke may be partly inborn is shown by studies of the smoking habits of twins (para. 79).

Smokers may be addicted to nicotine. They may wish to stop smoking for a variety of reasons, chiefly because of expense or fear of ill health. It appears that social factors play a bigger part in

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80-83).

Conclusions

The benefits of smoking are almost entirely psychological and social. It may help some people to avoid obesity. There is no reason to suppose that smoking prevents neurosis (paras. 83-85).

Cigarette smoking is a cause of lung cancer, and bronchitis and probably contributes to the development of coronary heart disease and various other less common diseases. It delays healing of gastric and duodenal ulcers (paras. 86-89).

The risks of smoking to the individual are calculated from death rates in relation to smoking habits among British doctors (Table IV, p. 44). The chance of dying in the next ten years for a man aged 35 who is a heavy cigarette smoker is 1 in 23 whereas the risk for a non-smoker is only 1 in 90. Only 15 per cent (one in six) of men of this age who are non-smokers but 33 per cent (one in three) of heavy smokers will die before the age of 65. Not all this difference in expectation of life is attributable to smoking (paras. 90-91).

The number of deaths caused by diseases associated with smoking is large (Table V, p. 47) (para. 92).

The need for preventive measures. Reduction in general air pollution should reduce the risks of cigarette smoking; but it is necessary for the health of the people in Britain that any measures that are practicable and likely to produce beneficial changes in smoking habits shall be taken promptly (paras. 93-95).

Preventive Measures

Since it is not yet possible to identify those individuals who will be harmed by smoking, preventive measures must be generally applied (para. 96).

The harmful effects of cigarette smoking might be reduced by efficient filters, by using unfiltered tobacco, by leaving longer cigarette stubs or by changing from cigarette to pipe or cigar smoking (paras. 97-102).

General discouragement of smoking, particularly by young people, is necessary. More effort needs to be expended on dissuading the most effective means of dissuading children from starting the smoking habit (paras. 103-107). There can be no doubt of our responsibility for protecting future generations from

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spread today.

Most adults have heard of the risks of cigarette smoking but remain unconvinced. Doctors, who see the consequences of the habit, have reduced their cigarette consumption. Some evidence of concern by the Government is needed to convince the public. The Government have so far only asked local health authorities to carry out health education in respect of smoking, but little seems to have been achieved. The Central Council for Health Education and Local Authorities spent less than £5,000 on anti-smoking education in 1956-60, while the Tobacco Manufacturers spent £38,000,000 on advertising their goods during this period (*paras. 108-111*).

Feasible Action by the Government

Decisive steps should be taken by the Government to curb the present rising consumption of tobacco, and especially of cigarettes. This action could be taken along the following lines (*paras. 112-119*):—

- (i) more education of the public and especially school-children concerning the hazards of smoking;
- (ii) more effective restrictions on the sale of tobacco to children;
- (iii) restriction of tobacco advertising;
- (iv) wider restriction of smoking in public places;
- (v) an increase of tax on cigarettes, perhaps with adjustment of the tax on pipe and cigar tobacco;
- (vi) informing purchasers of the tar and nicotine content of the smoke of cigarettes;
- (vii) investigating the value of anti-smoking clinics to help those who find difficulty in giving up smoking.

Doctors and Their Patients

There are good medical grounds for advising patients with bronchitis, peptic ulcer or arterial diseases to stop smoking. Even a smoker's cough may be an indication that the habit should be given up. Doctors are better able to help their patients to stop smoking if they do not smoke themselves. They have a special responsibility for public education about the dangers of smoking (*paras. 120-121*).

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A Report of The Royal College of Physicians of London on Smoking in relation to Cancer of the Lung and Other Diseases

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Historical Perspective

Each of the last five Surgeons General of the U.S. Public Health Service (PHS) has identified cigarette smoking as one of this Nation's most significant sources of death and disease. Today, more than one of every six American deaths is the result of cigarette smoking. Smoking is responsible for an estimated 30 percent of all cancer deaths, including 87 percent of lung cancer, the leading cause of cancer mortality; 21 percent of deaths from coronary heart disease; 18 percent of stroke deaths; and 82 percent of deaths from chronic obstructive pulmonary disease. Other forms of tobacco use, including pipe and cigar smoking and use of smokeless tobacco, are also associated with significantly elevated risks of disease and death (US DHEW 1979a; US DHHS 1986b).

Although the health hazards of tobacco use have been suspected for almost 400 years, the first reported clinical impressions of a relationship between tobacco and disease date from the 18th century, when tobacco use was associated with lip cancer (US DHEW 1979a) and nasal cancer (US DHHS 1986b). However, true scientific understanding of the health effects of tobacco has been achieved only in the present century. Broders (1920) published an article in the *Journal of the American Medical Association* linking tobacco use to lip cancer, and 8 years later, Lombard and Doering (1928) published an article in the *New England Journal of Medicine* noting that heavy smoking was more common among cancer patients than among control groups. Later, Pearl (1938) observed in the journal *Science* that heavy smokers had a shorter life expectancy than nonsmokers.

During the 1930s, the Nation's increasing rate of lung cancer and other diseases prompted the initiation of epidemiologic and laboratory studies of the relationship between tobacco use and disease. In the late 1940s and early 1950s, a number of retrospective epidemiologic studies, published by Wynder and Graham (1950) and by other investigators, provided scientific evidence strongly linking smoking to lung cancer. This association was soon thereafter supported by the emerging early findings of major prospective (cohort) mortality studies, including the work of Doll and Hill (1954, 1956) in Great Britain and Hammond and Horn (1958a, 1958b) in the United States. The strength and consistency of these results, combined with evidence from laboratory and autopsy studies, led a national scientific study group to conclude in 1957 that the relationship between smoking and lung cancer was causal (Study Group on Smoking and Health 1957).

On July 12 of that year, U.S. Surgeon General Leroy Burney issued a statement declaring that "The Public Health Service feels the weight of the evidence is increasingly pointing in one direction: that excessive smoking is one of the causative factors in lung cancer" (US PHS 1964). Two years later, in 1959, Surgeon General Burney said that "The weight of evidence at present implicates smoking as the principal factor in the increased incidence of lung cancer" (Burney 1959).

Increases in chronic diseases in other parts of the world led health authorities in other countries to examine the relationship between tobacco and disease, particularly in Europe and Scandinavia. In 1957, the British Medical Research Council reported that a major part of the increase in lung cancer was attributable to smoking (British Medical Research Council 1957). Later, the Royal College of Physicians (1962) issued a

landmark document on smoking and health that concluded that "Cigarette smoking is the most likely cause of the recent world-wide increase in deaths from lung cancer . . . is an important predisposing cause of the development of chronic bronchitis . . . probably increases the risk of dying from coronary heart disease...has an adverse effect on healing of [gastric and duodenal] ulcers . . . [and] may be a contributing factor in cancer of the mouth, pharynx, oesophagus, and bladder."

On June 1, 1961, the presidents of the American Cancer Society, the American Public Health Association, the American Heart Association, and the National Tuberculosis Association (now the American Lung Association) urged President John F. Kennedy to establish a commission to study the health consequences of smoking. Representatives of these organizations met with Surgeon General Luther L. Terry in January 1962 to reiterate their call for action. In April, the Surgeon General presented a detailed proposal for an advisory group to reevaluate the position adopted by the Public Health Service in 1959. In calling for the advisory group, Dr. Terry cited new research on the adverse health effects of tobacco, a request from the Federal Trade Commission for guidance on policy regarding the labeling and advertising of tobacco products, and the findings in the new report of the Royal College of Physicians.

On July 27, 1962, following consultations between the White House and the Public Health Service, the Surgeon General held a meeting to define the work of an expert advisory group and to identify candidates for the committee. Meeting with the Surgeon General were representatives of the American Cancer Society, the American College of Chest Physicians, the American Heart Association, the American Medical Association, the Tobacco Institute, the Food and Drug Administration, the National Tuberculosis Association, the Federal Trade Commission, and the President's Office of Science and Technology. The group agreed on a list of more than 150 scientists and physicians. Each of the organizations had the right to veto any of the names on the list for any reason. Persons who had taken a public position on smoking and health were not considered for inclusion on the advisory committee.

Dr. Terry selected 10 individuals from the list to serve on the Surgeon General's Advisory Committee on Smoking and Health: Stanhope Bayne-Jones, M.D., LL.D., former Dean, Yale School of Medicine; Walter J. Burdette, M.D., Ph.D., University of Utah; William G. Cochrane, M.A., Harvard University; Emmanuel Farber, M.D., Ph.D., University of Pittsburgh; Louis F. Fieser, Ph.D., Harvard University; Jacob Furch, M.D., Columbia University; John B. Hickam, M.D., Indiana University; Charles LeMaistre, M.D., University of Texas; Leonard M. Schuman, M.D., University of Minnesota; and Maurice H. Seever, M.D., Ph.D., University of Michigan.

The Advisory Committee held nine meetings from November 1962 through December 1963, during which they reviewed all the available data from animal laboratory experiments, clinical and autopsy studies, and retrospective and prospective epidemiologic studies. The Committee had access to over 7,000 publications pertaining to smoking and health, including more than 3,000 articles reporting research findings published after 1950. In evaluating evidence linking smoking to disease, the Committee restricted judgments of a causal relationship to those associations for which the evidence was (1) consistent, (2) strong, (3) specific, (4) supportive of appropriate temporal relationships, and (5) coherent (US PHS 1964).

The final Report of the Advisory Committee was released on January 11, 1964 (US PHS 1964). It concluded that "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."

The Report also concluded that pipe smoking is causally related to lip cancer, that cigarette smoking is causally related to laryngeal cancer in men, and that "Cigarette smoking is the most important of the causes of chronic bronchitis." The Advisory Committee identified significant associations between smoking and cancer of the esophagus, cancer of the urinary bladder, coronary artery disease, emphysema, peptic ulcer disease, and low-birth-weight babies, but it did not consider the available data to be sufficient to label these associations causal.

The Committee found that male cigarette smokers had a 70-percent excess mortality rate over men who had never smoked and that female smokers also had an elevated mortality rate, although less than that of males. The Advisory Committee concluded that "Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action."

"Remedial action" was initiated immediately after publication of the Advisory Committee's Report, when the Federal Trade Commission (FTC) proposed that cigarette packs and advertisements bear warning labels and that strict limitations be placed on the content of cigarette advertising. With passage of the Federal Cigarette Labeling and Advertising Act of 1965 (Public Law 89-92; amended in April 1970 by Public Law 91-222), Congress preempted the FTC's recommendation: beginning in 1966, a congressionally mandated health warning appeared on all cigarette packs but not on advertisements.

The Act also required the Secretary of Health, Education, and Welfare to submit annual reports to Congress on the health consequences of smoking, together with legislative recommendations, beginning no later than mid-1967. New reports of the Surgeon General on smoking and health were issued in each calendar year beginning in 1967, except for 1970, 1976, 1977, and 1987. (In 1976, a volume of selected chapters from the 1971-75 Reports was published. The report issued in 1978 was a joint Report for the years 1977 and 1978.) Thus, the present volume, commemorating the 25th anniversary of the 1964 Report, is the 20th Report in the series. In addition, in 1986, PHS issued a report on the health consequences of using smokeless tobacco (US DHHS 1986b). Table 1 identifies the previous reports and highlights their coverage.

The reports published since the 1964 Report have confirmed the scientific judgment of the Advisory Committee and have extended its findings. The evidence available today has reinforced the Advisory Committee's judgments of causality: converted most of its "significant associations" into causal relationships, adhering to the strict criteria described in the first Report; confirmed causal associations for relationships not contemplated in the 1964 Report (e.g., the health hazards of involuntary smoking (US DHHS 1986a)); and identified additional disease associations.

Accompanying the growth and dissemination of scientific knowledge has been increased public understanding of the hazards of smoking, reflected in decreases in smok-

TABLE I.—Surgeon General's Reports on smoking and health, 1964–88

Year	Subject/Highlights
1964	First official report of the Federal Government on smoking and health. Concluded that "Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action." Concluded that cigarette smoking is a cause of lung cancer in men and a suspected cause of lung cancer in women. Identified many other causal relationships and smoking-disease associations (US PHS 1964).
1967	Confirmed and strengthened conclusions of 1964 Report. Stated that "The case for cigarette smoking as the principal cause of lung cancer is overwhelming." Found that evidence "strongly suggests that cigarette smoking can cause death from coronary heart disease." 1964 Report had described this relationship as an "association." Also concluded that "Cigarette smoking is the most important of the causes of chronic non-neoplastic bronchiopulmonary diseases in the United States." Identified measures of morbidity associated with smoking (US PHS 1968a).
1968	Updated information presented in 1967 Report. Estimated smoking-related loss of life expectancy among young men as 8 years for "heavy" smokers (over 2 packs per day) and 4 years for "light" smokers (less than 1/2 pack per day) (US PHS 1968b).
1969	Also supplemented 1967 Report. Confirmed association between maternal smoking and infant low birth weight. Identified evidence of increased incidence of prematurity, spontaneous abortion, stillbirth, and neonatal death (US PHS 1969).
1971	Reviewed entire field of smoking and health, with emphasis on most recent literature. Discussed new data indicating associations between smoking and peripheral vascular disease, atherosclerosis of the aorta and coronary arteries, increased incidence and severity of respiratory infections, and increased mortality from cerebrovascular disease and nonsyphilitic aortic aneurysm. Concluded that smoking is associated with cancers of the oral cavity and esophagus. Found that "Maternal smoking during pregnancy exerts a retarding influence on fetal growth" (US DHEW 1971).
1972	Examined evidence on immunological effects of tobacco and tobacco smoke, harmful constituents of tobacco smoke, and "public exposure to air pollution from tobacco smoke." Found tobacco and tobacco smoke antigenic in humans and animals; tobacco may impair protective mechanisms of immune system; nonsmokers' exposure to tobacco smoke may exacerbate allergic symptoms; carbon monoxide in smoke-filled rooms may harm health of persons with chronic lung or heart disease; tobacco smoke contains hundreds of compounds, several of which have been shown to act as carcinogens, tumor initiators, and tumor promoters. Identified carbon monoxide, nicotine, and tar as smoke constituents most likely to produce health hazards of smoking (US DHEW 1972).
1973	Presented evidence on health effects of smoking pipes, cigars, and "link" cigars. Found mortality rates of pipe and cigar smokers higher than those of nonsmokers but lower than those of cigarette smokers. Found that cigarette smoking impairs exercise performance in healthy young men. Presented additional evidence on smoking as risk factor in peripheral vascular disease and problems of pregnancy (US DHEW 1973).

TABLE 1.—Continued

Year	Subject/Highlights
1974	Tenth Anniversary Report. Reviewed and strengthened evidence on major hazards of smoking. Reviewed evidence on association between smoking and atherosclerotic brain infarction and on synergistic effect of smoking and asbestos exposure in causing lung cancer (US DHEW 1974).
1975	Updated information on health effects of involuntary (passive) smoking. Noted evidence linking parental smoking to bronchitis and pneumonia in children during the first year of life (US DHEW 1975).
1976 ^a	Compiled selected chapters from 1971-75 Reports (US DHEW 1976).
1977-78	Combined 2-year Report focused on smoking-related health problems unique to women. Cited studies showing that use of oral contraceptives potentiates harmful effects of smoking on the cardiovascular system (US DHEW 1978).
1979	Fifteenth Anniversary Report. Presented most comprehensive review of health effects of smoking ever published, and first Surgeon General's Report to carefully examine behavioral, pharmacologic, and social factors influencing smoking. Also first Report to consider role of adult and youth education in promoting nonsmoking. First Report to review health consequences of smokeless tobacco. Many new sections, including one identifying smoking as "one of the primary causes of drug interactions in humans" (US DHEW 1979a).
1980	Devoted to health consequences of smoking for women. Reviewed evidence that strengthened previous findings and permitted new ones. Noted projections that lung cancer would surpass breast cancer as leading cause of cancer mortality in women. Identified trend toward increased smoking by adolescent females (US DHHS 1980a).
1981	Examined health consequences of "the changing cigarette," i.e., lower tar and nicotine cigarettes. Concluded that lower yield cigarettes reduced risk of lung cancer but found no conclusive evidence that they reduced risk of cardiovascular disease, chronic obstructive pulmonary disease, and fecal damage. Noted possible risks from additives and their products of combustion. Discussed compensatory smoking behaviors that might reduce potential risk reductions of lower yield cigarettes. Emphasized that there is no safe cigarette and that any risk reduction associated with lower yield cigarettes would be small compared with benefits of quitting smoking (US DHHS 1981).
1982	Reviewed and extended understanding of the health consequences of smoking as a cause or contributory factor of numerous cancers. Included first Surgeon General's Report consideration of emerging epidemiologic evidence of increased lung cancer risk in nonsmoking wives of smoking husbands. Did not find evidence at that time sufficient to conclude that relationship was causal, but labeled it "a possible serious public health problem." Discussed potential for low-cost smoking cessation interventions (US DHHS 1982).
1983	Examined health consequences of smoking for cardiovascular disease. Concluded that cigarette smoking is one of three major independent causes of coronary heart disease (CHD) and, given its prevalence, "should be considered the most important of the known modifiable risk factors for CHD." Discussed relationships between smoking and other forms of cardiovascular disease (US DHHS 1983).

TABLE 1.—Continued

Year	Subject/Highlights
1964	Reviewed evidence on smoking and chronic obstructive lung disease (COLD). Concluded that smoking is the major cause of COLD, accounting for 80 to 90 percent of COLD deaths in the United States. Noted that COLD morbidity has greater social impact than COLD mortality because of extended disability periods of COLD victims (US DHHS 1964).
1965	Examined relationship between smoking and hazardous substances in the workplace. Found that for the majority of smokers, smoking is a greater cause of death and disability than their workplace environment. Risk of lung cancer from asbestos exposure characterized as multiplicative with smoking exposure. Observed special importance of smoking prevention among blue-collar workers because of their greater exposure to workplace hazards and their higher prevalence of smoking (US DHHS 1965).
1966	Focused on involuntary smoking, concluding that "Involuntary smoking is a cause of disease, including lung cancer, in healthy nonsmokers." Also found that, compared with children of nonsmokers, children of smokers have higher incidence of respiratory infections and symptoms and reduced rates of increase in lung function. Presented detailed examination of growth in restrictions on smoking in public places and workplaces. Concluded that simple separation of smokers and nonsmokers within same airspace reduces but does not eliminate exposure to environmental tobacco smoke (US DHHS 1966a).
1966 ^b	Special Report of advisory committee appointed by the Surgeon General to study the health consequences of smokeless tobacco. Concluded that use of smokeless tobacco can cause cancer in humans and can lead to nicotine addiction (US DHHS 1966b).
1968	Established nicotine as a highly addictive substance, comparable in its physiological and psychological properties to other addictive substances of abuse (US DHHS 1968).

^aExcluded from count of series volumes in text because no new evidence was reviewed.

^bExcluded from count of series volumes in text because it was a Special Report, not in the series of reports on smoking and health.

ing prevalence and, in recent years, the intensification of public and private measures to discourage smoking. A quarter century after publication of the first Report, smoking remains the leading cause of preventable premature death in our society, but per capita cigarette consumption is declining annually, and analyses of consumption and disease trends augur eventual decreases in smoking's toll.

Given these changes, the remaining toll of tobacco-related disease, and the Surgeon General's objective of a smoke-free society by the year 2000 (Koop 1984), Surgeon General C. Everett Koop devotes this 25th anniversary edition of the Surgeon General's Report to an assessment of progress against smoking in the quarter century since the first Report was published.

Highlights of Conclusions and Findings

Major Conclusions

As the present Report documents, knowledge of the health consequences of smoking has expanded dramatically since 1964, and programs and policies to combat the hazards of smoking have proliferated. The essential chapter-specific conclusions relating to these and other topics of this Report are presented at the end of each chapter and are reproduced in the final section of this introductory chapter. The major conclusions of the entire Report, immediately following, address fundamental developments over the past quarter century in smoking prevalence and in mortality caused by smoking. The first two conclusions highlight important gains in preventing smoking and smoking-related disease in the United States. The last three conclusions emphasize sources of continuing concern and remaining challenges.

1. The prevalence of smoking among adults decreased from 40 percent in 1965 to 29 percent in 1987. Nearly half of all living adults who ever smoked have quit.
2. Between 1964 and 1985, approximately three-quarters of a million smoking-related 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.
3. 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.
4. 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.
5. 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.

Key New Findings

While this Report is designed to provide a retrospective view of smoking and health over the past 25 years, several findings never previously documented in a report of the Surgeon General emerged during the process of reviewing and analyzing the voluminous materials consulted for the study. Discussed in detail throughout the Report, key new findings include the following:

- Cigarette smoking is a major cause of cerebrovascular disease (stroke), the third leading cause of death in the United States.
- By 1986, lung cancer caught up with breast cancer as the leading cause of cancer death in women. Women smokers' relative risk of lung cancer has increased by a factor of more than four since the early 1960s and is now comparable to the relative risk identified for men in that earlier period. Gender differences in smoking behavior are disappearing; consistent with this, gender differences in the relative risks of and mortality from smoking-related diseases are narrowing.
- Cigarette smoking is associated with cancer of the uterine cervix.
- To date, 43 chemicals in tobacco smoke have been determined to be carcinogenic.
- In 1985, approximately 390,000 deaths were attributable to cigarette smoking. This figure is greater than other recent estimates of smoking-attributable mortality, reflecting the use of higher relative risks of smoking-related diseases for women and, especially in the case of lung cancer, for men. These higher relative risks were derived from the largest and most recent prospective study of smoking and disease, conducted by the American Cancer Society.
- Disparities in smoking prevalence, quitting, and initiation between groups with the highest and lowest levels of educational attainment are substantial and have been increasing. Educational attainment appears to be the best single sociodemographic predictor of smoking.
- There is growing recognition that prevention and cessation interventions need to target specific populations with a high smoking prevalence or at high risk of smoking-related disease. These populations include minority groups, pregnant women, military personnel, high school dropouts, blue-collar workers, unemployed persons, and heavy smokers.
- One-quarter of high school seniors who have ever smoked had their first cigarette by sixth grade, one-half by eighth grade. Associated with knowledge of this fact is a growing consensus that smoking prevention education needs to begin in elementary school.
- Whereas past smoking control efforts targeting children and adolescents focused exclusively on prevention of smoking, the smoking control community has identified the need to develop cessation programs for children and adolescents addicted to nicotine.
- As of mid-1988, more than 320 local communities had adopted laws or regulations restricting smoking in public places. This compares with a total of about 90 as of the end of 1985, a more than threefold increase in 3 years. The number of new State laws restricting smoking in public places in 1987 exceeded the number passed in any preceding year.

- A growing body of evidence on the role of economic incentives in influencing health behavior has contributed to increased interest in and use of such incentives to discourage use of tobacco products. These include excise taxation of tobacco products, workplace financial incentives, and insurance premium differentials for smokers and nonsmokers.
- In marked contrast to the trends in virtually all other areas of smoking control policy, the number of legal restrictions on children's access to tobacco products has decreased over the past quarter century. Studies indicate that vendor compliance with minimum-age-of-purchase laws is the exception rather than the rule.
- The marketing of a variety of alternative nicotine delivery systems has heightened concern within the public health community about the future of nicotine addiction. The most prominent development in this regard was the 1983 test marketing by a major cigarette producer of a nicotine delivery device having the external appearance of a cigarette and being promoted as "the cleaner smoke."
- While over 50 million Americans continue to smoke, more than 90 million would be smoking in the absence of the changes in the smoking-and-health environment that have occurred since 1964.
- Quitting and noninitiation of smoking between 1964 and 1985, encouraged by changes in that environment, have been or will be associated with the postponement or avoidance of almost 3 million smoking-related deaths. That figure reflects the three-quarters of a million deaths noted in conclusion 2 above, and an additional 2.1 million deaths estimated to be postponed or avoided between 1986 and the year 2000.

Overview

Coverage of the Report

As the major conclusions and new findings suggest, progress against smoking is necessarily measured in several dimensions. Ultimately, the most important measure is the burden of mortality, morbidity, and disability associated with smoking. Secondly, changes in the prevalence of smoking and its distribution among sociodemographic groups foretell the future course of smoking-related disease. Behavioral changes in turn reflect a myriad of social and psychological influences that have evolved over the past 25 years. These include public knowledge of smoking hazards and attitudes toward the behavior; availability and effectiveness of smoking prevention and cessation programs; and adoption of smoking-related social policies, often reflections of public attitudes and opinions. At the heart of all these phenomena is the substantial and expanding body of scientific knowledge about the health consequences of smoking.

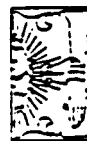
SMOKING AND THE YOUNG

FOR CHILDREN

FACTS

1. Nicotine is a drug of addiction. Many young smokers are addicted to nicotine and develop withdrawal symptoms on stopping.
2. Smoking is an important marker for other types of drug abuse, eg alcohol, cannabis, cocaine etc.
3. Young smokers have more respiratory infections with more time off work and school.
4. Teenage smokers have 2-6 times more cough and sputum than non-smokers.
5. Asthmatics who smoke have worse symptoms and lung function than non-smoking asthmatics.
6. The earlier children start smoking, the greater the risk of lung cancer.
7. Smoking is a cardiac stimulant, which magnifies the effect of stress on the heart.
8. Smokers are less fit as is shown by their being slower both at sprints and endurance running. The performance in a half marathon of a smoker of 20 cigarettes per day is that of a non-smoker 12 years older.
9. Smoking increases blood coagulability and adversely affects blood lipids.
10. Subarachnoid brain haemorrhage is six times more common in young smokers than non-smokers.
11. The earlier children start smoking, the younger they develop heart disease.
12. Smoking increases skin ageing and wrinkling.
13. Female smokers are 2-3 times more likely to be infertile.
14. Smoking affects immunity and has been associated with an increased risk of acquiring HIV-1 infection.

THE ROYAL COLLEGE
OF PHYSICIANS



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Chapters 1 and 2. However the effects of active smoking are considerably greater and most smokers begin the habit while they are under the age of sixteen. Coronary artery disease, lung cancer, chronic bronchitis and emphysema make up the most common serious complications of cigarette smoking. They are rarely seen as clinical problems before middle age. However, there is evidence that the problems begin soon after smoking is taken up and that the effects are increased by the length and intensity of exposure.

Nicotine as a drug of addiction

Mechanism and effect of addiction

Regular tobacco use is a form of drug addiction mediated through behavioural and pharmacological effects of nicotine.¹ Smoking is a form of systemic drug administration which delivers nicotine directly into the pulmonary circulation rather than the systemic or portal circulations. Nicotine reaches the brain about 10 seconds after inhalation, twice as fast as when given intravenously.² Smokers can manipulate the dose of nicotine on a puff-by-puff basis.³

Tobacco deprivation in smokers produces a syndrome of irritability, lack of concentration, cognitive impairment and weight gain which can be partially relieved by oral nicotine gum. However one symptom, the desire to smoke, is not reliably diminished by nicotine gum and there may be two reasons for this. First, the speed of delivery of a drug can affect the reinforcing efficacy (eg the inhaled form of cocaine, crack, is more reinforcing and dependence-producing than other forms of cocaine).⁴ Second, stimuli associated with a method of drug taking (eg taste and smell) may be important.⁵

The pattern of smoking is influenced by the pharmacodynamics of nicotine. Nicotine has a half-life of two hours and continues to accumulate for 6-8 hours after the commencement of regular smoking. The first cigarette produces a substantial pharmacological effect, but at the same time acute tolerance begins to build. With a succession of cigarettes, nicotine accumulates in the body, resulting in a greater degree of tolerance and subsequently, as nicotine levels fall, more intense withdrawal symptoms. Nicotine is almost totally eliminated from the body overnight allowing partial re-sensitisation to its action. The duration of time between cigarettes through the day may be determined as a time at which there is some regression of tolerance (so that the nicotine has a substantial acute effect) but before severe withdrawal symptoms occur.²

consumption; only 10% of regular adult smokers smoke less than six cigarettes per day. Approximately four out of five smokers would like to stop and two in every three smokers have made at least one serious attempt to do so.^{1,6}

Addiction in the young

The inhalation of cigarette smoke by young people leads to an early pharmacological dependence on cigarettes and many children underestimate the addictive nature of smoking. Saliva cotinine concentrations in 11-16 year old smokers have been measured to examine the extent of tobacco smoke inhalation. Cotinine concentrations among young regular daily smokers indicated that they were already inhaling substantial doses of nicotine which were likely to be having some pharmacological effects. Comparisons with adult smokers suggested that they were inhaling a similar dose of nicotine per cigarette. This means that from a very early stage nicotine can play an active role in reinforcing smoking.^{7,8}

The majority of these young smokers reported subjective effects of smoking (ie smoking gave them a 'buzz'), that they had made attempts to stop, and that they suffered withdrawal symptoms during abstinence which were related to self-reports of cigarette consumption, depth of inhalation and measures of nicotine intake.^{9,10} In one study, in spite of being counselled about their smoking behaviour, 97% of the daily smokers were still smoking two years later.¹¹ These findings point to an early development of dependence on cigarettes.

Cigarette smoking and other drug abuse

The health risks for young smokers go beyond the impact of smoking itself as their smoking forms just one part of a lifestyle which contains multiple health risks. Alcohol consumption is related to smoking: 49% of 11-15-year-old regular smokers have a drink at least once a week, compared to only 6% of non-smokers from the same age group. Experimentation with illegal drugs is widespread amongst older smokers. Only 2% of 11-15-year-old non-smokers have ever tried drugs such as cannabis, LSD, heroin, cocaine or crack; this compares with 18% of occasional smokers and 50% of regular smokers of the same age.¹² It has long been considered that smoking is a precursor or gateway drug, but

Respiratory disease is increased in young smokers

The symptoms associated with chronic respiratory disease become more common within a year or two of taking up smoking. Many studies of teenagers have shown that this is true for the common respiratory symptoms: cough, sputum production and shortness of breath. The results of studies of lung function have not been so clear although significant abnormalities have been found in young smokers. It is perhaps not surprising that the lung function results are less clear than the evidence on symptoms. Although most chronic heavy smokers develop respiratory symptoms, only a minority will develop significant problems with chronic airflow obstruction.

Asthma

In asthma the airways show increased responsiveness, reacting adversely to numerous provoking factors such as inhaled irritants. Both passive¹⁵ and active smoking are capable of producing problems in asthma.

Among teenagers, smoking increases problems from asthma¹⁶ and the respiratory function abnormalities associated with smoking are more marked in asthmatics.¹⁵ One study of 11-16-year-olds showed that asthma was more common among children who smoked¹⁶ but that the onset of the asthma symptoms preceded the start of smoking. It is unlikely that asthmatics are more inclined to take up smoking; a more likely explanation is that smoking increases the chances that asthma symptoms will persist.

An Australian study of asthma,¹⁷ starting with children below the age of 7 years, has shown that by the age of 21 years the progress of asthma is less satisfactory in smokers. The number of cigarettes smoked in the intervening period and the current consumption are both related to poor asthma control.

Respiratory tract infections

Investigations of rates of respiratory tract infections in smoking and non-smoking children have produced variable results. Where recall of previous events is relied on, rates have been increased slightly or not at all,¹⁸ but studies which recorded events prospectively are likely to be

A study in Sydney, Australia using annual questionnaires, reported more episodes of acute bronchitis in smoking children, especially in girls.¹⁵ In 94 student nurses, half of whom were smokers, respiratory tract infections were more common and lasted longer in smokers, leading to an average extra 2-3 days absence over a year.²⁰ In 2,385 12-13-year-olds followed for four months, minor ailments and time off school were greater in smokers.²¹ An early study of 14-19-year-olds at boarding school used infirmary records to show that all types of respiratory illness were greater in smokers²² and this was most evident for severe lower respiratory tract infections. However, not all studies are consistent. Kujala's study of over 1,000 20-year-old conscripts, which found a five-fold increase in cough and a decline in lung function, showed no evidence of increased respiratory infections in the records of smokers.²³

Overall, reliably recorded retrospective and prospective studies do show higher rates of respiratory infections in young smokers leading to more time off school and work. A reduction in smoking would produce a substantial fall in general practitioner workload, since respiratory tract infections form a major part of the family doctor's practice.

Cough, sputum and shortness of breath

There are a large number of studies in the young which compare common respiratory symptoms between smokers and non-smokers. Most of the work is in teenagers but information on the direct effect of smoking is available down to the age of ten years. All the studies show that smoking increases symptoms even at this age when length of exposure has been short. Wheezing is a characteristic feature of asthma but seems to have a wider distribution related to other symptoms such as cough and sputum production and with a positive association with smoking.

In the 10-12-year age group, two studies in the 1970s from Beverly et al.^{24,25} showed a doubling of the prevalence of respiratory symptoms amongst those who smoked even though their definition of smoker was just one cigarette or more weekly. One of these studies²⁴ separated an urban-rural effect on symptoms but the effects of cigarette smoking were independent of the excess in respiratory symptoms related to living in an urban area.

Various reports provide information on more than 50,000 subjects in the 10-20-year age range. Five large studies contribute 40,000 subjects.^{19,24,26-28} Nearly every report has been able to demonstrate in-

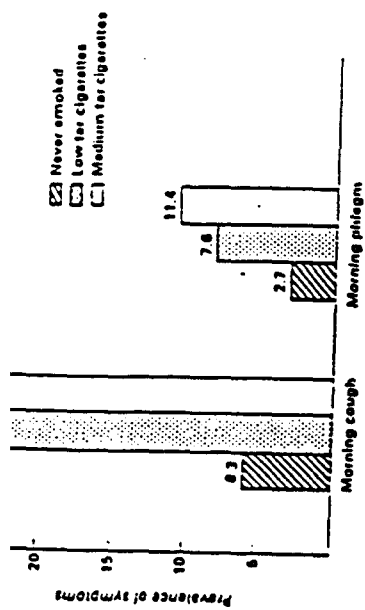


Fig. 3.1 Prevalence of respiratory symptoms in 16-18 year olds according to smoking habits (Adapted from: Rimpela AH, Rimpela MK, *Br Med J* 1985; 290: 1161).

creases in the rates of cough, sputum, wheeze and shortness of breath, usually an increase between two and six times the non-smoking rate (Fig. 3.1). The definitions used for smokers have varied from more than one cigarette per week to more than 9 cigarettes per day. Other factors are associated with respiratory symptoms throughout childhood but by the age of 20 years the most important cause of such symptoms is smoking.¹⁴

Most studies have looked at the amount smoked and the length of smoking history but few have detailed the type of cigarette smoked. However, in one study of 5,000 16-18-year-olds¹⁵ symptoms were increased to a similar extent by low or middle tar cigarettes.

The prevalence of symptoms does increase with the amount smoked both in terms of the number of cigarettes smoked each day and the length of the smoking history.^{14,19} However, even small numbers of cigarettes smoked regularly produce symptoms in fairly short times; certainly one year is long enough to create problems.^{15,16}

Little information is available on the effects of stopping smoking on symptoms in this age group. Since gross changes in lung function have not occurred, on stopping smoking one would expect a major reduction in the symptom of breathlessness over time. Cough and sputum production in adults decline on stopping, and this would seem to be even more likely in children and adolescents where smoke exposure has been

Lung function

Each inhalation of cigarette smoke provides a temporary bronchoconstriction, usually mild and lasting less than a minute in smokers and non-smokers at all ages.¹¹ In some subjects more prolonged airway narrowing occurs on smoking and with time lung damage may become irreversible.

Many different tests of lung function have been performed in the assessment of smoking effects in the young. Broadly, they can be divided into conventional spirometric measures of FEV₁ and FVC, or more sophisticated tests designed to look at early evidence of disease, particularly those related to the small airways of the lung. These have included maximum expired flows at low lung volumes and tests of abnormalities of distribution on ventilation such as closing volume. Most of these investigations have shown abnormal lung function associated with smoking in 12-20-year-olds, which is probably present by the age of 14 years in smokers. The interpretation of tests of lung function is complicated by the growth expected in teenage children. However, the consistency of the findings indicates the strength of the relationship between smoking and lung function.

As with respiratory symptoms, definitions of smoking in lung function studies have varied from more than one cigarette per week to more than ten per day. There is again evidence of a dose effect based on the number of cigarettes smoked each day.^{11,13} Differences in starting levels of lung function in young smokers and non-smokers may be related to differences in maturity and to social factors determining who takes up smoking, eg the more mature children in a given age group may be more likely to smoke. One study¹¹ has found that children who take up smoking seem to start with higher baseline levels of lung function but that five years of smoking bring their lung function levels down to that of the non-smoking group. Other estimates are that smoking from the age of 15 years will lead to a reduction of FEV₁ by the age of 20 to 9% of the expected level, and a reduction of FEF₂₅₋₇₅ to just 99% of the predicted value.¹¹ A recent study¹⁶ followed a group of 15-18-year-olds over 8 years. The effect of smoking on FEV₁ decline was again dose related. Overall one pack per day led to a drop of 8.4 ml per year, 65 ml over the 8-year study. In addition, smoking which had taken place before the study seemed to have a slight continuing effect over the 8 years.

*FEV₁ (forced expiratory volume in one second) is a measure of airway function. FVC (forced vital capacity) measures the total volume exhaled from the lungs.

Physiological changes found in young smokers might be just a marker of cigarette smoking or the beginning of a more serious decline in function which will continue for a minority as long as they continue to smoke. Many of the studies in children have been cross-sectional studies which show differences between smoking and non-smoking groups but are limited by the lack of knowledge of starting levels and progression. One small study³⁴ found abnormalities in airflow at low lung volumes in 20% of young smokers. Corin *et al.*³⁵ followed up a small group of smokers, ex-smokers and non-smokers over four years and found progression of lung function abnormalities in the smokers. This applied to flow at low lung volumes, increased compliance, increased total lung capacity and residual volume but not $F\dot{I}:V_1$ and flow at 50% of vital capacity (V_{50}).³⁶ Other larger longitudinal studies have shown decline in $F\dot{I}:V_1$.³⁷

The single breath nitrogen test is an assessment of the evenness of gas distribution in the lung. Evidence from adults suggests that most of those subjects who will show a rapid decline in $F\dot{I}:V_1$ in relation to their smoking have abnormalities in the single breath nitrogen test when $F\dot{I}:V_1$ is still normal.³⁸ However, abnormalities in the single breath test were often found in those whose $F\dot{I}:V_1$ did not decline excessively fast over the next 10 years so that this test is not sufficiently specific to act as an early warning of future problems. Studies of susceptibility to lung function changes^{39,40} have suggested that respiratory symptoms are markers for a faster decline in lung function. This has not been consistent in all studies³⁵ and these interrelationships are difficult. Symptoms may indicate an underlying susceptibility or may be induced by smoking in parallel with lung function decline. Personal smoking and symptoms have a greater effect than parental smoking.³⁵

In general, the tests of lung function can be divided into sophisticated tests of gas distribution and simpler tests which reflect lung volumes and airway narrowing. There is evidence from cross-sectional reports over a wide range from teens to sixties that abnormalities in tests of gas distribution (such as closing capacity and the slopes of Phase 3 of the 'volar washout) do not progress much with age⁴¹ and may return to normal on stopping smoking.⁴² In contrast, the indicators of airway narrowing and lung volume, such as $F\dot{I}:V_1$, FVC and V_{max50} , become progressively abnormal with length of smoking history, starting from teenage years^{35,39,41,43,44} and do not return to normal on stopping smoking. Therefore, changes found solely in gas distribution tests can be reversible markers of the smoking habit, whereas decline in $F\dot{I}:V_1$ indicates permanent lung damage which begins soon after children begin to smoke.

Early studies of alveolar lavage using fiberoptic bronchoscopy found marked changes in the lavage fluid from smokers.⁴⁵ Thus, the lung washes cells from the alveoli and the small airways of the lungs. About 90% of the cells, mainly macrophages and neutrophils, come from the lungs, and the rest from the bronchi. These cells are probably recruited as part of the body's defence against the inhalation of cigarette smoke and it is likely that some of the cells may be related to the development of lung damage. These cellular changes in the lavage fluid are found in young asymptomatic smokers.

Smoking for more than one year results in a decrease in the mucociliary clearance of the lungs,⁴⁶ the mechanism by which the small airways clear themselves of secretions and inhaled particles. Niewoehner *et al.*⁴⁷ examined lung histology in 20 non-smokers and 19 smokers who had died suddenly outside hospital at an average age of 25 years. The smokers all showed evidence of inflammatory changes in their small airways while such changes were rare in non-smokers. These morphological changes show the early effects of cigarette smoke related damage and probably correspond to the minor lung function changes which are seen in young smokers. No data are available on histological damage in even younger groups of smokers.

Lung cancer is the commonest malignant cause of death in most developed countries and cigarette smoking accounts for most of this mortality. Such cancers are rare under the age of 30 years but smoking in childhood provides the potential for future trouble. The risk of lung cancer is related to the length of time of smoking and not just to the total exposure, so 20 cigarettes per day for 30 years produces a greater risk than 40 cigarettes daily for 15 years.⁴⁸ Those who start before the age of 20 are at considerably greater risk than those who start later.

Adverse cardiovascular effects in young smokers

Acute physical effects of smoking cigarettes

Smoking a cigarette causes immediate effects on the body. Heart rate increases within one minute of starting smoking and may increase by up to 30% in the first 10 minutes. Peripheral vasoconstriction and changes in regional blood flow occur and as a consequence blood pressure also increases acutely by 7-10%.⁴⁹ Abstinence from regular smoking for 24 hours causes a reduction in resting heart rate of about 10 beats per minute but the first cigarette smoked after this period causes an immediate increase.³⁰ After the first cigarette no further increase in

related to the amount of nicotine in the cigarette.⁵¹ Thus, it seems likely that the changes in heart rate and blood pressure are caused by the effects of nicotine absorbed from cigarette smoke which is known to cause stimulation and then paralysis of the autonomic ganglia. Carbon monoxide in cigarette smoke may also be responsible for some of these effects.

In parallel with the increase in heart rate that occurs following smoking, changes in intracardiac conduction have been found. An electrophysiological study showed that atrio-ventricular conduction time was significantly shortened by cigarette smoking, but intra-atrial, intra-ventricular and His bundle-turkinje conduction times were unaltered.⁵² These changes reflect the sympathomimetic effect of inhaled nicotine. Changes in intracardiac conduction may provide arrhythmias even in people without heart disease, but a large study of fit American policemen⁵³ showed no difference in ventricular ectopic beats precipitated by exercise in smokers and non-smokers. However, in patients with acute myocardial infarction, smoking was associated with increased frequency of ectopic beats.⁵⁴ In patients with chronic stable angina or a previous history of myocardial infarction smoking was actually associated with a fall in ectopic frequency—but most patients in this study were taking drugs with anti-arrhythmic properties.⁵⁵

Smoking increases the physical effects of stress on the body and does not, as commonly supposed, cause the smoker to relax. Studies using video games as psychological stressors have shown that this stress causes an increase in heart rate of about 12 beats per minute and in systolic blood pressure of about 15 mmHg in males and 7 beats per minute and 5 mmHg in females. Smoking during these activities causes a further increase in these parameters with an increase in heart rate for both sexes to about 30 beats per minute and systolic blood pressure of about 20 mmHg.⁵⁶ The pattern of cardiovascular response differs between the sexes: in young women, smoking causes an increase in heart rate and systolic blood pressure but in men the increase is greater for systolic blood pressure. This is not explained simply by differences in body size.⁵⁷ Other factors may influence the cardiovascular response. In a study comparing physical stress in young women, using the cold pressor test where a hand is immersed in a bucket of iced water (5°C) for one minute, with mental stress, using a mental arithmetic test under time pressure for 1.5 minutes, smokers who were concomitantly taking the oral contraceptive pill had exaggerated responses to mental but not physical stress⁵⁸ compared with smokers who were not taking the oral

study in monozygotic twins, indicating an smoking effect. However, the density of β -adrenergic receptors on lymphocytes was 40% lower, although the total circulating plasma catecholamine levels were higher in smokers by nearly 75%.⁵⁹

Smoking and physical fitness

Smokers are less fit than non-smokers. In a large study of young army recruits, smokers were twice as likely to fail to complete basic training compared with non-smokers.⁶⁰ In studies of endurance exercise, smokers reach exhaustion earlier than non-smokers and derive less benefit from training.⁶¹ In one study of 6,500 19-year-old army conscripts, smokers ran a significantly shorter distance in 12 minutes compared with non-smokers, and the more cigarettes smoked per day and the longer the duration of smoking the shorter the distance run

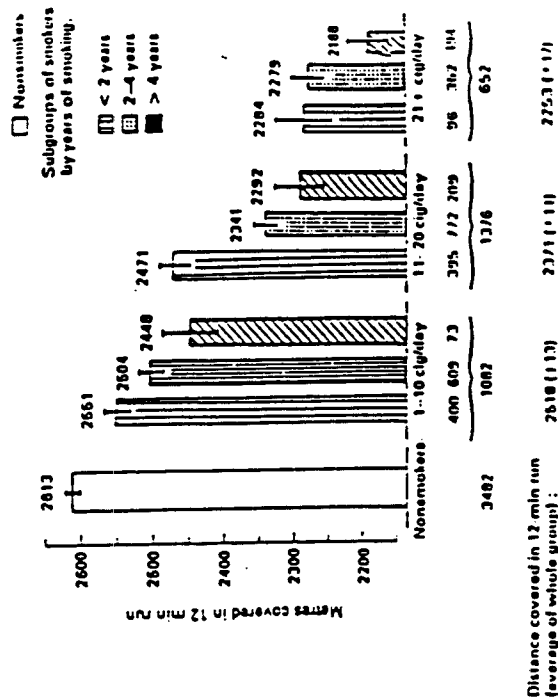


Fig. 3.2 Performance in 12-min run among 6,502 Swiss 19 year old military conscripts according to number of cigarettes smoked and years of smoking (from Martin H, Abelin T, Minder C, *New Med* 1988; 17: 79).

Fig. 3.2). The same non-smoking recruits ran an 80 metre sprint in a significantly shorter time than smokers.⁶² In the same study, 100 regular joggers who took part in a yearly 16 km race, smokers... were consistently slower. It was estimated that for every cigarette smoked per day the time to complete the run was increased by 40 seconds. The authors suggested that smoking 20 cigarettes a day increased the time taken to run the 16 km by the equivalent of 12 age-years or destroys the performance enhancing effect of running 20 km per week.⁶⁷

How does smoking cause these effects? Regular smokers have an increased amount of carboxyhaemoglobin in their blood, thus reducing oxygen carrying capacity and shifting the oxyhaemoglobin dissociation curve to the left. Klausen *et al.*⁶⁵ showed that smoking three cigarettes before exercise reduced the duration of exercise by 20%, but inhaling carbon monoxide before exercise in doses equivalent to those obtained from smoking decreased exercise duration only by 10%. Thus, the effects of smoking are not all explained by the increase in carboxyhaemoglobin. Chronic sympathetic stimulation caused by smoking increases resting heart rate and basal metabolic rate and offsets the advantages of endurance training which causes a reduction of resting heart rate.

Other studies have shown that short-term exercise is also affected by smoking. Regular smokers are twice as likely to discontinue exercise (admitt test) because of symptoms of exhaustion, fatigue, breathlessness, and leg pain than non-smokers.⁶⁶ These disadvantages are directly related to the duration of smoking and the number of cigarettes smoked.⁶²⁻⁶⁵

clotting factors

Smoking causes activation of platelets making them more likely to adhere to vessel walls.⁶⁸⁻⁶⁹ Thromboxane production from platelets which promotes the formation of blood clots is increased after smoking.⁶⁹⁻⁷¹ and prostacyclin, its natural antagonist, derived from endothelial cells, has been shown to be reduced in one study.⁷² Nicotine, when infused into isolated arteries, causes a reduction in prostacyclin production from the vessel wall.⁷³ Fibrinolysis has also been shown to be stimulated by smoking.^{74,75} Chronic smoking has been consistently associated with elevated plasma fibrinogen levels and increased blood viscosity.⁷⁶⁻⁸⁰ Stopping smoking causes a fall in these parameters within two weeks.⁸¹⁻⁸³

All these changes in the blood make it more likely to clot; in consequence, smoking is strongly associated with occlusive vascular disease affecting the coronary, cerebral and peripheral arteries.

Blood lipid

Smoking also causes adverse effects on blood lipids. Following a fatty meal serum triglycerides are significantly higher in smokers than non-smokers and HDL cholesterol (which has a beneficial effect) lower.⁸⁴ A recent overview⁸⁵ of all the published data on smoking and lipids showed that on average smoking increases blood cholesterol by 10%, triglycerides by 9.1% and lowers HDL cholesterol by 5.7%. There is evidence for a dose-response curve, so that the more cigarettes smoked the greater the changes in the lipids. Moreover, when cigarette smoking is given up, the lipid profile returns quickly towards normal, certainly within 30 days.

Many epidemiological studies have shown a clear-cut relationship between total blood cholesterol and the risk of developing coronary artery disease. It has been estimated that for every 1% increase in total cholesterol the risk of death from coronary artery disease increases by 2%.⁸⁶ It has also been shown that high levels of HDL cholesterol are associated with a lower risk of coronary heart disease. Since smoking causes an increase in total cholesterol but a fall in HDL cholesterol these changes clearly increase the risk of coronary artery disease.

Pathogenesis of vascular disease in smokers

The degenerative process by which arteries thicken and narrow by the deposition of lipid rich deposits (atherosclerosis) increases with age. These deposits occur particularly at sites where arteries branch and cause gradual narrowing of the lumen but remain below the endothelium. If the endothelium splits over the site of an atherosclerotic deposit, the underlying lipid is exposed to the circulating blood and attracts platelets. Once platelets adhere to the vessel wall a thrombus quickly forms which comprises strands of fibrin and cells. The artery is rapidly occluded, cutting off the blood flow to the organ it is supplying. Should this happen in a coronary artery, myocardial ischaemia results and eventually tissue necrosis and infarction. About 90% of myocardial infarctions are caused by a thrombus blocking an artery, often at the site of an atherosclerotic deposit.⁸⁷ However, in 70% of cases the deposit is not large and by itself would not cause a severe stenosis. Thus, dissolution of the clot by activating the fibrinolytic mechanism by drugs can be markedly effective in improving prognosis following an infarct.⁸⁸ Similarly, drugs which make platelets less sticky and therefore less likely to adhere to the vessel wall also reduce coronary events.⁸⁹ By comparison, smoking promotes clotting in the blood and thereby increases the risk of heart attacks.

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men in the ages of 20 and 40 years who are heavy cigarette smokers. The disease is more common in Israel, Japan and India and certain genetic predispositions have been identified by blood group typing (HLA-A9; HLA-B5). The peripheral arteries and veins in the limbs are inflamed and damaged resulting in blockage by thrombus formation leading to tissue ischaemia often with ulcer development. The association with smoking is so strong that abstinence can lead to resolution of the lesions. However, if patients continue to smoke, amputation is inevitable.

Overall cardiovascular health risk

Smoking cigarettes has been shown to be the major cause of coronary artery disease and it has been estimated to be responsible for 13.2% of the deaths (US Surgeon General) from coronary artery disease.^{100,101}

Other adverse effects of smoking in young people

Smoking is associated with a large number of medical problems. Apart from bronchogenic carcinoma, tumours of the larynx, pharynx, mouth, oesophagus, pancreas, kidney and bladder are more common in smokers.

Oral lesions such as leukoplakia and depigmented lip patches are more common in young smokers.¹⁰² Smoking produces premature facial wrinkling,¹⁰³ female smokers are two to three times more likely to be infertile,¹⁰⁴ fitness levels are lower and exercise tolerance is reduced in young people who smoke.

Smoking alters immunity.¹⁰⁵ Recent data suggest that smokers are more likely to become infected by HIV (even after other risk-taking behaviours have been accounted for)¹⁰⁶ and HIV-positive smokers progress to AIDS more quickly than HIV-positive non-smokers.¹⁰⁷

Conclusions

Addiction

Many childhood smokers are pharmacologically dependent on cigarettes (ie are addicted) and stopping smoking is associated with withdrawal symptoms. Smoking in children is associated with other forms of drug abuse, including alcohol.

Myocardial infarction is not just a problem for the elderly but can occur in people less than 40 years old. When it does so, all published studies have shown a very strong link with smoking cigarettes.⁷⁰⁻⁷⁴ In all studies smoking was the dominant risk factor occurring in 66-90% of subjects with other risk factors like hypertension (11-33%) and hypercholesterolaemia (21-49%) occurring in far fewer patients. In smokers with coronary artery disease, quitting reduces mortality and complications within twelve months and is further evidence for the pathogenic effect of smoking.⁷⁵⁻⁷⁷

Stroke

When a cerebral artery is occluded by thrombus, permanent damage occurs resulting in a stroke usually causing weakness of one side of the body. Ischaemic stroke in young people (less than 45 years of age) has also been shown to be associated with smoking, with at least a doubling of the risk.^{78,79} Stopping smoking reduces this risk by the end of two years and by the end of five years the risk is the same as in non-smokers.⁸⁰

Subarachnoid haemorrhage from ruptured cerebral aneurysms has been shown to occur up to six times more frequently in smokers^{101,102} compared with non-smokers. There is also an interaction in women between smoking and the use of oral contraceptives so that the two factors combined increase the likelihood of subarachnoid haemorrhage by up to 22 times.^{102,103}

Peripheral vascular disease

Narrowing of the arteries in the legs reduces blood flow to the exercising muscles and causes pain in the legs on walking (claudication). If the narrowing progresses gangrene of the foot and toes can occur. This form of arterial disease occurs virtually exclusively in smokers (>90%)¹⁰⁴ with a nine-fold increase in risk of claudication in smokers of more than 15 cigarettes per day. Arterial reconstruction surgery using veins to bypass blockages can be effective but continued smoking causes the grafts to block sooner.^{106,107} Three-year survival in patients with peripheral vascular disease is significantly reduced in heavy smokers (>15 cigarettes a day) compared with moderate smokers (<15 cigarettes a day) with a 10-fold increase in the need for amputation.¹⁰⁸ Thromboangiitis obliterans (Buerger's disease)¹⁰⁹ is a rare form of peripheral vessel arteritis which is almost entirely confined to young

..... to health

- Diseases in many body systems are associated with cigarette smoking. Most of these conditions appear in adulthood and many of them are related to a cumulative risk from cigarette smoking. It would be expected that smoking, whenever it begins, will contribute to the risk. Since the length of smoking exposure is an important factor, those who start smoking in childhood strikingly increase the risk of future problems.

Respiratory disease

- It is remarkable that abnormalities in respiratory symptoms and in lung function can be detected so early on and with such comparatively light exposure. This shows clearly the potency of the damaging agent. Children who smoke have evidence of current disease as well as a store of problems for the future if they continue to smoke.
- Reductions in respiratory infections which would follow a reduction in smoking would have a major immediate impact on general practitioner workload. The earlier that children start smoking the greater the risk of lung cancer.

Cardiovascular disease

- Smoking cigarettes has an immediate stimulating effect on the cardiovascular system which is associated with a reduction in cardiorespiratory fitness. The main effects on health, however, occur later in life, and the earlier children start smoking the greater the risk of occlusive arterial disease causing stroke, myocardial infarction and peripheral vascular disease. These diseases remain the largest cause of mortality in the United Kingdom.

Premature aging and infertility

- Active smoking has a variety of other adverse effects on the health of young people, including premature facial wrinkling, infertility and susceptibility to HIV infection and AIDS.



Prevalence and development of smoking in young people

FACTS

1. In Great Britain 450 children start smoking every day.
2. One-quarter of UK school leavers aged 15 years smoke regularly, ie at a time when it is illegal to sell them cigarettes. A little change has occurred in the last decade. Present data suggest more girls than boys now smoke.
3. By the age of 11 years one-third of children, and by 16 years two-thirds of children have experimented with smoking.
4. Most adult smokers started regular smoking before the age of 18 years.
5. The high prevalence of regular smoking in young people and the lack of any significant decline in the last decade is alarming.

Prevalence of smoking

Prevalence in the UK

Since 1982, national surveys have been carried out by the Office of Population Censuses and Surveys to determine the prevalence of smoking (ie the proportion of the cohort that are current smokers) among secondary school pupils aged 11 to 16 years.¹ Smoking varies from region to region,² and also varies between schools within regions.¹⁻³ The five completed national surveys up to 1990 showed little change in the prevalence of regular smoking since 1982, with as many boys as girls smoking in England (Fig. 4.1). A similar pattern has been observed in Scotland and Wales. In Wales, however, in 1990, significantly more girls overall (11%) than boys (8%) were regular smokers in the 11-16-year age range,¹ and this is also now true for young adult females. There are approximately 650,000 children in each annual cohort in Great Britain, and statistics of onset indicate that approximately 450 children start smoking every day. Regular smoking in

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W O M E N A N D T O B A C C O



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Tobacco is a unique consumer product because of the number of deaths and diseases to which it is directly linked as a causal factor. The effects of tobacco consumption have been extensively documented for developed countries and to a lesser extent for developing countries. It is now clear that smoking-related diseases have become "equal opportunity" diseases, affecting women and men in similar ways, if they have similar exposure to tobacco and smoking behaviour. Furthermore, women have additional specific risks related to reproduction. Smoking also contributes to poverty and malnutrition.

Constituents of tobacco

The different ways in which tobacco is used have been examined in Chapter 2. The biological and health effects of tobacco consumption, including dependence, are caused by its various constituents.

Constituents of tobacco smoke

When a cigarette is smoked, a large number of chemical compounds are formed at the burning end, which are either inhaled through the cigarette as mainstream smoke, or are emitted into the air as sidestream smoke.

¹ Information and data presented in this chapter are based on many published studies (see references on pp. 19) (24), and on unpublished evidence available to the International Agency for Research on Cancer and the World Health Organization.

phase, composed of liquid droplets, dispersed as/vapour phase. It contains a large variety of compounds, some 4000 of which have been identified and many have been quantified. Many of the major classes of organic chemical compounds are represented; these compounds could also be classed by their effects on the body tissues, as chemical asphyxiants, irritants, ciliastatic compounds, carcinogens, cocarcinogens or pharmacologically active compounds; some have several effects.

The aerosol particles in mainstream smoke vary in size from 0.15 μm to 1.3 μm , with a mean value of 0.4 μm . In sidestream smoke the particles are smaller, varying from 0.01 μm to 0.1 μm . Thus, the particles, the vapour phase constituents and the permanent gases can all reach the alveoli when inhaled and, indeed, it has been shown that smoke reaches every part of the trachea, bronchi and lungs and smoke constituents have been found to have been phagocytosed by alveolar macrophages.

Cancers of the trachea, bronchus and lung are caused by the deposition of carcinogens in these tissues. Some carcinogens are absorbed by the lungs and transported to other parts of the body, where they initiate cancer in other tissues.

Various diseases, grouped under the collective title of chronic obstructive pulmonary disease (COPD), arise from the smoke constituents which cause ciliastasis, produce hypersecretion and changes in the chemical structure and physical nature of mucus, irritate the bronchi and bronchioles, and cause inflammation of the membranous bronchioles.

The cardiovascular and cerebrovascular diseases are caused by the many smoke constituents that pass through the lungs and dissolve in the blood, affecting the haemoglobin, platelets, vascular tissues and heart rate.

Constituents of smokeless tobacco

At least 2500 chemical constituents of unburnt tobacco have been identified. These include, in addition to compounds derived from the tobacco itself, many substances that are added to the tobacco during cultivation, harvesting and processing. Many of the major classes of organic chemical compounds are represented and among these are many with biological activity detrimental to health, such as irritants, carcinogens and psychoactive substances, the principal representative of the latter being nicotine.

Nicotine, an alkaloid, is a constituent of all tobacco products and is fundamentally the reason why people use tobacco: nicotine-free tobacco does not satisfy the needs of those who are dependent on tobacco.

Alkaloids are a group of chemical compounds of plant origin, many of which have long been used by people for their medicinal properties, their psychoactive effects and as poisons. Most alkaloids are poisonous at high concentrations and nicotine is no exception; at high exposure levels it is a potent and lethal poison.

Alkaloids are by definition alkali-like and nicotine can exist as the free base or as a salt. When tobacco is combined with lime for chewing, as in south-east Asia, the nicotine is released from the tobacco as the free base, and absorbed in the mouth. Smoke from pipes and cigars also contains nicotine as the free base which is absorbed in the mouth and nose. The smoke from other nicotine-delivery devices, particularly cigarettes, is acidic; in this case, the nicotine is absorbed in the lungs.

The absorption of nicotine by the blood is very rapid; nicotine is quickly distributed to the brain and its effects on the central nervous system are manifested almost instantaneously.

Studies in both humans and animals have shown that nicotine is a potent psychoactive drug. High doses can lead to intoxication and death; at doses typically obtained from tobacco products, nicotine is responsible for much of the pleasure and satisfaction obtained by tobacco users. Through activation of nicotine receptors in the central nervous system, nicotine can produce dependence. It also appears that nicotine can alleviate various dysthymic states associated with boredom, stress, and the nicotine withdrawal syndrome.

Nicotine administration can lead to tolerance and physiological dependence. Tolerance is indicated by the diminished response to repeated doses of nicotine. Nicotine-induced physiological dependence and withdrawal are specific to the administration or removal of nicotine itself. The withdrawal syndrome includes a craving for nicotine, impaired ability to concentrate, disrupted cognitive performance, mood changes, and impaired brain function. The severity of the symptoms may be such that heavy smokers are unable to abstain permanently from tobacco without treatment; however, the symptoms usually disappear within a few weeks.

¹ This section is based on information received from Dr J. Henningfield, Chief, Clinical Pharmacology Branch, National Institute on Drug Abuse, Addiction Research Center, Baltimore, MD, USA

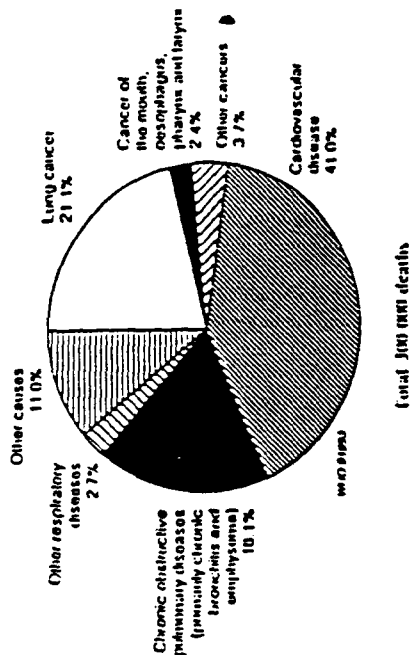
which varies from low levels to levels at which a behaviour is highly resistant to change.

Mortality and morbidity

In 1980 the report of the US Surgeon-General on *The health consequences of smoking for women* (34) exposed clearly the fallacy of the belief that women were immune to tobacco-related diseases. This impression was gained from studies conducted between 1950 and 1980, which compared the death rates from tobacco-related diseases among men with those among women. More recent research has shown that whenever the cigarette smoking characteristics — in particular duration and intensity — of women emulate those of men, their relative risks of smoking-related illness are likely to be similar.

Currently, tobacco use is estimated to account for 3 million deaths per year. More than half of these occur in developed countries, and more than 300 000 of them are among women in these countries. The cumulative exposure of women to tobacco (primarily from smoking) has been much higher in these countries than in the developing countries and as a consequence the death rates from smoking-related diseases among women in developing countries are likely still to be relatively low. However, the mortality rates from other forms of tobacco use among women (primarily chewing) is substantially higher in developing countries, with annual estimates of at least 100 000 deaths in India alone. Current trends suggest that among women who smoke, at least 25% will die from smoking-related diseases.

In Chapter 2, it was pointed out that the uptake and increase in tobacco consumption by women is mainly in the form of smoking, particularly cigarette smoking; consequently this chapter will concentrate on this issue. However, in some developing countries such as India, cigarette smoking represents only a small fraction of the total tobacco consumption, in particular among women in rural areas. In these countries, smokeless tobacco is also imposing its burden of tobacco-related diseases and deaths. The risks of oral cancer, as well as of numerous odontological disorders and diseases of the mouth and gums, are greatly increased by the use of smokeless tobacco. Smokeless tobacco use has also been shown to be related to hypertension and an increased heart rate. In addition, tobacco chewing poses specific risks for women, e.g. for potential adverse effects on the fetus during pregnancy.



In countries where smoking is a long-established custom, about 90% of lung cancer cases, 30% of all cancers, and over 80% of cases of chronic bronchitis and emphysema are attributable to tobacco use, as are some 20–25% of deaths from coronary heart disease and stroke. In countries where smokeless tobacco use has been predominant, such as in the Indian subcontinent, it is a major cause of oral cancer.

An overview of the principal causes of smoking-related deaths among women in the developed countries for which reliable mortality statistics are available is given in Fig. 3. Of the 300 000 deaths attributable to smoking among women in these countries in 1985, 21.1% were coded to lung cancer, 41% to cardiovascular diseases, primarily coronary heart disease and stroke, and 18.1% to chronic obstructive pulmonary disease. The proportionate distribution was similar for men.

In 1980 the US Surgeon-General made the following comments about women smokers in the United States, which can also be expected to apply in other countries: "Women demonstrate the same dose-response relationships with cigarette smoking as men. An increase in mortality occurs with an earlier age of beginning cigarette smoking, a longer duration of smoking, inhalation of cigarette

women who have smoking characteristics similar to men may experience mortality rates similar to men" (19).

- A recent study which examined the life expectancies of cigarette smokers and non-smokers in the United States found that women and men who are heavy smokers at 35 years of age can expect at least a 25% shorter life than non-smokers (25).

A summary of the relative risks¹ for smokers in the United States for various causes of death is given in Table 11. In addition to the gender differences, Table 11 demonstrates how the risks for women multiplied over the two decades between the two studies, commensurate with their longer exposure to smoking. This is particularly evident for lung cancer, where the relative risk increased almost fivefold to a level similar to that found for men in the 1960s. A similar pattern is found in most developed countries and is likely to emerge in a growing number of developing countries as exposure to tobacco increases.

Table 11. Summary of estimated relative risks for various causes of death among current cigarette smokers aged 35 years and older, Cancer Prevention Study, 1959-65 (CPS-I) and 1982-86 (CPS-II)

Underlying cause of death	Men		Women	
	CPS-I	CPS-II	CPS-I	CPS-II
Coronary heart disease, age 35	1.83	1.94	1.40	1.78
Coronary heart disease, age 35-64	2.25	2.81	1.81	3.00
Cerebrovascular lesions, age 35	1.37	2.24	1.19	1.84
Cerebrovascular lesions, age 35-64	1.79	3.67	1.92	4.80
Chronic obstructive pulmonary disease	8.81	9.65	5.89	10.47
Cancer of the lip, oral cavity, and pharynx	6.33	27.48	1.96	5.59
Oesophageal cancer	2.62	7.60	1.94	10.25
Pancreatic cancer	2.14	2.14	1.19	2.11
Laryngeal cancer	10.00	10.48	3.81	17.78
Lung cancer	11.35	22.16	2.69	11.94

Source: reference 16.

¹ Relative risk describes the risk of dying or developing a disease for a person exposed to a particular risk factor (in this case cigarette smoking) compared with someone not exposed.

countries. The risks are not always the same for women in all developing countries, but current rates of tobacco-related diseases are likely to be generally lower than in developed countries as relatively few women smoked until recently. Since there is a definite time-lag between the onset of smoking and the development of smoking-related diseases, such as lung cancer and heart disease, the number of tobacco-related deaths among women in both developed and developing countries is likely to increase well into the next century.

Tobacco consumption is also an important cause of morbidity, affecting the quality of life of women, either as sufferer or carer for other family members affected by tobacco-related diseases. Ill health arises from numerous tobacco-related conditions, including respiratory distress, gastric ulcers and pregnancy complications. The adverse effects of smoking on pregnancy range from low birth weight to increased incidence of spontaneous abortions, premature births, stillbirths and neonatal deaths. Low birth weight is one of the strongest predictors of infant mortality.

Tobacco smoke is not only dangerous to the smoker but to nearby non-smokers as well. Besides the acute effects of eye and throat irritation due to exposure to the smoke, passive smoking is detrimental to the respiratory tissues and increases the risk of lung cancer and cardiovascular disease in non-smokers. Children are particularly vulnerable to the damaging effects of enforced passive smoking.

Thus, in the case of women it is not enough to consider only the direct effects of tobacco consumption because, in most societies, they are also the primary carers of children and their smoking puts these children directly at risk, as well as providing role models of smoking to children. Parental smoking may also have economic consequences and repercussions on the child's well-being (e.g. fewer resources may be available to purchase food).

Cardiovascular diseases

Among the causes of death related to tobacco use, cardiovascular diseases represent the most important absolute risk. Both nicotine and carbon monoxide are contributory or supportive factors in the development of coronary artery and peripheral vascular disease. In many developed countries, there have been dramatic falls in mortality from these diseases due largely to a reduction in risk factors, including smoking cessation. Further reductions in mortality are possible with further decline in smoking.

Coronary heart disease

Coronary heart disease (CHD), including acute myocardial infarction (heart attack) and chronic ischaemic heart disease, is more common in women who smoke than in those who are non-smokers. Cigarette smoking increases the risk of CHD by approximately twofold, and in younger women it may increase the risk several-fold. Cigarette smoking also acts synergistically with other CHD risk factors, producing a risk greater than the sum of all the individual risks.

Overall, the death rate from CHD among smokers is 80-90% greater than among non-smokers, equivalent to a 2-4-fold greater risk of sudden death. The risk of myocardial infarction is multifactorial. The presence of one or more of the major CHD risk factors, such as cigarette smoking, hypercholesterolaemia, and hypertension puts individuals at high or very high risk. The risk of CHD is also increased among diabetic smokers and among smokers with genetic familial hyperlipidaemias.

Studies in North America, northern Europe and Japan have shown that cigarette smokers are at greater risk than non-smokers for fatal and non-fatal myocardial infarction and for sudden death. Women who smoke and use oral contraceptives are on average about 5-10 times more likely to develop heart disease than those who use the pill and do not smoke. This risk increases with age, and is particularly high among women over 40 years. The estimated risk of myocardial infarction among current smokers also increases with the number of cigarettes smoked daily and does not depend on either the nicotine or carbon monoxide yield of the cigarette. In other words, the risk of CHD is *not* reduced by smoking cigarettes with a lower tar and nicotine yield. This is particularly important for women who may smoke these cigarettes, thinking them to be safer.

However, there is clear evidence that giving up smoking markedly reduces the risk of dying from heart disease or stroke. This decline in risk is evident soon after giving up smoking and continues with time. There is thus considerable scope for further marked declines in mortality and morbidity from CHD among women as smoking cessation programmes become more effective.

Cerebrovascular disease

In populations where women have smoked for several decades, it is estimated that smoking accounts for approximately 55% of deaths from cerebrovascular disease in women under

65 years. The major types of cerebrovascular disease (collectively known as 'stroke') are: (a) cerebral infarction, and (b) cerebral haemorrhage. Cigarette smoking makes a significant, independent contribution to the risk of stroke, which increases with the number of cigarettes smoked. Use of both the pill and cigarettes synergistically increases the risk of cerebral haemorrhage in women.

Until recently, the relationship between cigarette smoking and the risk of stroke had been unclear. Recent studies have now confirmed that smoking is an important independent risk factor for stroke in both women and men and that the risk decreases on cessation of smoking. The risk of stroke among women smokers is highest among middle-aged women and stroke is therefore responsible for a significant number of premature deaths among women smokers.

Atherosclerosis

While the incidence of peripheral vascular disease is increased among all smokers, the condition is more common in men than in women. There is a significant association between cigarette smoking and atherosclerosis, cigarette smoking being directly related to the extent of atherosclerotic disease involving large and small arteries in the lower extremities. Diabetes mellitus and cigarette smoking are key risk factors for arterial disease of the lower extremities and the cause of many amputations.

Aortic aneurysm

Cigarette smoking has been associated with an increased risk of aortic aneurysm. The mortality rate from abdominal aortic aneurysm among cigarette smokers (male and female) is 2-4 times the rate among non-smokers.

Hypertension

Cigarette smoking has also been associated with low serum levels of high-density lipoprotein and hypertension. Smoking by patients with hypertension is an important disease risk factor; the risk of coronary heart disease and stroke is 50-60% higher in smokers with high blood pressure than in non-smokers with high blood pressure.

Cancer

Each year, it is estimated that about 6.5 million new cases of cancer occur throughout the world, with about half of them occurring in men and half in women. For women, the most common cancers are breast cancer, cervical cancer, colorectal cancer, stomach cancer and lung cancer, in that order. Among men, lung cancer is most common (reflecting their longer and more extensive exposure to tobacco than women), followed by stomach cancer, colorectal cancer, cancer of the mouth and pharynx and prostate cancer.

In developed countries, smoking is estimated to cause about 85 (NM) cancer deaths a year among women or approximately 8% of all deaths from cancer among women. Among men, over 500 (NM) cancer deaths a year or just over 40% of all cancer deaths are attributable to smoking. The proportions are undoubtedly lower in developing countries but are increasing.

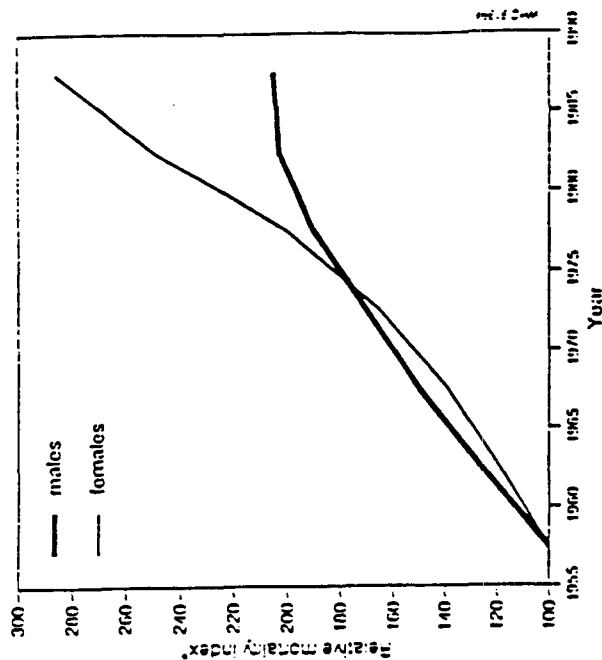
- In India it is estimated that about one fifth of all cancers in women are attributable to tobacco use (17).
- In south-east Asia, where smokeless forms of tobacco are widely used, cancers of the mouth and pharynx are twice as common as lung cancer in men and are the third most common form of cancer in women.

Lung cancer

Cigarette smoking is considered to be the major cause of lung cancer in populations where smoking has been common for many years. In developed countries, smoking is associated with about two-thirds of lung cancer cases among women; however, in the United Kingdom and United States, where women have been smoking for several decades, it is associated with about 80% of cases. Since the 1960s, there has been a steady and dramatic increase in the number of deaths from lung cancer among women; overall, death rates from lung cancer among women in developed countries increased by almost 200% between 1957 and 1987 (see Fig. 4). Lung cancer death rates in Japan, Norway, Poland, Sweden and the United Kingdom doubled, and in Australia, Denmark and New Zealand increased by 200%. In Canada and the United States, the rates increased by over 300%.

In addition to the number of deaths, the suffering experienced by cancer patients should also be recognized. Unfortunately, for most tobacco-related cancers, particularly lung cancer, the case-fatality rate (death rate among those who have the disease) is very high and survival is usually short, of only a few months' duration.

Fig. 4. Trends in lung cancer mortality by sex in developed countries, 1957-87



* Death rate for each period expressed as a percentage of the mortality level for 1957

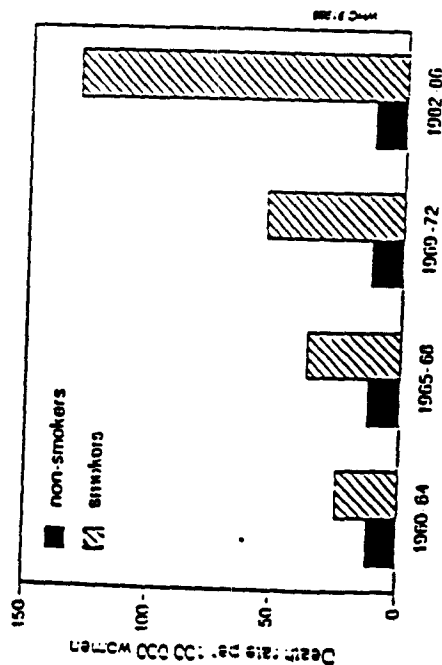
The risk of lung cancer among women smokers increases with the number of cigarettes smoked per day, duration of smoking behaviour, degree of inhalation, age of starting to smoke, and amount of tar (high, medium or low). In the determination of the risk of lung cancer associated with the quantity of tobacco smoked, two components can be identified: the number of cigarettes smoked per day and the duration of smoking behaviour. While an increase in either factor leads to a higher risk, the effect of the duration of smoking is greater than that of the daily consumption of tobacco.

Cigarette smoking is associated with the majority of cases of lung cancer in women and men. In addition, some cases are linked with passive smoking, while others are linked with exposure to other carcinogens, such as radon. There have been reports of an increased risk of lung cancer among coal miners and studies have

been conducted to examine the risk for subjects exposed to radon in their homes. Most of the increase in risk occurred among smokers living in houses with a high level of exposure to radon, which is especially harmful to women smokers, who usually spend more time at home.

Evidence for cigarette smoking being the major cause of lung cancer mortality is provided in Fig. 5, which illustrates the sharp increase in mortality among women smokers in the United States over the period 1960-86, compared with the constant low rate among women who are non-smokers.

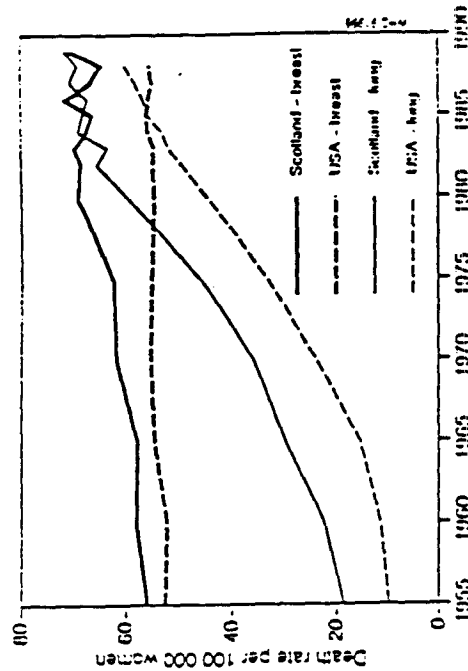
Fig. 5. Age-standardized death rates from lung cancer among women in the United States, 1960-86



In Japan, Scotland and the United States, lung cancer now accounts for more deaths among women than breast cancer (Fig. 6). In other parts of the United Kingdom, as well as in Australia and Denmark, lung cancer mortality rates among women are reaching breast cancer mortality rates. In England and Wales, lung cancer mortality rates among women have increased by 250% since the 1970s, and have almost overtaken breast cancer in women aged 65-75 years who started smoking during the Second World War.

The trends in mortality from lung cancer among women in developed countries are shown in Table 12. Only in a few coun-

Fig. 6. Trends in age-standardized death rates from lung and breast cancers among women aged 75+, Scotland and the United States, 1955-89



(France, Portugal and Spain) are lung cancer death rates still low; however, the rates in these countries will rise sharply in the near future as a result of the very significant proportions of young women who now smoke.

As more and more women die from lung cancer, the levels of mortality from the disease in some countries are rapidly converging towards those in men. As Fig. 7 shows, the male to female ratio of lung cancer death rates in countries such as Australia, Denmark, England and Wales, and the United States declined dramatically from 7-10:1 in the early 1960s to 3:1 in 1985. This trend is expected to continue as the smoking epidemic among men in these countries stabilizes or begins to decline but rates for women continue to rise.

Other cancers

Figures based on studies in the United States of America show that smoking is associated with a very significant proportion of other cancers in women, including cancer of the oral cavity (61%), oesophagus (75%), pancreas (34%), larynx (87%), bladder (37%), and kidney (12%).

Table 12. Patterns and trends of lung cancer mortality among women in developed countries, 1950-90

Country	Age-standardized* mortality rate from lung cancer per 100,000 population			
	1950-54	1960-64	1970-74	1980-84
Group 1 ... Mortality high and rising				
Australia	4.5	5.6	9.7	12.2
Canada	4.8	6.0	11.0	15.6
Denmark	6.1	8.7	13.7	18.2
England & Wales	8.8	12.5	19.2	22.8
Hungary	8.1 ^b	10.1	12.0	13.1
Ireland	6.0	9.2	16.7	20.4
New Zealand	4.2	7.1	13.9	16.7
United States	5.7	7.4	15.1	20.4
Group 2 ... Mortality intermediate and rising steadily				
Austria	8.8 ^b	8.4	9.5	10.2
Belgium	5.2 ^c	6.1	7.4	8.5
Czechoslovakia	7.9 ^b	8.1	9.1	10.2
Germany	5.6	7.0	7.1	7.9
Italy	3.9	5.8	7.1	8.2
Japan	1.9	5.8	8.0	9.5
Netherlands	4.7	5.1	5.9	7.3
Norway	3.7	3.9	5.6	6.9
Sweden	5.4	5.6	7.9	9.3
Switzerland	4.6	4.5	5.7	6.6
Group 3 ... Mortality low and rising slowly				
Ireland	6.1	5.4	6.1	7.5
France	4.5	5.2	5.1	5.9
Portugal	1.1 ^b	1.4	4.6	4.6
Group 4 ... Mortality still on plateau				
Spain	3.4	5.2	5.9	5.8

* The "European" population age structure was used as the standard

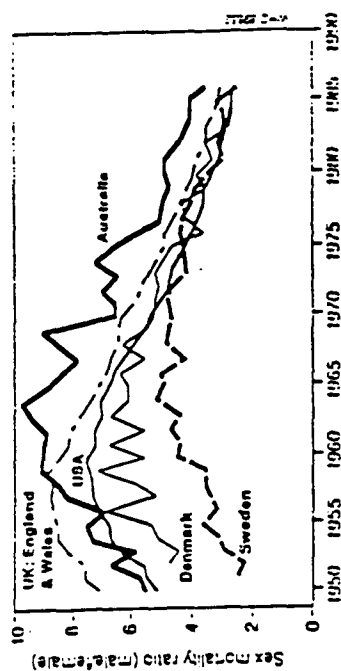
^b Latest available data

^c Data refer to 1953-59

Source: Lopez AD. Changes in tobacco consumption and lung cancer risk: evidence from 10 small countries. In: Nakamaishi et al., ed. *Evolution of patterns of primary prevention of cancer*. Lyon, International Agency for Research on Cancer, 1976, pp 33-76 (IARC Scientific Publications, No. 103)

Laryngeal cancer has recently become more common in women. Smokers are at higher risk of the disease, thus with the increased prevalence of smoking among women, an increase in the incidence of laryngeal cancer could be expected. Such a tendency may be present in a few countries, but is difficult to assess accurately because of the still low rate of the disease in women. However, the male to female ratio of laryngeal cancer death rates, which in most parts of the world is of the order of 10-20:1, is

Fig. 7. Trends in male/female mortality ratio from lung cancer in selected countries, 1950-84



much lower (5-6:1) in countries such as Canada and the United Kingdom, where women smoked heavily in the past.

Oral cancers include cancers of the lips, tongue, gums, buccal mucosa, hard and soft palate, salivary glands, floor of the mouth and oropharynx. Oral cancer is a major problem in certain developing countries, particularly in south-east Asia, where a variety of traditional tobacco uses (e.g. chewing or smoking with the burning end of the chutta inside the mouth) are associated with 85-90% of cases among women. Cigarette, pipe and cigar smoking have all been linked to an increased risk of oral cancer. Heavy use of alcohol has been identified as an independent risk factor. The use of both tobacco and alcohol combined with poor oral hygiene or inadequate dentition also increases the risk of developing oral cancer.

Use of smokeless tobacco products (snuff and various forms of chewing tobacco) has been associated with cancers of the gingiva, mouth, lips, tongue, pharynx, larynx and oesophagus. Inhalation of snuff has also been linked to the occurrence of nasal cancer.

The highest reported incidence rate in the world for cancer of the mouth is among women in Bangalore, India, where women have considerably higher rates than men; this pattern is also found in Madras. In contrast, the incidence of lung cancer among women in these cities is extremely low. Again, this shows that when assessing the global effects of tobacco consumption, it is not sufficient to consider only cigarette consumption and lung cancer.

The risk of oesophageal cancer increases with the use of tobacco and alcohol. Mortality rates from the disease among pipe and cigar smokers are similar to rates among cigarette smokers.

Cigarette smoking is a risk factor for both *urinary bladder* and *kidney cancer*. Smoking compounds the risks of certain tropical diseases: the risk of bladder cancer, for example, is greater among people suffering from schistosomiasis, and β -naphthylamine contained in tobacco tar is a bladder carcinogen (28). Smoking also enhances the risk of bladder cancer associated with certain occupational exposures.

Cigarette smoking is closely linked to the occurrence of *pancreatic cancer*, with the risk increasing with an increase in cigarette consumption.

- Studies have shown that the mortality ratio for pancreatic cancer was 1.99 for Japanese women smokers in comparison with non-smokers, and 2.3 for women smokers in Sweden and the United States (14, 19).

- Studies in Japan and Sweden have shown that women who smoke are 1.6-2.7 times more likely to develop bladder cancer than those who do not smoke (14).

Significantly, for women, cigarette smoking has been associated with a twofold increase in the risk of *cervical cancer*. This may in part be due to confounding with other risk factors since this form of cancer is also strongly linked with certain types of sexual behaviour which might be more prevalent among smokers than non-smokers. Young women who start smoking at an early age, for example, may also become sexually active at an earlier age than those who do not smoke.

A number of studies have shown a slightly lower risk of *endometrial cancer* among women smokers. This may be due to the anti-estrogenic effect of tobacco. However, the prevalence of this type of cancer is very low and the reduction in risk is negligible compared with the greatly increased risk of other cancers associated with smoking.

Bronchopulmonary diseases

There are several bronchopulmonary disease conditions that are classified under the heading chronic obstructive pulmonary disease (COPD). Undoubtedly, smoking is the most important risk factor for COPD in developed countries, although atmospheric pollution in cities and indoor pollution from fires in houses without chimneys are major contributory factors for women in developing countries. Industrial dust and fumes in the workplace have also been implicated, but to a much lesser extent. COPD may

be defined as a condition characterized by the development of airways obstruction and the presence of chronic bronchitis, bronchiolitis, emphysema or asthma. Emphysema, a major component of COPD, is an abnormal permanent enlargement of the air spaces distal to the terminal bronchioles, either from dilatation or from obstruction of their walls. Most people who die from COPD have emphysema.

- In the United States, COPD mortality has significantly increased in women, while it has remained almost constant in men. The trends in the prevalence of COPD — stable or downwards for men since 1980, and upwards for women — are consistent with changes in cigarette smoking among these groups (17).

Several studies have shown that respiratory conditions, such as cough, sputum, wheezing and dyspnoea (shortness of breath) are more common among smokers than among non-smokers. There is also a higher frequency of pulmonary functional abnormalities among smokers.

The prevalence of chronic bronchitis among smokers increases with the number of cigarettes smoked per day. A close relationship has been demonstrated between cigarette smoking and chronic cough or sputum production in women; these symptoms also increase with the number of packs smoked over the years.

In developed countries, COPD mortality is highest in the eastern European countries, England and Wales, Ireland, and Scotland, and is lowest in southern Europe, Israel and Japan. However, differences are difficult to quantify because of differences between countries in diagnostic and coding practices. In the past, the trend in COPD mortality has been upwards. In recent years there have been substantial declines in death rates in most countries for the major causes of death, but not for COPD or lung cancer.

- In the United States, COPD is one of the few leading causes of death that has shown a steady increase since 1950. The trend for COPD mortality has been similar to that for lung cancer. More than 95% of COPD deaths occur in people over the age of 55. Men have appreciably higher death rates than women; however, the rate of increase has been much more rapid among women than men since 1979. Whereas men showed a 16% increase in mortality, women have experienced a 71% increase (20). It has been estimated that the smoking attributable proportions of mortality from COPD in the USA are 84% for men and 79% for women (21).

In European countries, COPD mortality in women over 55 years is increasing. In England and Wales, the increase is about 8-9% per year; trends are also upwards for women in France, the Netherlands, and Scotland.

- In a Swedish study, the death rate from leukemia among female smokers was 2.2 times that among non-smokers; this ratio is similar to that reported for the United States (19).

In developing countries few reliable data are available and it is difficult to give a precise picture of the situation. In some countries, such as China and Nepal, the combination of smoking and passive smoking with exposure to domestic smoke from cooking and heating in poorly ventilated houses has been associated with an increased incidence of chronic bronchitis and cor pulmonale.

Reproductive health

Smoking is associated with increased risks of infertility. Women who smoke are more susceptible to infections of the reproductive tract and may be less fertile. For example, women who smoke more than 20 cigarettes a day are three times more likely than non-smokers to take more than a year to conceive, with three times the risk of primary tubal infertility, and a greater risk of ectopic pregnancy.

Furthermore, women who smoke and use oral contraceptives are at greater risk of cardiovascular disease than those who use the pill and do not smoke (see p. 37).

Smoking during pregnancy has been associated with premature delivery, spontaneous abortion and fetal and perinatal death. Some of the conditions present a risk for the health of the mother herself, and may occur particularly in countries where pregnant women do not generally have easy access to adequate care in the event of problems such as ectopic pregnancy, and where there is a greater incidence of anaemia among women.

In the Indian subcontinent, associations have been reported between use of smokeless tobacco during pregnancy and adverse reproductive outcome. In one study, the stillbirth rate among women who chewed tobacco during pregnancy was much higher than that among women who did not. Furthermore, the offspring of the mothers who chewed tobacco had a lower birth weight; this was associated with a decrease in the mean gestation period (42).

Similarly, smoking during pregnancy has been shown to increase the risk of delivering a low-birth-weight baby. Independent of factors such as race, parity, maternal size, socioeconomic status, sex of child, or gestational age. There is a dose-response relationship, i.e. the more the woman smokes during pregnancy, the greater the reduction in birth weight. If the mother is able to give up smoking by the fourth month of gestation, her risk of delivering a low-birth-weight baby is similar to that of a non-smoker.

Accorn - research conducted in developed countries, women who smoke have 1.2-1.8 times as many spontaneous abortions as women who are non-smokers.

- In a study at three hospitals in New York, USA, the risk of having a spontaneous abortion for regular smokers increased by 46% for the first 10 cigarettes smoked a day, and by 61% for the first 20 cigarettes (16).

Smoking is an important risk factor for perinatal death. It has been estimated in some developed countries that if all women gave up smoking, the number of fetal and infant deaths would drop by approximately 10%. The sudden infant death syndrome, a major cause of infant mortality in developed countries, has also been linked to maternal smoking during pregnancy. Mortality from this condition has been rising in several countries and in some countries, such as France, Germany and the United Kingdom, now accounts for 20-25% of all infant deaths.

- A recent survey of more than 160,000 births in Missouri, USA, and a survey of 281,000 births in Sweden, have shown that smoking plays a significant role in late fetal and early neonatal death, especially when combined with other biological risk factors, such as high maternal age and multiple births. The Swedish study suggested that smoking was responsible for 11% of late fetal deaths and 5% of early neonatal deaths (16).

In those developing countries where the health of the mother and her baby is already jeopardized because of poverty and malnutrition, these disadvantages combined with the effects of smoking will have an even greater impact on the incidence of perinatal mortality.

- In Chile it is estimated that 10% of non-accidental perinatal deaths are attributable to smoking (16).

Menstrual disorders including dysmenorrhoea, premenstrual tension, irregular menses and secondary amenorrhoea have been associated with smoking, and women who smoke typically go through the menopause two or three years earlier than non-smokers. Cigarette smoking seems to increase the risk of estrogen-deficiency diseases, such as postmenopausal osteoporosis and subsequent fractures. After the menopause, the risk of cardiovascular disease among women becomes equal to that among men.

Other effects on well-being

Nicotine reduces the circulation of blood and the uptake of oxygen, affecting not only the skin, but also the hair and the eyes. Contrary to the images of youthful and healthy women often

promoted in cigarette advertising, smoking produces bad breath, gum disease, dental problems, a hoarse voice, cough, a decreased sense of smell, stained teeth and fingernails, and premature wrinkles.

Similarly, use of smokeless tobacco can stain the teeth and cause bad breath, tooth erosion, dental caries, tooth loss, a decreased sense of taste, alveolar bone destruction and gingival recession, as well as other effects on gingival and periodontal health. The healing of oral lesions has also been noted to be slower among users.

Smoking and occupational health

In addition to the direct effects caused by tobacco consumption, smoking may interact with hazardous materials in the workplace.

- Tobacco products may become contaminated with toxic agents in the workplace; they can facilitate the entry of the agent by inhalation, ingestion and skin absorption.
- Chemicals may be transformed into more harmful agents with smoking.
- Certain toxic agents in tobacco smoke may also be present at the workplace, leading therefore, to increased exposure to the agent.
- Smoking may act synergistically with toxic agents.
- Smoking can cause accidents at the workplace, for example, fires and even explosions.

Women with the same occupational exposure to environmental hazards and smoking behaviour as men are likely to develop similar health problems. Furthermore, smoking and occupational exposure may have a cumulative effect on the health of the fetus or the mother during pregnancy.

Air pollution or occupational exposures were often believed to be the main reasons for increased lung cancer mortality. While these factors have been shown to be linked to mortality from lung cancer and the occurrence of other respiratory diseases, active smoking has been shown to have a much greater effect. Indeed, in situations where there is both outdoor and indoor air pollution, active smoking multiplies the risks. In addition, active smoking is something that can be avoided; cleaning ambient air is more difficult and is a slower process.

Studies have shown that exposure of women to smoking and asbestos multiplies the risk of lung cancer. Women who smoke and are exposed to cotton dust have a higher risk of developing byssinosis, chronic bronchitis and chronic obstructive pulmonary disease and show abnormal effects in pulmonary function tests more often than those who do not smoke.

- A study of workers in mills producing cotton and man-made fibres in England showed that the prevalence of byssinosis among women and men who smoked was 1.4 times that among non-smokers; the risk was strongly associated with the duration of exposure to cotton dust (19).

Passive smoking

Passive smoking, also known as involuntary smoking or inhalation of environmental tobacco smoke, is of increasing concern because of growing awareness of its detrimental effects on health. Important considerations in examining the risks of passive smoking are the composition of environmental tobacco smoke and its toxicity and carcinogenicity.

Environmental tobacco smoke has two constituents: mainstream cigarette smoke exhaled by the smoker and sidestream smoke, the smoke emitted from the burning end of the cigarette. Comparison of the chemical composition of the smoke inhaled by active smokers with that inhaled by involuntary smokers suggests that the toxic and carcinogenic effects are qualitatively similar; however, although there is a greater dilution of sidestream smoke, greater amounts of many of the organic constituents of smoke, including some carcinogens, are found in sidestream smoke.

Exposure to environmental tobacco smoke increases the risks of disease for non-smokers. This concerns women in two respects. Firstly, women smokers are fewer in number than men smokers, both in the home and at work, and therefore larger numbers of women than men are more likely to be exposed to passive smoking. Secondly, as women are usually the primary carers of the family, children are more likely to be exposed to passive smoking if their mother smokes than if their father smokes.

According to the 1986 report of the US Surgeon General (19) there is compelling evidence that:

- involuntary smoking is a cause of disease, including lung cancer, in otherwise healthy non smokers;
- children whose parents smoke have an increased frequency of respiratory infections, increased respiratory symptoms, and slightly lower rates of increase in lung function

as the lung matures than children whose parents are non-smokers; the simple separation of smokers and non-smokers within the same air space may reduce, but does not eliminate, the exposure of non-smokers to environmental tobacco smoke.

Health consequences for women

Women's health may be impaired by other people's tobacco smoke at home, at work or in public places. Several studies have shown that women who are non-smokers and whose partner smokes have a 20-50% greater risk of developing lung cancer than those whose partner does not smoke.

- The National Research Council report for 1986 stated that at least 2500 of the 12 000 deaths from lung cancer among non-smokers in the United States could be attributed to passive smoking. The total number of deaths from lung cancer in the United States in 1986 was about 136 000.

The effects of exposure to a partner's smoking may be manifested only after many years of exposure for cancers, but there are several more rapid detrimental effects on the heart and cardiovascular system.

- A study conducted among rural women in the USA showed that the relative risk of death from cardiovascular disease was 1.59, and 1.39 for all causes of mortality, for women whose partners smoked cigarettes compared with women whose partners were non-smokers, after adjustment for age, cholesterol, blood pressure, and body mass (47).

Women who work in the service sector often have little control over policy on smoking on the premises. Such is the case for canteen staff and most secretaries. However, it should be noted that a number of recent litigation cases in Australia, Sweden and the United Kingdom have recognized that passive smoking is an occupational hazard.

Furthermore, the effect of passive smoking on pregnant women deserves more attention. If a woman who does not smoke is exposed to tobacco smoke during pregnancy, there could be detrimental effects.

- A study in Osaka, Japan, of 3478 pregnant women showed that the prevalence rate of low birth weight increased with the intensity of exposure to tobacco smoke during pregnancy; among non-smokers, the prevalence was 3.8% for women whose partners were non-smokers, but 3.6% for women whose partners were smokers (48).

Health consequences for children

Many women are becoming more aware of the danger of smoking during pregnancy, but are unaware of the risks of smoking after delivery; few regular smokers realize that their children are passively smoking.

- In a study in Japan, schoolchildren were found to have quantities of smoke related chemicals in the urine related to the number of cigarettes that their parents smoked at home. A study carried out in the United Kingdom had the same findings, even among children aged between 11 and 16, where the amount of cotinine in their saliva was related to the number of smokers in the family (A. Charlton, personal communication, 1991).

Children who are constantly exposed to tobacco smoke have a tendency to suffer from a series of health problems in the first few years of life, especially respiratory illnesses and infections. A higher incidence of pneumonia and bronchitis during the first year of life in children whose parents smoke, as well as an increased frequency of admission to hospital have been observed. Children whose mothers smoke have also been found to have a higher frequency of acute bronchitis, tracheitis and laryngitis than those whose mothers are non-smokers. Acute respiratory illness during childhood may have long-term effects on the growth and development of the lungs, and might make the lungs more susceptible to the effects of active smoking, as well as to the development of chronic obstructive pulmonary disease in adult life.

- In the United States a study of 650 children aged 5-10 years showed that the prevalence of chronic wheezing was 1.9% in children whose parents were both non-smokers, 6.9% in children whose mother or father smoked, and 11.8% in children whose parents were both smokers. Children whose parents smoke have a 30-80% higher prevalence of chronic cough or phlegm than children of non-smokers, as well as an increased risk of asthma; passive smoking may also exacerbate any existing health problems (39). Asthmatic children of smokers are reported to experience improvements in their condition when their parents stop smoking (45).
- A recent study among children aged 8-11 years in Hong Kong found that parental smoking in the home was significantly associated with an increased risk of coughs and phlegm (17).

Several studies report that chronic middle ear effusions in children are related to parental smoking, being more frequent when both parents smoke.

Concurrent symptoms might appear when a child is overexposed to tobacco smoke. For example, there is a condition known as the Monday morning syndrome, which occurs when children who have been inhaling smoke during the weekend develop otitis and respiratory infections on Sunday evening and have to see

Another effect of passive smoking is that it indirectly encourages children to smoke. Children of parents who smoke are more likely to smoke themselves as adolescents and adults, having been brought up in a smoking environment (see Chapter 4, p. 60).

Economic consequences

Tobacco consumption is not only a major health hazard but an economic burden on individuals and families. Economic studies in a number of developed countries have demonstrated that the costs of smoking for society are far higher than the revenue brought to the country by the tobacco industry. They include:

- The costs of direct medical care (including increased neonatal care costs).
- The cost of absenteeism from work (in Canada it has been estimated that smokers are absent from work 33-45% more than non-smokers).
- The cost of fires and industrial accidents caused by smokers and the related increased insurance costs.
- The costs related to time spent on smoking. Not only does smoking decrease the productivity of the person concerned but it may disturb non-smokers and create undue stress between workers, and between workers and employers.
- The costs related to maintenance. Smoking creates litter and necessitates more frequent renewal of decoration, furnishings and filters in ventilation systems.

The economic consequences of smoking in developing countries revolve around two main principles. Firstly, the use of tobacco increases health care costs in poor countries, where this cost is often directly borne by the individual. Secondly, many poor families spend a significant proportion of their income on tobacco instead of food. This can lead to dietary deficiencies among these families, particularly among women and young girls, who are often the last to be served at mealtimes.

* In Bangladesh, a survey has shown that smoking five cigarettes a day in a household could lead to a monthly dietary deficit of 8000 calories, this is nearly a quarter of the monthly maintenance energy requirements of a 12 kilogram child (40).

The general effect of smoking is that poor families are becoming poorer, especially in rural areas, where up to 5% of monthly income may be spent on tobacco. Smoking during pregnancy adds to poverty, malnutrition, and anaemia, all of which contribute to infant death, particularly in developing countries. However, for a few countries, tobacco is also an important cash crop, and reductions in tobacco production should be compensated for by the promotion of other crops.

Some of the economic consequences of tobacco consumption may be more acutely felt by women. For example, special attention can be made of the consequences of absenteeism from work of the wage-earning partner in countries where no compensatory scheme exists; or of the consequences of children falling ill from passive smoking causing increased absenteeism from work for the person who has to take care of them.

In both developed and developing countries, the effect of the illness or death of a father will have catastrophic effects upon the life of the children and the surviving partner both psychologically and economically. If it is the mother who dies, the consequences for the children may be particularly dire.

Furthermore, in some developing countries the tobacco growing and manufacturing industries employ a substantial proportion of women. Hence, when tobacco consumption decreases, it will be necessary to consider alternative employment for these women.

Assessing further the effects of the epidemic

In developed countries the effects of smoking on women's health have been well documented. In view of their traditional social and reproductive roles, these effects may pose more risks for them than would the same behaviour in men. This greater risk should be a source of concern in all countries as smoking rates among women are increasing. There is a need for additional assessment and appreciation of the risks incurred by women compared with men. Particular care should be taken to investigate all aspects of the influence of smoking on maternal death.

In particular, there is a growing awareness of the effects of passive smoking on health but while the evidence for lung cancer is clear, further investigations are needed to clarify the role of environmental tobacco smoke in the etiology of other disease conditions and to determine the long-term consequences of passive smoking for children.

While there is now enough information to justify action, the paucity of data in many developing countries makes it a matter of

Chapter 4

Why women start and continue to smoke

agency for studies to be conducted in these countries, to confirm the information found in other parts of the world. Section 2 of the country profile in Annex 1 gives an outline of the type of mortality and morbidity data necessary to assess the scale and effect of smoking epidemics; and section 3 provides the basic economic data necessary to analyse the economic impact of tobacco in the individual countries.

In addition to the studies described above, further socioeconomic investigations and in-depth studies are required on the relationship between smoking, family nutrition and nutritional status of women and young girls in poor countries.

A deeper understanding of the consequences of maternal illness on family life would allow a more comprehensive assessment of the wider consequences of the consumption of tobacco by women. It would also be desirable to investigate the psychological and economic effects of the death of the main earner of the family.

Many factors affect the initiation and maintenance of tobacco use by girls and women. Both internal factors such as self-esteem and self-image, as well as external factors such as social acceptability and tobacco advertising are important. Initiation factors are complex and differ, not only between developed and developing countries, but also between different groups within countries. Maintenance of consumption of tobacco is due both to nicotine dependence and to the difficulties in quitting which stem from different sociocultural backgrounds and social-structural factors such as multiple roles, low income, stress and coping mechanisms.

Women are also specifically targeted by the tobacco industry through special brands, and through advertising and promotions which target their aspirations. There is also the issue that the fear of losing revenue from advertising prevents the media from reporting on the risks to women's health from smoking, to the extent warranted by the problem. Media collaboration is needed to make women aware of the hazards of smoking and help them stop. Smoking is very much a women's issue and should be recognized as such.

Smoking usually begins in adolescence, the time for discovery, challenge and experimentation, but the process of becoming a smoker may have begun in childhood.

The reasons that will motivate women to continue smoking are quite different from those pushing young girls to start. While there seems to be little gender difference in relation to why teenagers start to smoke, in some developed countries more young girls smoke than young boys. Smoking patterns vary considerably among the young from one country to another, depending on the social acceptability of tobacco, sociocultural and religious factors, the availability of tobacco, advertising, the relative cost of tobacco,

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Fourth Report of the Independent Scientific Committee on **Smoking & Health**

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Sir Peter Froggatt, MD PhD LLD DSc FFCM FRCP

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3 Exposure to Environmental Tobacco Smoke

Introduction

59 Since 1983, when our Third Report⁴⁸ was published, there has been growing public concern regarding the possible effects on health of exposure to environmental tobacco smoke (ETS, also called "passive" or "involuntary smoking"), due both to new evidence and to the continuing reduction in the proportion of smokers in most developed countries so that, in the United Kingdom and elsewhere, non-smokers are now in a majority in the population. The Committee has kept the topic under review and has studied various in-depth reports prepared by expert groups^{49,50} as well as the research results themselves.

60 In March 1987 the Committee decided to make an interim statement⁵¹. This drew attention to a small increase in lung cancer risk associated with passive smoking, but it did not consider other possible health effects of ETS. The present report widens the scope to include all observed effects of ETS on health.

61. The modified products programme as such has had no important impact on ETS, designed to reduce the quantities of tar and other components of the mainstream smoke delivered to the smoker, it has left the sidestream smoke, i.e. smoke emitted into the air between puffs, little changed. Mainstream smoke *exhaled* by smokers or which diffuses through the wrapper of a cigarette is only a minor component of ETS. There are qualitative as well as quantitative differences between sidestream and mainstream smoke: one is the relatively high proportion of both volatile and non-volatile (tobacco-specific) nitrosamines in the former, as reported in American studies⁵²

62. The term ETS embraces products from any form of tobacco smoking, though most reports focus on cigarette smoking. Cigar and pipe smokers experience lower smoking-related health risks as compared with cigarette smokers⁵³ but we have no reason to suppose that sidestream smoke from cigars and pipes has substantially different health effects from that from cigarettes.

The contribution of tobacco smoke to indoor air pollution

63. With the reduction in general environmental contamination from domestic coal fires and industrial sources, and reductions also in the ventilation of buildings in pursuit of fuel economy, indoor sources now constitute the major potential air pollution exposure

48 Independent Scientific Committee on Smoking and Health, Third report, HMSO, 1983

49 US Department of Health and Human Services, The health consequences of involuntary smoking, a report of the Surgeon General, Rockville, Maryland: DHHS Office on Smoking and Health, 1986.

50 National Research Council, Environmental tobacco smoke: Measuring exposures and assessing health effects, Washington DC: National Academy Press, 1986

51 Independent Scientific Committee on Smoking and Health, Interim statement on passive smoking, London: House of Commons, Hansard, 1986-87, Vol. 112, Cols 325-327, 13 March 1987

52 Adams J D, O'Mara Adams K J, Hoffmann D, On the mainstream-sidestream distribution of cigarette smoke components. Paper presented to the 39th Tobacco Chemists Research Conference, Montreal, Canada, October 1985

53 International Agency for Research on Cancer, IARC Monographs on the evaluation of the carcinogenic risk of chemicals to humans, Tobacco Smoking, Volume 38, Lyon: World Health Organization, 1985

hazard for urban man in terms both of concentration of agents and of residence time, town dwellers spending most of their time indoors⁵². Cooking and unflued heating are the major sources of such contaminants particularly of carbon monoxide and oxides of nitrogen⁵³. Smoking contributes to indoor concentrations of these pollutants but its more prominent features are trace irritants, such as acrolein, and the tobacco tar aerosol that adds to the smoke and other suspended particulate matter from domestic, industrial or traffic sources that enters from outside. Non-smokers' homes often have concentrations of suspended particulate matter approximating outdoor concentrations, but if there are smokers in the home, higher average levels are observed⁵⁴. Smoking may also produce levels of airborne particulate matter in some workplace and leisure areas greater than those in the smokers' home⁵⁵.

64. Nicotine is virtually unique to tobacco and might be considered therefore as an index of ETS. Its uptake by non-smokers, as measured by its metabolites, indicates that some passive smokers may receive a dose equivalent to that received by smokers who smoke a small number of cigarettes⁵⁶. However, since sidestream and mainstream smoke differ in composition such measurements cannot be extrapolated to the whole range of potentially harmful constituents of the smoke. For example, when dimethylnitrosamine rather than nicotine is used as a marker, the estimation of the uptake of tobacco smoke produces a greater equivalence⁵⁷. Recent work has also pointed to the role that ETS can play in enhancing concentrations of radon daughter products indoors⁵⁸. For these, and other reasons it is unwise to express ETS uptake in terms of an equivalent number of cigarettes actively smoked despite its undoubted convenience, a point made in our interim report in March 1987.

65. The mutagenicity of particulate material sampled from indoor and outdoor air has been studied using bacterial systems and smoking was found to be an important factor with its predominant effect on enzyme mediated mutagenesis⁵⁹, the number of revertants increasing with the number of cigarettes smoked.

66. Attempts have been made to evaluate relative risk by means of epidemiological studies, not surprising given the hypothesis of a zero threshold and that non-smokers absorb some of the carcinogenic agents produced in smoking, though the exact proportion is unknown. The commonest method is to investigate lung cancer incidence among non-smoking wives of husbands who are, or are not, smokers. Studies of adequate size with documented smoking histories of cases and spouses are few and our review has therefore covered surveys from many countries.

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55. Perry R, Lester J N, Hunter M, Kirk P W W, Baek S-D. British indoor air quality: the occurrence of environmental tobacco smoke. *Archives of Occupational and Environmental Health*, 1988, in press.

56. Repace J L, Lowrey A H. Indoor air pollution, tobacco smoke and public health. *Science*, 1980, 208: 464-472.

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59. Brunnekreef B, Adams J D, Hoffmann D. The influence of tobacco smoke on indoor atmospheres. II. Volatile and specific nitroamines in main and sidestream smoke and their contribution to indoor pollution. In Proceedings of the 4th Joint Symposium on Environmental Pollutants. American Chemical Society, 1978: 876-880.

60. Bergman M, Edling C, Axelsson O. Indoor radon daughter concentrations and passive smoking. *Environment International*, 1986, 12: 17-19.

61. Van Houck T J, Jønger W M F, Aalpas G W, Boley J S M. Mutagenic activity of airborne particles inside and outside homes. *Environmental Mutagenesis*, 1984, 5: 85-109.

67. In our Third Report we concluded (para 35) that the reported association between passive smoking and lung cancer was speculative. Since then a number of new studies have been reported⁴⁸⁻⁷³. The majority of reports conclude that passive smoking is associated with an increased risk of lung cancer in non-smokers. A minority conclude from their own data that any effect of passive smoking on the risk of lung cancer or other smoking-related disease in a non-smoker is negligible and that the increased risk noted in other studies is largely an artifact.

68. The published studies have been scrutinized by various groups of researchers to determine whether collectively they present a reasonably consistent picture from which the existence and magnitude of the relative risk might be assessed⁷⁴⁻⁷⁶. The major problem is the extent to which individuals with lung cancer were misclassified as non-smokers when they were in fact smokers or ex-smokers. After making allowances for such misclassifications, and other artifacts, and then recalculating relative risks in each study, most of the scientific groups conclude that while none of the studies can on its own be accepted as unequivocal the findings overall are consistent with there being a small increase in the risk of lung cancer from exposure to environmental tobacco smoke, in the range 10 per cent-30 per cent, though some other workers⁷⁷⁻⁷⁹ have however argued

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48. US Department of Health and Human Services. The health consequences of involuntary smoking: a report of the Surgeon General. Rockville, Maryland, DHHS Office on Smoking and Health, 1986.
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for a much lower relative risk of 90 increased risk at all. The Committee, studying the same data, agrees with the former interpretation and so upholds the view expressed in its interim statement.

69. It is helpful to state exactly what is meant by a 10% to 20% increased risk. It means that people who have never smoked but who have been exposed to environmental tobacco smoke through most of their lives have a 10% to 20% higher risk of lung cancer than non-smokers not so exposed. If the risk in the latter group is, say, 10 per 100,000 per year (based on rates in non-smokers in the 35+ age range), the risk in the exposed group would be 11 to 13 per 100,000 per year. Thus there might be 1 to 3 extra lung cancer cases a year per 100,000 non-smokers regularly exposed to ETS. Since there are no firm data on the numbers of people who fall into that category, no more than a rough estimate of the actual number of lung cancer deaths arising in this way could be made. It might however amount to several hundred out of the current annual total of about 40,000 lung cancer deaths in the United Kingdom—a small but not negligible proportion. In view of this conclusion we recommend that—

FURTHER PUBLICITY SHOULD BE GIVEN TO THE RISK OF LUNG CANCER ARISING FROM EXPOSURE TO OTHER PEOPLE'S TOBACCO SMOKE

**Respiratory disease
in children**

70. The role of ETS in the development of respiratory symptoms or the occurrence of respiratory illness has been widely studied in children, and more particularly in pre-school children, because they form a group free from the dominant factor of active smoking and the complications of exposure to a wide variety of occupational and general environments. Early studies in the United Kingdom^{74,75} demonstrated the role of parental smoking and since then studies have been carried out in other countries^{76,77}. In most of these ETS has been shown to be associated, in children, with respiratory symptoms, episodes of respiratory illness, and decrements in ventilatory function. Studies failing to confirm these associations were in the main conducted in warm dry areas with low environmental pollution in which less time is spent indoors and homes are well ventilated⁷⁸.

71. Most recent attention has focused on the difficult problem of ETS and lung cancer. ETS, however, may have a far more widespread effect: by enhancing the frequency or severity of childhood respiratory illnesses it could contribute to the development of respiratory disease in adult life among non-smokers⁷⁹. Accordingly, we recommend that—

CONTINUED ATTENTION SHOULD BE GIVEN TO THE INVESTIGATION OF THE ROLE OF ENVIRONMENTAL TOBACCO SMOKE IN THE OCCURRENCE OF RESPIRATORY ILLNESSES IN CHILDREN, AND TO THE LONGER-TERM SEQUELAE.

74. International Agency for Research on Cancer (IARC) Monographs on the evaluation of the carcinogenic risk of chemicals to humans. Tobacco Smoking, Volume 38. Lyon: World Health Organization, 1985.

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72. We have suggested above that ETS is an important indoor air pollutant affecting the comfort and health of individuals, notably of non-smokers who now form the majority of the population in the United Kingdom. The irritant effects are well known and information is accumulating on specific adverse effects on health. For methodological reasons most studies have been concerned with the domestic environment (it is easier in surveys to identify smokers sharing accommodation over long periods with non-smokers in the home, than elsewhere); but exposure may occur in other indoor environments notably in clubs, dance-halls, public houses or in some confined spaces at work.

73. We consider that with the accumulating evidence of adverse effects of ETS the recommendation in our Third Report (para 25) should be emphasized, as follows—

THE TOBACCO INDUSTRY SHOULD PURSUE RESEARCH INTO WAYS OF REDUCING THE AMOUNT, IRRITANCY AND OTHER DELETERIOUS PROPERTIES OF SIDESTREAM SMOKE FROM ALL TOBACCO PRODUCTS.

74. We also believe that action should be taken to reduce the impact of environmental tobacco smoke indoors. The health risks to non-smokers of ETS provide added argument for the overall reduction of smoking in the community, and non-smoking should be regarded as the norm in enclosed areas frequented by the public or employees, special provision being made for smokers, rather than vice-versa. The home environment constitutes an important source of tobacco smoke exposure, especially in the young, but dealing with it is a matter of individual decision. The indoor work and leisure environments, however, with their high aggregate occupancy, may be equally important to adults, and here clear guidance for action is possible. Improved ventilation, or the mixing of smoking and non-smoking areas within the same enclosed space would not seem to provide adequate safeguards against exposure to ETS, which may be dose-hazard related. Hence we recommend that—

CONSIDERATION SHOULD BE GIVEN TO WAYS OF ENSURING THAT IN THE WORK AND LEISURE ENVIRONMENTS, IN PUBLIC TRANSPORT AND IN OTHER PUBLIC ENCLOSED SPACES SMOKERS CAN BE SEGREGATED FROM NON-SMOKERS.

75. We recognise that the whole area of investigation of the composition and concentration of ETS and of the nature and magnitude of effects on health, as discussed above, is a difficult one; it will be kept under review by the Committee as new research findings become available.

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Determinants of Policy on Smoking and Health

PETER FROGGATT

The opinions expressed in this article are personal and do not necessarily reflect the views of the Independent Scientific Committee on Smoking and Health or any of its other members.

Smoking cigarettes is arguably the greatest public health hazard in developed countries and may become so in much of the developing world. The International Agency for Research on Cancer (IARC) identifies some 30 diseases or groups within ICD rubrics as being positively associated with smoking, most causally.¹ 'Excess deaths' attributable to smoking run into tens of thousands every year in the UK alone.

Faced with this scourge governments have appeared to act with an almost uniform timidity: 'paltry and hesitant' even in the measured language of the Royal College of Physicians.² Many critics however do not understand the factors which government weigh in formulating policies. In this article I try to describe simply these often competing determinants, and government's response to them, since the results of the early case-control studies on lung cancer and cigarette smoking³ became parliamentary currency in 1951.⁴ I deal exclusively with the UK where I have been concerned in the government's principal scientific advisory machinery as a member, and from 1981 chairman, of the Independent Scientific Committee on Smoking and Health. Comparison with practices in other countries would be instructive but is beyond the scope of this review.

THE VIEW FROM GOVERNMENT

The mounting evidence during the early 1950s of increasing cigarette smoking in lung cancer set difficult problems for government, the tobacco industry, the medical profession, and (not least) the smoker. The critical factors were seen to be:

- (i) smoking was widespread: in 1950, 77% of men and 38% of women smoked, mostly (in the case of women exclusively) cigarettes.⁵
- (ii) smoking was not a passing fad but a widely accepted and growing habit,

(iii) tobacco products were advertised without restraint and lawfully marketed to all over 15,

(iv) the public favoured strong, non-filtered cigarettes,⁶

(v) the irritant properties and alien aroma of tobacco smoke were offensive, but not harmful to non-smokers,

(vi) death rates from lung cancer were increasing sharply, especially in men, and

(vii) cigarette smoking and lung cancer risk were seemingly dose-related with no threshold effect.

Medical and some lay opinion considered that these demanded action; it was less certain what this action should be. Government on the other hand was instinctively cautious since each of the above had a wider, political, perspective. Thus (i) above, to the doctor an index of high and increasing public health risk, was to the politician a measure of the widespread popularity of smoking. There was no popular mandate to move against it, only political risk. For (ii), nicotine was known to be an habituating drug but in the (small) doses involved in smoking it was considered to be harmless. Moreover, like alcohol, it had a long history of popular acceptance. Addictive or habituating properties, however, were not *per se* a ground for action; that nicotine acts as a proxy for harmful tobacco products and could be considered on this basis was too subtle a concept for an unresponsive legislature. For (iii), the facts did not warrant any infringement of the industry's existing commercial freedom. For (iv), there was no reliable evidence relating strength of tobacco products to their toxicity. For (v), tobacco smoke, while offensive to a minority, harmed only the smoker, and self-poisoning was no longer a crime. Furthermore, the positive tobacco-related diseases were socio-conspicuous. As then seen by government the smoker polluted nothing and injured nobody; to constrain his smoking may or may not have protected his inalienable right to life but would certainly have infringed his equally inalienable rights to liberty and the pursuit of happiness! Even for (vi) and (vii) the message was qualified: for (vii) the evidence was tenuous until

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the results of later prospective studies, while the role of smoking in (vi) had many distinguished sceptics — including R. A. Fisher.¹⁴ Circumlocution, but not inaction, was adopted as government's watchword. In 1951 they responded to the initial incriminating research findings by referring the matter to their Standing Advisory Committee on Cancer and Radiotherapy, then to a panel under the Government Actuary, meanwhile nonvoting in parliament. Then, as the facts became incontrovertible and on the advice of the Chief Medical Officer (CMO), the Minister of Health (Jan Macleod) on 12 February 1954 stated "I accept the [Standing] Committee's view that the statistical evidence points to smoking as a factor in lung cancer... He now moved positively if cautiously and counselled further research, announced a research grant of £50 000 from the tobacco companies to the Medical Research Council,¹⁵ and waited on events. It is true that tobacco duty (then some 30% of all government taxes on expenditure and 12% of total government revenue¹⁶) gave government a vested interest and that introducing even a degree of surtaxive taxation would have been difficult and unpopular in the fiscal circumstances of the time, but even in retrospect the initial government response seems judicious rather than supine.

Some or judicious certain principles were clear and were acted on. The young had to be protected, the Children and Young Persons Act, 1933, forbade tobacco sales to children under 16 years and though widely flouted by unassisted vending machines and automatic vending machines (the average annual prosecutions under the Act, 1945–52, was only 30!).¹⁷ It was considered acceptable in the circumstances.¹⁸ The public had to be told the medical facts and here governments were to their supporters scrupulous, to their detractors neglectful. They were curiously wary. Despite heavy pressure in and out of parliament they refused to sponsor or encourage a national education campaign and conceded only that they "would take such steps as are necessary to ensure the public are kept informed."¹⁹ Until 1957, three years after the Minister's acceptance of the role of smoking in lung cancer,²⁰ this was mainly through parliamentary answer and mixed references in Ministry of Education handbooks for teachers,²¹ but following an MRC report of June 1957²² government involved the local health authorities and the Central Council for Health Education²³ and by mid-1959 were claiming substantial success.²⁴ Again they claimed to be acting judiciously, a belief bolstered by a philosophy of accepting the rights of adults freely to purchase and smoke tobacco and of industry to make, advertise, and sell their products in the market-place. Their third responsibility — to encourage research — they considered to be adequately

discharged through existing general research resources and the industry's £50 000 grant to MRC.

In 1965 the Royal College of Physicians of London (RCP) published its influential monograph *Smoking and Health*²⁵ with its clear message for action. Pressure on government now mounted. At first this pushed them faster and further along the health education track, local health authority education spending was stepped up, posters were distributed by the Ministry of Health including, from 1964, the message 'cigarettes cause lung cancer' to a total of £92 000 in 1966–67, anti-smoking colour films were made, millions of matchbox booklets were issued, and a postmark cancellation 'cigarettes harm your health' was briefly used.²⁶ It also pushed them to support anti-smoking clinics and issue smoking cessation leaflets.²⁷ More daringly, they constrained advertising for the first time in 1965²⁸ (industry had tried to pre-empt this with a modest self-censoring voluntary ordinance on over-persuasive advertising to the young in 1962), and, harmed in parliament,²⁹ the Minister of Health (Kenneth Robinson) in 1967 went further and tried to persuade the tobacco manufacturers to voluntarily restrict their aggressive press and point-of-advertising and sales promotion campaigns, though unsuccessfully.³⁰ The mood of the country however had changed since the 1950s and government now answered this rejection of their advances by the industry by deciding 'in due course to take powers to ban source gift schemes and other promotional schemes, to forbid or limit certain forms of cigarette smoking, and to limit expenditure on advertising of cigarettes'.³¹ This threat ultimately succeeded and did much to convince government to rely mainly on persuasion (and a middle-sized stick!). They still however saw themselves as marginal players and the 1960s ended with their repeated refusal to imitate the USA initiative of printing incriminating labels on cigarette packs or to consider fiscal measures.

With the harsh judgement of hindsight government, in their policies on smoking, were poor custodians of the public health in the 1950s and 1960s. Smoking-related diseases rose inexorably. Much of this increase was due to earlier exposure for which post-1950 governments could not be blamed, but the number of the young entering the smoking ranks could be affected by government policies and here the situation had grossly deteriorated: the percentages of men who smoked in 1951 and 1971 were respectively 62% and 55% and those for women were 33% and 49%.³² This latter year (1971)

³² This was for 1956 and 1971, neither year was an exception. For manufacturing cigarettes, the current national tobacco product licensed to women, the 1951 and 71 figures were 28% and 48%.³³

the tobacco manufacturers spent some £63m on advertising and sales promotion, government and its agencies less than £0.5m.¹⁷ Small wonder the CMO (George Godber) called this situation 'incredible'.¹⁸ Moreover, during these two decades tobacco products relative to wages had become much cheaper,¹⁹ the rate of duty had hardly changed, and tobacco taxation as a proportion of total expenditure on tobacco products actually declined.²⁰ Not surprisingly tobacco consumption increased during the 1950s and when it did start to fall in the mid-1960s it was mainly in higher social class men and in response to medical opinion. Of the seven courses of 'possible action by government' recommended in *Smoking and Health* in 1962, at most only three had been acted on by 1970.²¹ A far more forceful policy from government was needed and was soon to be demanded with medical professional bodies in the van.

THE VIEW FROM INDUSTRY

The demonstration of the association of smoking with disease had immense implications for the whole tobacco industry. In common policies, and those of its principal occupants, are only known from actions and statements; much crucial material lies in classified and restricted archives. It is, however, broadly true to say that the tobacco manufacturing industry has followed a two-prong policy: (i) to make cigarettes 'safer' (or positively 'safer') to smoke — in this way the increasingly health-sophisticated public might continue to smoke them; and (ii) to market alternative tobacco products for those who wished to remove themselves from the hazards of smoking cigarettes without at the same time removing themselves from the pleasure of smoking. Naturally the manufacturing companies competed vigorously with each other for market share, and naturally they also robustly defended their perception of their shareholders' interests, and their fiduciary responsibilities, in their dealings with government, the medical profession, and the public. They had, however, and still have, no desire to sell a harmful product either in the shorter or longer term when they can sell a 'safer' one, and they invested very heavily in research and development into tobacco toxicity as well as product acceptability. In 1954, under government pressure, they gave £250 000 (over seven years) to the MRC 'for research into the causes of lung cancer'.²² In 1956 they coordinated their research through a Tobacco Manufacturers' Standing Committee (the Tobacco Research Council since 1963, now the Tobacco Advisory Council), in 1962 they opened research laboratories at Harrogate with 250 staff, by 1969 they had committed some £6 million in out-of-house research over and above their in-house R and

D,²³ and today they are by a very long way the largest sponsors of research into smoking and health in the U.K. Though much of their effort is directed to their credo that most smokers will continue to smoke some form of tobacco unless deterred by its continued toxicity, a credo justified by events certainly until the 1970s, they have substantially increased our knowledge of nearly every aspect of tobacco toxicity. The industry, therefore, found themselves in part-chorus with government, the smoking public, and the medical profession, all wanted safer smoking but for different reasons! They were however in dissent over anti-smoking objectives which were seen at the time in very simple, and in retrospect simplistic, terms.

How well in the 1950s and 1960s did the policies of the tobacco manufacturers succeed? Undoubtedly very well. Aggressive marketing converted the smoking population to filter tips: 2.3% of all tobacco products by weight in 1956 they were 64.5% in 1970 by which time four of every five cigarettes smoked was filtered.²⁴ Each cigarette was 'safer' than its unfiltered counterpart, less through absorption of noxious substances than because the filter tip displaced a significant weight of tobacco. To compensate for this tobacco loss more cigarettes were bought; between 1956 and 1970 the total weight of cigarette tobacco consumed declined by 9.6% but the number of cigarettes sold increased by 23.5%.²⁵ Furthermore, the industry's second prong — developing alternative products — was also successful. In 1961 the number of cigars and cigarillos sold was 315 million; in 1967, only six years later, it was 123 million,²⁶ meeting the demands of many ex-cigarette smokers not least doctors.²⁷ While all the time the industry was garnering information through its substantial R and D programmes and supplying, and to an extent creating, the smoking market's needs. Its success was as marked as was the failure of the government's anti-smoking policies.

THE NEW INITIATIVES

In the early 1970s renewed pressure in parliament²⁸ and from the profession²⁹ forced government's hand. Their first action, in March 1970, was necessary though modest: they appointed a Senior Medical Officer to coordinate inter-departmental work on smoking and health. More significant action was not long delayed: in June 1971 the Minister (Keith Joseph) announced details of an agreement with the industry on the labelling of cigarette packets and adverts with appropriate health warnings.³⁰ This was the first of the 'voluntary agreements' — portrayed as gentlemen's agreements they were (and are) toughly negotiated compromises — pre-negotiated four years previously by which to the present

day government has sought to effect its smoking and health policies in preference to enforced action.

Government now acted with more vigour. They had, since 1954, warned of the risk to cigarette smokers of lung cancer; now in 1973 they told the public which cigarette brands contained the most tar and nicotine by publishing a brand league table — which is now a biannual series with (from 1984) carbon monoxide yields added. They also, belatedly, recognized the need for symmetrical and above all impartial scientific advice, and in 1973 established the Independent Scientific Committee on Smoking and Health (ISCSH): 'Independent' in that its members are not from government, the civil service or industry, are unpaid, and it reports directly to the health ministers; and 'scientific' in that the members are prominent scientists from cognate disciplines and the Committee's advice is based wholly, necessarily, and exclusively on the scientific evidence without regard to any other considerations. Its general terms of reference are to advise the health ministers 'and where appropriate, the tobacco companies' on the scientific aspects of matters concerning smoking and health. It has no role in making recommendations on other prongs of government policy, in advertising products or in fiscal policy, though it has a role in commenting where relevant on health appraisal and health education. Apart from ad hoc advice it has published four scientific reports which have had considerable influence on government policy,²² with up to £7 million supplied by TAC under the 1980 and 1984 voluntary agreements it sponsors, through the Tobacco Products Research Trust, 25 research projects, and has sponsored an international symposium on the role of nicotine in the product modification programme²³ and is organizing another on the role of smoking in hormone-related diseases.

This Committee at once tackled the basic irony of smoking, namely that most scientists agree (with the exception of one important group²⁴) that it is tar that contains the lung cancer-producing or inducing agents but the smoker smokes mainly to obtain nicotine, which confers undoubted benefit to smokers and may improve performance of non-smokers.²⁵ Absorbing (harmful) tar constitutes in fact an unwanted by-product of absorbing useful (harmless) nicotine. This is an over-simplification but close to the truth. If tobacco could therefore be stripped of its tar, or the absorbable tar greatly diluted, or if all the harmful tar products could be removed in some way or rendered innocuous or inoperative, smoking cigarettes could keep us apparel and lose its main danger, a seductive goal for government, smokers, and the tobacco industry alike. Looking beyond this, since smokers seek mainly nicotine why bother with tobacco at all; why not have an inert combustible

substance which contains adequate nicotine which can then be inhaled when burnt, or nicotine tablets, or wedging impregnated with nicotine which will dissol over at room temperature or, with a source of heat, at lower temperatures than pyrolysis, or some other product of ingenious tobacco technology; or why not suck or chew tobacco so exchanging a low risk of buccal cancer for a high one of lung cancer? All of these have been tried at one time or other, some are current today and others will be with us tomorrow. Their basic objective is the same, viz to supply nicotine to the brain in a rapid, efficient, and effective manner, where it is pharmacologically active, without absorbing too much harmful tar, preferably without absorbing any. When confined to smoked tobacco this policy is called 'product modification', and the programmes devised by the ISCSH and industry and negotiated by government with the Tobacco Advisory Council (TAC), in a series of 'voluntary agreements' (in 1973, 1977, 1980, 1984) is called the 'product modification programme'.

Product Modification

The first method tried was an ambitious one, viz tobacco substitutes, ie replacing much of the tobacco in a cigarette with essentially a tar-free substance, base and other attractions of pure tobacco being preserved by additives. The first work of the ISCSH was in fact in establishing with industry acceptable means of testing tobacco products and substitutes, and the possible toxicity of additives. In July 1977 two large tobacco manufacturers marketed cigarettes containing respectively the 'substitutes' Cyrel and New Smoking Material (NSM) — these cigarettes were a commercial failure and were eventually withdrawn losing for the companies concerned many millions of pounds, for a decade something of their zeal for such radical change, and possibly something of their admiration for the fledgling ISCSH! This caused some strain but government, steady as my view, realized pressure for more rigorous alternative action, and in many ways endorsed its own faith in voluntary agreements. Government in fact had come a long way since 1970: it now had a clear and agreed scientific policy (product modification) based on increasingly sound *a priori* grounds; it had the means of implementing it (voluntary agreements); and it had reasonably coherent general strategies. Most importantly it has supported the ISCSH: it has widened its terms of reference, has only once failed to accept the Committee's advice and that unimportantly,²⁶ and in March last year accepted the recommendations in the Committee's Fourth Report. If government was laggardly up to 1970 it has since done more, and often much more, than most advanced

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approach and in the past decade has seen its policies produce a 25% reduction in total smoking, an average reduction per cigarette of 30%, a substantial decrease in lung cancer in younger age groups,¹⁰ and the cessation of smoking from social norm to a minority habit. Only in the lower socioeconomic groups and in young women has progress been disappointing. It is speculation as to whether the more robust measures that some recommended would have produced more beneficial results or been counter-productive.

Having failed with substance the Committee, government and the industry espoused systematic gradualism. Under repeated voluntary agreements salt-reduced air, nicotine and toxic gases were reduced gradually, at most 50% (Table 1). Full details of this product modification programme are in the Committee's Fourth Report.¹¹ Briefly, there are two pre-conditions for its success. First, that the Committee's scientific assumptions are correct: that the toxic materials in tobacco are in the tobacco tar and/or are products of its combustion; and that there is a dose response with the diseases they cause (most particularly lung cancer) without a significant threshold of safety. Second, that the programme develops in the context of an increasingly sympathetic environment for less smoking and for lower-tar products and is not so ambitious as to prompt expeditious resistance from the consumer. This 'consumer resistance' operates through so-called 'compensatory smoking', a mechanism by which the smoker maintains the nicotine dosage which his body is conditioned to need for optimum efficiency, effectiveness, and enjoyment. It is a crucial phenomenon and is briefly as follows.

There are three main mechanisms: first, the smoker can simply smoke more cigarettes; second, he can switch to a stronger brand; third, he can 'over-smoke' a cigarette — longer and more frequent pulls, shorter burns, etc.

Each of these increases his tar exposure; combining them is a cornerstone of the Committee's policies. The ICSH can have little to say on obvious measures to limit the number of cigarettes consumed smokers smoke other than in health awareness fields but it can adopt policies with respect to the other two mechanisms of 'compensatory smoking'. One such means is to ensure that stronger brands are not on the market. For some years this has held for new brands, but last year ICSH recommended an upper tar limit of 16mg per cigarette for all brands 'as soon as possible' and reducing to 14mg after four years.¹² Another is to gradually reduce tar levels in popular brands though without risking significant switching to higher tar brands. This is being done by ingenious tobacco technology.¹³ Another is to develop the market for low tar cigarettes by selective advertising and brand promotion supplementing the health education message. The industry, despite its critics, has been active: by February 1986, 33 of 138 brands included in the Laboratory of the Government Chemist biannual survey were low tar (0-9.99mg per cigarette) as against 9 of 114 ten years previously, though since about 1980 their market share has plummeted at about 13%.¹⁴ (Some are unhappy with 'selective' advertising on the grounds that it is still advertising of tobacco: this issue is too complex to discuss here). Yet another is to exploit the desire for nicotine of inveterate smokers as a means of reducing their tar exposure: since nicotine plays an important role in influencing 'compensatory smoking' it follows that by maintaining the nicotine yields of cigarettes while *part passu* lowering the tar yield (by sophisticated tobacco and cigarette technology), tar intake can be reduced more than by lowering nicotine and tar in equal proportions. This in fact has been pursued over the last few years (Table 1). There are technological limits to this approach and it sets moral, philosophical, and political problems concerning using an habituating drug in this way especially in the young and new smoker, as recently discussed,¹⁵ nevertheless the Committee recommended some limited trials.¹⁶

This product modification policy based on gradualism has proved robust and effective. The low tar programme has contributed significantly to the reduction in lung cancer mortality in the younger age groups (who have not been exposed to high tar products in their shorter smoking history) and possibly also to the reduction in chronic obstructive airway disease. Its role in ischaemic heart disease, however, is equivocal.¹⁷ Further information will emerge from on-going studies worldwide including many of the 25 projects sponsored by the Tobacco Products Research Trust on behalf of ICSH.¹⁸

Table 1 Annual mean-weighted tar, nicotine, and carbon monoxide yields (mg/cigarette) of manufactured cigarettes in the UK

Year	Tar	Nicotine	CO
1974-80	32.9	2.00	18.6
1975-81	30.4	2.03	20.6
1983	31.3	2.08	18.8
1979	22.3	1.36	17.1
1975	17.9	1.34	16.2
1980	16.3	1.30	16.6
1982	13.4	1.32	15.2
1984	14.6	1.28	14.1
1985	14.6	1.31	14.7
Mean*	23.55	1.21	14.42

Source: What is in a cigarette (11) Sect 2, ICSH Fourth Report (reference to 23) Sect 1

* Based on data from the 27th Survey of the Laboratory of the Government Chemist, January-June 1986.

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CURRENT PERCEPTIONS

Anti-smoking groups argue that the above approach merely plays at the margins. They seek more direct government action including draconian increases in tobacco duty arguing that until about 1980 tobacco products were becoming cheaper in terms of disposable income, that tobacco taxation as a share of total expenditure on tobacco products was actually falling,¹⁰ and that swinging increases in duty had helped control the gin-walling epidemic in the mid-eighteenth century. They also emphasize that the perceptions on which government originally devised its strategies have essentially changed especially since the early 1970s. These two contentions are now examined together with recent proposed EC Directives.

Change in Strategic Perceptions

Of the seven 'critical points' listed at the start of this article and which influenced government policy in the 1950s, all but two had changed by the 1980s: some through government action. The two which remain as *unchangeable facts* are, the non-contagious nature of tobacco-related diseases; and the acceptance of a low or zero threshold effect of cigarette smoking and lung cancer. Such a dramatic change in strategic perceptions would alone make a reassessment of policy timely; recently government has merely pressed on along established paths and tightened existing screws. There is another, more pressing, reason, viz environmental tobacco smoke (ETS, also called 'passive' or 'involuntary' smoking) has since 1986¹¹ been generally accepted as a health hazard: a (small) increased risk of lung cancer in consistently exposed non-smokers, and respiratory symptoms, episodes of respiratory illness, and decrements in lung function in suitably exposed young children.¹² The argument that smokers poison only themselves (or their unborn children!) can no longer be convincingly sustained. The conceptual framework within which government, industry, and the profession have worked, is fundamentally changed. Naturally the industry opposes the belief that ETS is harmful to health and seeks vigorously to dismiss the supportive scientific findings as methodological artifacts,¹³ and some workers agree.¹⁴ It is easy to see why the industry's opposition is total. It is also easy to see why many call for more dynamic action from government. It is, however, less easy to foresee how and to what extent government will respond. In March 1987 they accepted the ICSH *Interim Statement* incriminating ETS,¹⁵ and in March 1988 also the Committee's *Fourth Report* (including a detailed re-statement of its earlier position) now with specific recommendations,¹⁶ which will probably form a basis for formulation of government

policies. Only one of these, viz possible ~~exemption~~ of smokers from non-smokers in work and other leisure environments may lead to more direct action. The question of ETS is undoubtedly the most difficult one for the tobacco industry and its formal and informal regulators, since the causal association of cigarette smoking and lung cancer was demonstrated.

Tobacco Duty

The effect of changes in overall cigarette price largely dictated by tax; on the amount and distribution of smoking is, like that of advertising, ~~complex and~~ Some facts are not in dispute. Tobacco tax brought far from a negligible source of revenue — equivalent in 1986-7 to about 4p on the basic rate of income tax or raising VAT from 15% to 20%¹⁷ — now provides only some 4% of government revenue as against over 16% 40 years ago. VAT and petroleum revenue are an ~~example~~. Cigarettes are far cheaper now in terms of real rates and at least 25% below their 1948 price level in real terms.¹⁸ Low-income groups spend a large proportion of their income (on average) in taxes on tobacco as they reduce their smoking more in response to tax increases; some even hold that the downward drift in real cigarette prices has been a major factor in widening the gap between upper and lower class smoking patterns and largely negating the benefits of health education programmes.¹⁹ Furthermore, if, against the evidence, tax increases led to diminishing returns, taxes could now easily be recouped from other sources. Economists have recently tried to quantify the relationships with varying results^{20,21} though most agree that the higher the price of tobacco the less will be consumed and that there would be no significant diminishing returns in the shorter run. One group suggested that a 10% real increase in taxation would cut tobacco consumption by 5-6% and increase tobacco revenue by up to 7%.²² This would be a highly desirable public health outcome: better health and more tax revenue! Why then has government been reluctant to sanction significant increases in tobacco excise duty (there was a 16% increase between 1980 and 1981) but since then the average increase in real duty per cigarette has only marginally exceeded inflation) or instead a half-blooded policy of differential duty dependent on tar strength — that on cigarettes yielding more than 20mg tar imposed in September 1978, was withdrawn in 1981 — especially since the net effect on the overall economy by further reduction in tobacco manufacturing and contributing activity would be minor.²³ The main reasons seem to be: (i) a political caution at 'over-taxing' what is still a widely practiced indulgence (alcohol is a similar case), (ii) a belief that if price response is low from tobacco

tax is regressive and socially inequitable,¹³ and (iii) its effect on RPI. The first lies in social attitudes which can and should be changed. Remedy (ii) has been challenged,^{14,15} and it may be that modern work will remove the 'regressive' argument. While on (iii) a recent government estimate is that an increase of 30p duty on a packet of 20 cigarettes would increase RPI by 0.7%.¹⁶ The economic argument against fiscal measures to reduce smoking is not impressive.

EC Directives

On 4 February 1988 the Commission of the European Communities submitted to the Council draft Directives to approximate the laws of member states on (i) labelling of tobacco products and (ii) the maximum tar yield of cigarettes. The former, if accepted, will require all users of packaging of tobacco products to carry the message 'Tobacco seriously damages health' in the official language of the country and, in the country's own language, as a minimum, one of two specific warnings, viz 'smoking causes cancer' and 'smoking causes heart disease'. Also, tar and nicotine yields are to be indicated on each packet of cigarettes which are unlikely to cause serious problems in the UK. The latter draft Directive, however, if accepted, will, it specifies an upper limit of tar yield for all cigarette brands (15mg by 31 December 1992 and 12mg by 31 December 1995) without mention of sales-weighted average tar levels which in the UK in 1988 was about 13mg per cigarette and is recommended by ICSH to be reduced to about 12mg by end-1991.¹⁷ If accepted in its present form this Directive could be retrogressive in the UK by allowing manufacturers (if they so wish) to increase the tar levels of many of their brands in the Low to Middle Tar (10-14.99mg per cigarette) range and, without countervailing change in market profiles, the sales-weighted average tar levels would increase. Representation on these lines has been made in Brussels.

In addition two further Directives are being drafted, one on curbing smoking in public places, the other on preventing sales of tobacco to those under 16 years of age. In principle neither would cause problems to current government thinking although in the former the use of mandatory directives rather than discretionary limits of action might. Only on the matter of tar levels may harmonisation 'post-1992' lead to problems for the UK anti-smoking policies as the Directive is currently drafted.

COMMENT

Government has a responsibility to improve the public health. Smoking tobacco, especially cigarettes, has for nearly 40 years been a demonstrable health hazard to

the consumer, and recently KTS has been increasingly accepted as a health hazard to exposed non-smokers through 'involuntary' smoking. This third party risk introduces a new dimension to the traditional problem of smoking and health which the tobacco industry has been quick to perceive in its publicity campaigns and in the thrust of much of its sponsored research towards questioning the methodology of the supportive studies. Hopefully government will be as alert in discharging its own responsibilities.

There are many means by which tobacco consumption can be reduced and these depend upon action by smokers, non-smokers, educators, health care professionals, and most importantly government — who should consider all means open to it to effect a reduction in smoking. Part of government's past failure and seeming dilemmatism has been the diffusion over several bodies of responsibility for effective action: thus taxation, art and sport sponsorship, health education among the young, sales promotion, and environmental restrictions, the armoury of government's anti-smoking campaign, are the responsibility of various departments other than the Department of Health. These structural problems have undoubtedly compounded any lack of political will and deprived government policies of much necessary focus, cohesion, and impetus.

One area which is however very much a Department of Health responsibility is the toxicity of tobacco smoke in marketed products, and the product modification programme. The importance of this issue is often paid only lip-service by anti-smoking lobbies — and (for different reasons) also some pro-smoking lobbies — since they hold that espousing it weakens all-out resolve to terminate smoking. They argue that commitment to cessation and not to encouragement of 'less hazardous' smoking with its tolerance to (low tar) advertising and its countenancing of continued smoking, is needed. I have explained in this article why this criticism is based on a misinterpretation of the ICSH policies. The Committee perhaps keeps too low a profile since often its work seems not just misunderstood but hardly even to be known — the latest (1983) report of the RCP in its discussion on product modification is an example¹⁸ — yet raising it might compromise the excellent working relations it has developed with all parties which has ensured the quality and acceptance of its advice.

More valid is the criticism that whatever is the strength of the *a priori* case for a low-tar programme, product modification, the key ICSH policy, has not been shown to have contributed to a reduction in smoking-related disease. After the Committee's *Fourth Report* this no longer holds for cancer of the lung and chronic obstructive pulmonary disease: the situation concerning

ischaemic heart disease is more equivoal and the undoubted role of smoking in its aetiology is still an enigma.¹⁰

While the search for the cancer-producing agents in tobacco continues the reduction of tar and other 'toxins' must continue also. Such empiricism is not new in public health. But should it be effected through voluntary agreements or legislation? As things stand I can see no advantage, and some disadvantages, in the latter. Government, as already noted, has been able to incorporate in its four voluntary agreements with the industry all but one of the ICSH recommendations and has accepted the recent *Fourth Report* completely. If the situation changed, however, I might think differently! In any event the 'post-1997' situation which the current and proposed EC Directives foreshadow, will lead to a new situation.

Less conjectural is the Committee's need to continue to supply government and the industry with the best scientific advice as its brief demands. In the important and intensely complex field of smoking and health the Committee needs to be enabled to sponsor research and not have to rely on an eclectic choice from the often unsystematic and unhelpful (in the context) world literature. The UK is an acknowledged leader in 'less hazardous' smoking policies; crucial population research is not likely to be carried elsewhere. The monies supplied by TAC to ICSH since 1981 for research to monitor the effects on human health of product modification and which supports 25 projects are now fully committed. It is vital to the whole future of national public health policies in smoking and health that further funds from some source be made available to the Committee under terms which it can accept without compromising its status or standards. We must await the terms of any new voluntary agreement which may replace the one which expired at the end of 1987.

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CUTTING BUREAU
Extract from:
OCCUPATIONAL SAFETY
AND HEALTH
- Birmingham -

-- JUN 1984



A smoking gun?

John Meltzer, Solicitor with Lovell White Durrant reviews some of the scientific evidence relating to passive smoking in the workplace and considers the legal obligations of employers under common law and statute.

Recent articles in legal and trade journals have suggested that UK employers who do not institute workplace smoking bans could have to pay damages to employees injured as a result of exposure to environmental tobacco smoke (ETS), sometimes known as 'passive smoking'.

It has even been suggested that employers could face criminal prosecution for offences under health and safety legislation. Similar views have also been expressed about the situation in the United States.

In my opinion, such views fail to take adequate account of the current state of scientific knowledge regarding ETS, the advice actually being given to employers by authoritative bodies, and the likelihood of such suits or prosecutions succeeding.

ETS: a health risk?

The proposition that employers could be liable for a failure to ban smoking in the workplace is based on the view, which is usually accepted without question, that ETS is a risk to health. It is first necessary to consider whether the evidence supports this view.

Most of the scientific discussion about exposure to ETS and health has centred on epidemiological evidence. Epidemiology is the study of the distribution and determinants of disease in specified human populations. In the simplest terms, epidemiological studies attempt to quantify the difference in risk of a particular disease or condition between persons who have a particular exposure and persons who do not.

If the disease or condition has a higher incidence among the persons exposed than those not exposed, then the increase in risk can be expressed in percentage terms. This percentage can be thought of as representing the increased chance of those persons exposed developing the disease or condition. By way of example, some epidemiological studies of people occupationally exposed to asbestos have reported an increase in the risk of lung cancer of around 400 per cent.

There have been over 30 epidemiological studies of the possible association between ETS and lung cancer alone. The results of these studies are extremely difficult to interpret, and their significance hard to assess. The most that an employer could reasonably be expected to do is to familiarise himself with the landmark reviews of the scientific evidence.

In the UK, the best known review is that of the 1988 Fourth Report of the Independent Scientific Committee on Smoking and Health (the Froggatt Report). This report is also the foundation for the Government's policy on workplace and public smoking and for the advice given by the Health and Safety Executive.

The Froggatt Report concluded that the epidemiological evidence was consistent with a 'small increase' in the risk of lung cancer in the range of 10-30 per cent among non-smokers exposed to ETS.

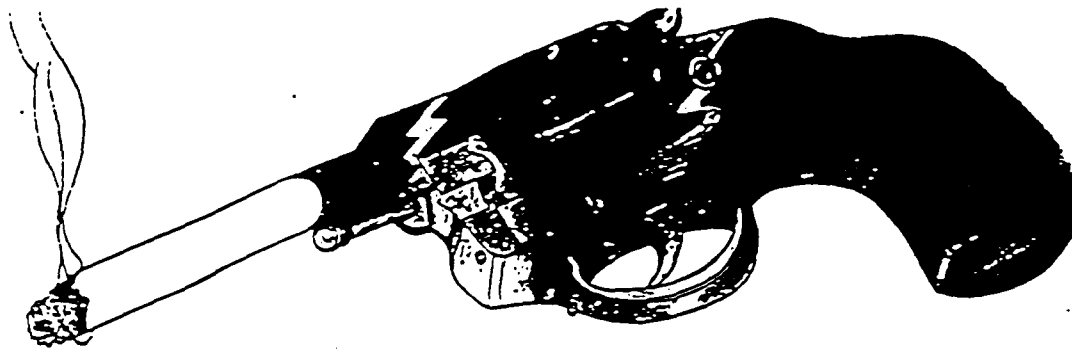
The report went on to explain that an increase of this magnitude '...means that people who have never smoked but who have been exposed to ETS through most of their lives have a 10-30 per cent higher risk of lung cancer than non-smokers not so exposed... thus there might be 1 to 3 extra lung cancer patients a year per 100,000 non-smokers regularly exposed to ETS'.

The report also acknowledged that there was disagreement among scientists at the time as to whether even these limited conclusions were sustainable on the evidence, with some arguing for 'a much lower relative risk, or no increased risk at all'. Since 1988, results from 12 more studies on ETS and lung cancer have been published, some of them much larger than any of the earlier studies examined by the Froggatt Committee. The combined results of these later studies fail to support even the claim of a 'small increase' in risk.

It is worth noting that the evidence available to the Froggatt Committee on ETS and lung cancer consisted almost entirely of questionnaire-based studies of non-smoking spouses who have been exposed to ETS in their home over long periods of time. The overall epidemiological evidence on workplace exposure does not show any increase in risk at all.

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A smoking gun?

Although considerable publicity was generated early last year by the *Veronica Bland* case, in which a claim was made against an employer on the basis of the alleged respiratory effects of ETS (see below), the *Froggatt Report*, while acknowledging that ETS may be an irritant, drew no further conclusions about the respiratory effects of exposure in adulthood.

In the United States, employers can hardly fail to have heard of the much publicised risk assessment issued early in 1993 by the Environmental Protection Agency (EPA) which classified ETS as a group A (a 'known human') carcinogen. The EPA altered its statistical procedure in mid-review and failed to consider two ETS and lung cancer studies, one of which was the largest ever conducted.

The EPA's controversial approach has been described by a journal of commentary on current events, the *National Review*, as 'statistical sleazebag' (sic) (July 19, 1993), and by sundry commentators as 'junk science'. The EPA's assessment is also now the subject of a lawsuit.

Like *Froggatt*, the EPA did not conclude that ETS was a cause of respiratory disease in adults. Moreover, neither does nor, to my knowledge, any comparable authorities, have given credence to the claim that ETS exposure has been shown to cause heart disease.

A legal perspective

What then are the legal duties of an employer in respect of ETS in the workplace?

It is still the case that there are no general legal constraints relating to smoking and the workplace,² except where necessary for reasons of safety, eg fire risk or hygiene. The policy of the UK government is that any restriction on smoking in public places and workplaces should be voluntary, and indeed the Palace of Westminster itself continues to make provision for MPs and staff who choose to smoke.

Nevertheless, employers do have common law and general statutory duties to protect the health and safety of their employees.

Common law duty

It is well established that employers have a common law duty to take reasonable care for the health and safety of their employees. Employees, who suffer injury as a result of a breach of this duty, have a remedy in damages. The conduct

of any individual employer will be judged by what might be expected of the 'reasonable and prudent employer', with positive thought for his employees in the light of what he knows or ought to know.

Where there is developing knowledge of possible risk the employer should keep reasonably abreast of developments. In applying that knowledge, the employer should seek to 'weigh up the risks in terms of the likelihood of injury occurring and the potential consequences if it does and he must balance against this the probable effectiveness of the precautions that can be taken to meet it and its expense and inconvenience they involve'.

The UK courts have not yet had to consider whether or in what circumstances an employer, as part of his duty of care, should take steps to protect his employees from exposure to ETS. Any case would obviously turn on its facts. The court would need to consider what the employer knew or should have known about the possible risk of ETS, or any particular susceptibility of the employee who had brought the action.

It would also be necessary to consider the character of the working environment itself — eg size of the workplace, proximity of employees to each other, number of smoke vs. non-smokers, provisions for segregation, adequacy of ventilation etc.

In an actual case, the employee would have to demonstrate not only that the employer breached his duty of care, but also that the employee's injury was actually caused by exposure to his colleagues' smoke at work. This could be an extremely difficult task.

The main problem which the employee will face is that even if it can be shown that ETS is a possible cause of injury, it will almost certainly be only one among a number of possible causes. All of the diseases and conditions to be associated with ETS are also said to be associated with a host of other factors — outdoor pollution, occupational and other exposures, dietary variables, genetic predisposition etc. The onus will be on the employee to prove that ETS exposure, rather than any of the other factors, was the most probable cause.

Since many of the other factors are practically unavoidable in our modern way of life, this is likely to be very hard to prove. Given that the employee himself will be arguing that ETS was the cause of his injury, his problems will be compounded if, as might be expected, he has been exposed



JA OS&H, June 1994

The court found that the employer had a duty to ensure that the work environment was safe and sound. The court found that the employer had a duty to ensure that the work environment was safe and sound. The court found that the employer had a duty to ensure that the work environment was safe and sound. The court found that the employer had a duty to ensure that the work environment was safe and sound.

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Statutory duty

Section 2(1) of the Health and Safety at Work Act 1974 imposes a general duty on an employer 'to ensure, so far as is reasonably practicable, the health and safety and welfare at work of all his employees'. The ambit of this duty is spelt out more precisely in subsection (2), which stipulates that the employer's duty extends to 'the provision and maintenance of a working environment for his employees that is, so far as reasonably practicable, safe, without risks to health, and adequate as regards facilities and arrangements for their welfare at work'.

It has been suggested that an employer might be

The court found that the employer had a duty to ensure that the work environment was safe and sound. The court found that the employer had a duty to ensure that the work environment was safe and sound. The court found that the employer had a duty to ensure that the work environment was safe and sound. The court found that the employer had a duty to ensure that the work environment was safe and sound. The court found that the employer had a duty to ensure that the work environment was safe and sound.

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There has, however, been a recent case in Australia under similar legislation. The Department of Health of Western Australia prosecuted a casino for having allegedly 'failed to ensure that effective measures were taken to control the level of... environmental tobacco smoke so that the health and safety of its employees was not at risk'.

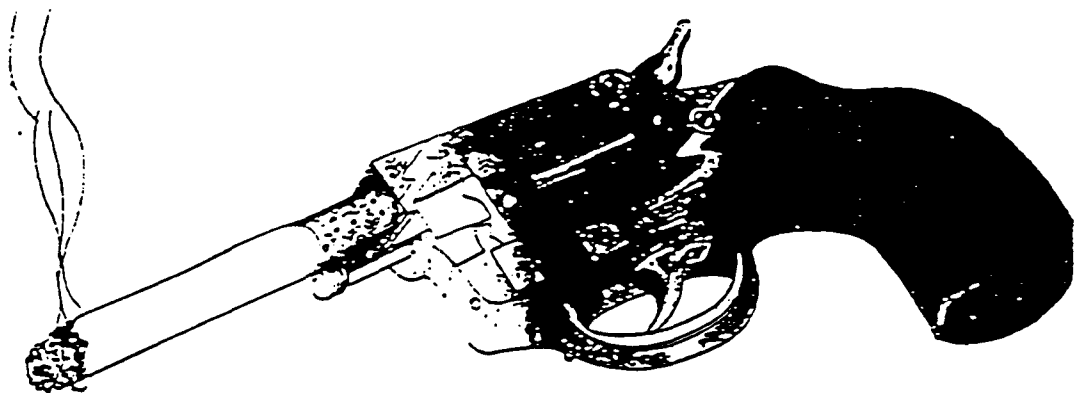
The prosecution failed for lack of persuasive evidence. The magistrate concluded that given the *crabbin* of opinion amongst experts of undoubted eminence on both sides, the court could not assure itself of the correctness of the opinion as against the other, and thus it had not been proved 'to the required standard, or at all' that ETS posed a risk to the health of the casino employees.

The question might yet be tested in the United Kingdom.



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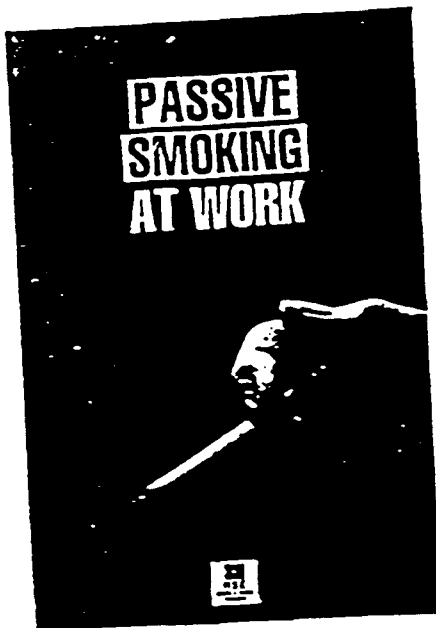
A smoking gun?

What should an employer do?

Employers have reacted in different ways to concerns over the possible risk of ETS. Some employers have banned smoking outright; in some extreme cases, employers have even prohibited smoking on the way to and from work. By contrast other employers have simply left it to staff in different areas within their organisation to decide for themselves, which usually means that the majority have their way. The former response is unnecessary, the latter unsatisfactory.

Employers seeking guidance are likely to be bewildered by an array of advice from persons who have set themselves up as experts. Clearly, a responsible employer would fall in his duty if he did not consider whether, in the light of the information available about the possible risks of ETS, some steps should be taken to protect his employees from exposure.

Employers in the UK may wish to follow the guidance given by the Health and Safety Executive (HSE) in its booklet:



SO 6524 (rev 1994)

Passive smoking at work. This should minimise whatever risk may exist of their being sued or prosecuted for failing to protect the health and welfare of their employees.

The HSE recognises that 'there is no single ideal policy on smoking as each workplace is different'. An outright ban is not the only option; indeed, as the HSE states, 'in practice such measures (total bans) are usually not acceptable, nor would they be enforceable'.

Having said that, the HSE clearly recommends that all employers should have a specific written policy on smoking in the workplace. Apart from a ban, which is unlikely to be acceptable to employees who smoke, the HSE suggests the provision of designated enclosed smoking areas or the segregation of smokers and non-smokers in different rooms. Employers should also remember that the ventilation system must always function effectively in any event.

The HSE also emphasises the importance of employers consulting with all their employees, before introducing a smoking policy. The HSE believes this will help maximise the chances of acceptance by employees and ensure that the policy is appropriate for the particular workplace.

Employers are under no legal obligation to ban smoking in the workplace and it would be rash for employers to impose bans out of a fear of civil or criminal liability. For the reasons discussed in this article, the chances of liability being established against an employer are remote.

On the other hand, it is not suggested that employers should ignore this issue. They would be well advised to have a specific written smoking policy, introduced after consultation as the HSE recommends, that can be sufficiently flexible to meet the requirements of their particular workplace and of their employees, smokers and non-smokers alike.

*Note: Where rest facilities have to be provided under the *Workplace (Health, Safety and Welfare) Regulations 1992*, arrangements should be made to protect non-smokers from 'discomfort' caused by tobacco smoke. These regulations have been in force since January 1993 for new workplaces; they take effect for existing workplaces in January 1996.

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SPECIAL COMMUNICATION

Catastrophe theory and tobacco litigation

Richard A Daynard

Abstract

While the tobacco industry has thus far been successful in fending off product liability suits, thereby reducing litigation activity against it, a possible industry defeat in any of six legal areas would be likely to produce dramatic increases in anti-tobacco litigation. Public outrage at accumulating evidence of industry fraud and conspiracy increases the probability of civil or even criminal liability. "Public interest" actions may permit courts to enjoin unfair and deceptive marketing techniques. Recent judicial decisions have simplified the process of winning tobacco products liability suits. Third-party victims, whether of cigarette-caused fires or of environmental tobacco smoke, make especially appealing plaintiffs. Smokers are beginning to seek reimbursement for their expenses in breaking their nicotine addiction, while insurance companies and uncompensated health care providers may begin suing cigarette manufacturers for their fair share of health care expenses.

(Tobacco Control 1994; 3: 59-64)

Since the first review of tobacco litigation appeared in *Tobacco Control* two years ago,¹ there have been promising developments but no breakthroughs. Advocates have been accused of "crying wolf", with sceptics arguing that predictions are better made by extrapolating from the industry's proud record of never having paid a penny to its victims than by analysing potentially favourable developments which have yet to produce a payout.²

There is a limited but important class of tobacco cases where the plaintiffs have won... but not against the tobacco industry. In cases involving employees who have been injured by environmental tobacco smoke (ETS) on the job, employers have been required to pay substantial damages. Thus, for example, in 1992 an Australian psychologist recovered \$85 000 from her employer, the Department of Health, for having exposed her to ETS from 1974 to 1984, thereby causing her emphysema and aggravating her asthma. The evidence suggested that the Health Department should have known from the late 1970s about the dangers of ETS, and was therefore both negligent and in violation of laws protecting employees from "vintated" air and "injurious or offensive" fumes.³ In 1993, an employee in the Honolulu city attorney's office recovered disability compensation benefits for

her adenocarcinoma of the lung; the Director of Hawaii's Disability Compensation Division accepted her evidence that her cancer was caused, at least in part, by her 26 years of workplace exposure to ETS.⁴

The sceptics' main claim, however, that the tobacco industry itself is untouched and thus presumably untouchable, remains to be refuted.

The first thing to notice is how hard the industry has worked to maintain its "we-never-paid-a-dollar" status. Michael Perschke, co-Director of the Advocacy Institute, has estimated that the industry spends \$600 million per year defending the 50 or so cases pending against it.⁵ *Time Magazine* estimated that the industry spent at least \$75 million defending the Cipollone case alone.⁶ Indeed, an R.J. Reynolds attorney made the strategy explicit in an internal memorandum: "the way we won these cases was not by spending all of Reynolds' money, but by making that other son of a bitch spend all of his."⁷ Spending far more to defeat each case than would be required to settle the case would make no economic sense, however, if the stakes were limited to that one case. Rather, what the industry fears - and must fear - is not writing checks to a few plaintiffs, but the public collapse of its reputation as being invulnerable to legal claims.

The industry's predicament can be explained through "catastrophe theory". "A mathematical model for dealing with discontinuous and divergent phenomena," catastrophe theory applies to situations characterised by bimodality, radical instability at the point of transition, acute sensitivity to slight changes in the initial conditions in determining which of the two possible modes is initially assumed, hysteresis (a stickiness to the current mode of behaviour, delaying the transition), and sudden changes from one mode of behaviour to another. Where catastrophe theory applies, extrapolation from past conditions is extremely hazardous.

Like asbestos litigation,⁸ tobacco litigation is probably bimodal. In the current situation, with fewer than 100 cases pending, only especially brave or committed attorneys attempt to take on the cigarette companies, who are playing "king of the mountain", outspending each attorney who dares attack them. We can imagine a situation in which plaintiffs' attorneys are no longer frightened of the industry: there would then be tens of thousands of cases, reflecting the tremendous toll that cigarettes take.⁹ It is hard to imagine an

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intermediate, relatively stable situation, cases flowing successfully through the legal system, just a few at a time. Rather, the situation would be likely to be radically unstable at the point of transition, since many lawyers would jump in once their expected returns began to exceed anticipated costs.

Furthermore, had the first wave of tobacco litigation prevailed, as it came close to doing,¹² we would now be in a situation in which the tobacco industry's victims would ordinarily bring suit assuming intervening political developments had not transformed the situation entirely. Thus, the current, low-litigation mode is the result of the earlier situation, which could easily have been different. The current situation is obviously sticky, since a plaintiff's attorney will have to be unusually lucky, skillful, or well financed to beat the industry, and thereby transform the situation to the high-litigation mode. Finally, since any plaintiff's "breakthrough" will surely be widely and prominently reported, the transition between modes would be likely to occur very quickly.

Since we are now in the low-litigation mode, the question remains whether anything is happening that could produce a catastrophic tobacco industry loss. In fact, there are currently six developing areas of tobacco litigation, any one of which could produce such a catastrophe.

Fraud and conspiracy

The US Supreme Court's 1992 decision in *Cipollone v Liggett Group, Inc.* made clear that claims that the cigarette companies engaged in intentional fraud or misrepresentation, whether by false representation of a material fact or by concealment of a material fact, are not pre-empted. It also held that claims alleging a conspiracy "to misrepresent or conceal material facts concerning the health hazards of smoking" were not pre-empted; indeed, in a footnote it quoted District Judge Sarokin's description of the evidence of conspiracy:

"Evidence presented by [petitioner], particularly that contained in the documents of [respondents] themselves, indicates... that the industry of which these [respondents] were and are a part entered into a sophisticated conspiracy. The conspiracy was organized to refute, undermine, and neutralize information coming from the scientific and medical community..."¹³

The documents Judge Sarokin saw in the *Cipollone* case may just have been the tip of the iceberg, in terms of potentially incriminating material in tobacco industry files. In *Haines v Liggett Group, Inc.*,¹⁴ Judge Sarokin reviewed an additional trove of documents, these drawn from the Council for Tobacco Research's "special projects" division. He found support in these documents for finding that "the industry research which might indict smoking as a cause of illness was diverted to secret research projects and that the publicized efforts were primarily directed at finding causes other than smoking for the illnesses being attributed

to it." He concluded that these documents were not protected by the attorney-client privilege, as the industry had claimed, because the industry's attorneys had been participating in an on-going fraud (the "crime fraud" exception). While his pithy summary of the situation, that "despite some misgivings, the tobacco industry may be the king of concealment and disinformation," led an appellate court to disqualify Judge Sarokin from further consideration of the case on grounds of "an appearance of partiality," the court agrees that the evidence used by Judge Sarokin would support his conclusion that the "crime fraud" exception applies.

Judge Sarokin's opinion in *Haines* precipitated a criminal investigation by the US Attorney's office in Brooklyn, New York,¹⁵ to investigate whether or not there had been misrepresentation of the dangers of cigarette smoking in order to prop up cigarette sales, and hence industry profits. If there had been such misrepresentation, this would be known in common law as "fraud by trick", and would be grounds for prosecution by US Attorneys as "mail fraud" or "wire fraud", or as a violation of the Racketeer Influenced and Corrupt Organizations Act (RICO).

The *Haines* "special project" documents have yet to be shared with plaintiff's attorneys, and the US Attorney's investigation has yet to be concluded. Meanwhile, the cigarette companies are seeking and obtaining injunctions to keep disaffected former employees from talking with the press or with plaintiff's attorneys.¹⁶ Perhaps the industry will succeed in bottling up these documents, investigations, and witnesses, as well as others like them. If it fails, however, it may lose what remains of its image as a group of reasonably ethical, law-abiding businessmen - an image which thus far has deflected the full anger of jurors, legislators, and the general public.

"Public interest" actions

The Australian Federation of Consumer Organizations (AFCO) pioneered the use of public interest actions in tobacco litigation. "Public interest" actions differ from most civil actions, and from criminal prosecutions, in that they are brought by private parties, but seek relief not for their private benefit but on behalf of the general public. Hence, the plaintiffs are sometimes referred to as "private attorneys general".

AFCO sued the Tobacco Institute of Australia (TIA) to establish the falsity of its claim that "there is little evidence and nothing which proves scientifically that cigarette smoke causes disease in non-smokers".¹⁷ The impact in Australia of the judicial decision upholding AFCO's complaint was similar to the impact in the US of the release of the Environmental Protection Agency's (EPA) report on the health effects of ETS: both had the effect in their respective countries of ending the national "debate" on the dangers of ETS, and of accelerating the trends toward public and private smoking bans.¹⁸ In December 1992

the AFCO decision was upheld on appeal.¹⁹

As public interest actions are not limited by the scope of the plaintiff's injuries, the judicial relief sought can be tailored directly to tobacco control goals. In *Mangini v RJ Reynolds Tobacco Co.*,²⁰ the plaintiff claimed that Reynolds' "Old Joe Camel" marketing campaign targeted children and teenagers, and therefore constituted "unfair, deceptive, untrue, or misleading advertising" in violation of the California Business and Professions Code.²¹ The plaintiff, a domestic relations attorney, is not herself a member of the targeted class, but sues as a person acting for the interests of the general public.

The *Mangini* complaint seeks to require Reynolds to undertake a corrective advertising campaign in print media and on television stations in California to warn consumers of the health hazards of smoking, as well as to disgorge the profits it made from its alleged targeting of minors. The trial judge dismissed the case on the theory that it was pre-empted by the Federal Cigarette Labelling and Advertising Act, but an appellate court reinstated it, concluding that the US Supreme Court's reasoning in *Cipollone*,²² that fraud claims did not come within the pre-emptive ambit of the Act, applied equally to claims that cigarette advertising unfairly targeted minors.²³ While the California Supreme Court is currently reviewing the pre-emption issue, if it finds for the plaintiff, courts in California (and elsewhere) will be able to review the fairness of the industry's behaviour toward children and other vulnerable groups, and to require powerful corrective measures for any unfairness they find. If this occurs, it will require radical changes in the industry's behaviour.

Product liability suits

Tobacco product liability suits seek compensation for the damages which the plaintiff has suffered, either directly through his/her own tobacco-caused disease, or indirectly as the result of such a disease suffered by a family member. Many legal theories have been urged in support of such suits, including fraud and conspiracy, negligence, breach of express or implied warranties, and strict liability.

Recovery for "strict liability" in product liability cases is generally permitted in the US where the product is shown to be "in a defective condition unreasonably dangerous to the user or consumer". Early tobacco liability cases floundered on the notion that a cigarette is not "dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics".²⁴ More recent cases have rejected this reasoning, noting that "information has been widely disseminated only in recent years", that the tobacco industry has vigorously contradicted this information, that a smoker may have become addicted at a young age and years ago, and that therefore, "as a matter of public policy, the manufacturers of

cigarettes should not be immunised from liability for harm caused by their products".²⁵

In 1993 a Mississippi trial judge broke new ground by squarely confronting for the first time the implications of strict liability in cigarette cases. Judge Bogen concluded that:

"...cigarettes are, as a matter of law, defective and unreasonably dangerous for human consumption. Cigarettes are defective because when used as intended, they cause cancer, emphysema, heart disease and other illnesses. That the result reached here imposes absolute liability on the manufacturers of cigarettes for injuries arising from the use of their products is not a departure from the doctrine of strict liability, rather the logical extension of the doctrine in light of present day scientific and medical knowledge and the enormous economic burden which cigarettes place on the nation's economy and its health care system in particular."²⁶

Judge Bogen also made short shrift of the cigarette companies' favourite defence - that the smoker was somehow at fault for using their products in the face of public knowledge of the dangers. He ruled that such a defence was available only where the consumer's conduct was "venturous", or where he mis-used or abnormally handled the product. He noted that "No such claim is made here. Plaintiffs' [father] did with Pall Mall cigarettes just what Defendants intended be done, he smoked them".

While Judge Bogen's reasoning has not yet been accepted, or rejected, by an appellate court, it would immediately establish the liability of cigarette manufacturers to all present and former customers who can show their diseases are causally attributable to the use of the manufacturers' products.²⁷ If the courts of even a single state were to adopt this reasoning, many others would be likely to follow so as to provide their own citizens with the financial benefits of applying this straightforward legal reasoning to recover their cigarette-caused losses from cigarette manufacturers.

Almost as important as favourable legal theories in winning tobacco liability cases are procedures and judicial attitudes which prevent the cigarette companies from carrying out their strategy of "making that other son of a bitch (ie, the plaintiff's lawyer) spend all of his" money prosecuting the case. Thus, in 1992 the law firm that had brought *Cipollone* and some other cases sought to drop them on the basis that the tobacco industry's defensive tactics made the cases so expensive that the cost of bringing them exceeded the likely recovery. When one of their plaintiffs objected to being dropped, Judge Lechner (who replaced Judge Sarokin after he was disqualified) refused to excuse the law firm, on the basis that if judges do their job of interpreting the procedural rules "to secure the just, speedy, and inexpensive determination of every action,"²⁸ these cases could be tried without bankrupting either the plaintiffs or their law firms.²⁹ Trial judges have broad discretion in deciding procedural questions, and a determination by trial judges not to permit pre-trial tactics that prevent tobacco plaintiffs from ever getting their "day in court" will en-

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courage many presently diffident plaintiffs' attorneys to attempt these cases.

One type of cigarette litigation which tobacco control advocates are particularly excited about involves asbestos-containing cigarette filters. In the 1950s, Lorillard, Inc. successfully touted the "Micronite filter" on its Kent cigarettes as eliminating more of the tar and nicotine from tobacco smoke than its competing brands. However, the filter contained crocidolite asbestos, and a number of former Kent smokers are now contracting mesothelioma, a rare cancer almost always linked to asbestos exposure. It would be a bitter irony if a smoker were to switch to a filter brand to protect his health, only to develop a fatal disease for which he would not otherwise have been at risk.

Third-party victim suits

In 1987 a Technical Study Group, which included representatives of the leading US cigarette companies, issued a report which found "that it is technically feasible and may be commercially feasible to develop cigarettes that will have a significantly reduced propensity to ignite upholstered furniture or mattresses".¹⁸

A strong case can be made that the industry is liable to the 3500 Americans who are seriously injured each year, and the families of the 1200 who die, from cigarette-caused fires. According to one study, one-third of these are innocent victims: children and adults who were trapped in a fire caused by someone else's dropped cigarette.¹⁹ The refusal of an entire industry to make the simple changes in its product described in the report - lowering the cigarette's circumference, tobacco density, paper porosity, and burn-enhancing additives - imposes a foreseeable, unnecessary and unreasonable risk upon its consumers and upon others who share housing with its consumers. This behaviour is grossly negligent, and perhaps reckless.²⁰

In 1990 a Boston smoker fell asleep with his *Marlboro Lights* cigarette still lit; the resulting house fire killed a mother and her three young children. A case brought on behalf of the estates of these innocent victims is scheduled for trial in 1994 in Federal District Court.²¹ A successful result would doubtless lead to hundreds of similar cases, and widespread outrage at the callousness of an industry that continues to cause this needless carnage.

Of course, non-smokers also suffer a wide range of illnesses as a result of exposure to ETS. In addition to the class action on behalf of flight attendants,²² which was discussed in the earlier litigation review,¹ two other ETS cases against the cigarette industry are currently pending. One, *Butler v RJ Reynolds Tobacco Co.*,²³ involves a Mississippi non-smoker who contracted lung cancer after years of cutting hair in a smoky barberhop; it is scheduled for trial late in 1994. The other, *Dunn v RJR Nabisco Holdings Corp.*,²⁴ involves a non-smoking Indiana nurse who contracted lung cancer after 17 years of working at a

smoky Veterans Administration hospital. These cases are timely now that the EPA's report has heightened public awareness of the hazards of ETS; the "innocence" of the plaintiffs also seems clear. Since current estimates are that over 50000 Americans die each year from ETS exposure,²⁵ success in any of these cases could easily open the floodgates.

Cessation reimbursement claims

Another appealing plaintiff is the smoker who wants the company or companies that hooked him on nicotine, and profited greatly from his years of addiction, to pay for his efforts to quit. Some issues that have loomed large in personal injury or wrongful death suits do not arise in these cases. Thus, while the jury in the *Cipollone* case puzzled over whether Rose Cipollone was really "addicted" (as the family's attorney claimed) or was just a headstrong hedonist (as the defence alleged), no one goes through smoking cessation procedures "for the fun of it", and smokers cannot obtain nicotine replacement devices if they have not been clinically diagnosed as nicotine-dependent. Similarly, while a plaintiff seeking six- or seven-figure damages can be denigrated as a "sore loser", a risk-taker whose luck ran out and now is seeking a windfall as consolation, an otherwise healthy smoker who tries to quit is admirable, a solid, risk-averse citizen trying his best to do what his American Cancer Society and Surgeon General ask of him, and making a modest claim for financial assistance for his efforts.

Cessation reimbursement claims also differ from personal injury claims in that they can be asserted either in small claims court, the simplest of legal proceedings, or in complex class actions. Since the typical claim seeks only the cost of medical diagnosis, nicotine replacement therapy, and associated counselling... perhaps \$1000 in all, it comes within the jurisdictional limits of small claims courts. As a practical matter, this means the case can (and sometimes must) be asserted by the plaintiff himself, without the active participation of a lawyer; defendants are sometimes precluded from bringing a lawyer as well. This does not, of course, guarantee a plaintiff's verdict; indeed, the only such case tried thus far went for the cigarette company, on the ground that the plaintiff's statute of limitations had expired.²⁶ Such cases are very inexpensive to bring, and each one has the potential to be the industry's first loss, with the accompanying front-page headlines and widespread emulation.

The small size of the individual claims also makes them amenable to class action treatment. The plaintiffs are similarly situated, since they all suffer from the same medical condition (nicotine dependence) and are all seeking similar types and amounts of recovery. Since consumers currently spend an aggregate of over \$1 billion annually in diagnosis, nicotine replacement therapy, and related counselling, there should be enough at stake to attract the most highly skilled attorneys.

Reimbursement of third-party payers
Most medical costs are paid, not by the patient or their family, but by governments or private insurers. In the U.S., third-party payers have a "subrogation" right to recover their payments from any entity which would have been liable to the patient had he/she paid their own costs. Although the third-party payer which brought such an action against a cigarette company would be subject to whatever defences the company would have had against the smoker, the judge or jury might be less inclined to "blame the victim" where their punishment would fall not on the smoker or their family but on the general public (through taxes or insurance premiums).

Furthermore, uncompensated third-party payers, such as public hospitals and Medicaid programmes, could be seen as direct foreseeable victims of the tobacco industry's irresponsible behaviour and unreasonably dangerous products. Just as the cigarette companies can anticipate and calculate, for every thousand customers, the amount of tobacco-related expenses, disease, and death these customers will suffer, so can they anticipate and calculate the amount of uncompensated medical care that will be required. As financially injured parties suing in their own right, uncompensated payers would not be subject to defences based on the smokers' conduct. Each payer might also be able to aggregate tobacco-related medical expenses, and recover from each cigarette company in proportion to its market share.

Third-party payer recoveries could be facilitated by state statutes, which could simplify procedures for aggregating expenses and apportioning liability.¹⁷ Once one state adopts such a statute, others are likely to follow, since it might be difficult for politicians in any state to explain to their constituents why they are paying higher taxes or health insurance premiums than citizens of a neighbouring state. The amounts of money involved in reimbursing third-party payers in any one state would be very substantial; if the practice spread, the amounts could become, from the industry's perspective, catastrophic.

Conclusion

Discussing the catastrophic possibilities of various types of tobacco litigation may have the paradoxical effect of frightening judges into twisting doctrines so as to frustrate these possibilities. Indeed, these very fears may help explain why five US Courts of Appeals¹⁸ from 1986 to 1989 adopted far-reaching and legally insupportable interpretations of the pre-emptive effect of the Federal Cigarette Labeling and Advertising Act, while a friend-of-the-court brief supporting the plaintiff,¹⁹ by citing the paucity of new cases following the favourable *Cipollone* verdict in 1988, reassured the US Supreme Court, which overruled the Courts of Appeals in 1992.²⁰

The prospect of a catastrophe for the tobacco industry should not frighten responsible public authorities, since it would also be a triumph for

public health.²¹ It also need not be a catastrophe for the judicial system, since existing legal instruments such as bankruptcy and class actions, as well as additional legal mechanisms which Congress could create (perhaps modeled on workers compensation laws), have shown themselves capable of handling massive numbers of individual claims. The worst catastrophe would be if the magnitude of the injuries which the tobacco industry has inflicted is used as an excuse to refuse redress to the victims, and to encourage the industry to continue to inflict injury.

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- 3 Scherer, J. *Deformation of Health*. *Durham Co. NSD 40030 84*; see very many aspects in *Tobacco Products Litigation Reporter* 1992; 2(1): 1-7-3, 112.
- 4 *Imamura v. City & County of Honolulu*, 897028146. 1-2 TPLR 311. *New Discovery Cases*, Dec. 1992. For other cases see *Seven Day Summary of legal news regarding smoking in the workplace and state claims*. *Tobacco Products Litigation Reporter* 1993; 3(4): 4-11.
- 5 Perchard, M. Tobacco industry strategies and tactics. Presentation at the Seventh National Conference on Chronic Disease Prevention and Control, sponsored by the US Centers for Disease Control, 21-23 October 1992, Salt Lake City, Utah.
- 6 *Time*, June 27, 1988: 48.
- 7 *Cited and quoted in Haines v. Leggett Group, Inc. 8:1 Tobacco Products Litigation Reporter* 2:1, 814 F.Supp. 414 (DNJ) 1992.
- 8 *Zemke v. C.G. Casper & Co., Inc.*, 56 A2d 65-69.
- 9 Brooker, P. *Organisms*. New York: Plenum Press, 1985.
- 10 Hertz, J. Tobacco: peering through the smoke-screen. *MJ Physician*, December 1993.
- 11 Levin, S. Product liability lawsuits against cigarette manufacturers - the first year. *Tobacco Products Litigation Reporter* 1983; 1(1): 4-11.
- 12 *Tobacco Products Litigation Reporter* 2:9, 2:45, 112. Supreme Ct 2008 (1992). See DeWard, R.A. US Supreme Court opens new areas for litigation and regulation. *Tobacco Control* 1992; 1: 165-6.
- 13 *Tobacco Products Litigation Reporter* 2:1, 140 F.R.D. 441 (DNJ) 1992; reversed and remanded 24 *Tobacco Products Litigation Reporter* 2:102, 975 F.2d 81 (3d Cir. 1992).
- 14 Is the Tobacco Industry a "Racketeer, Influenced and Corrupt Organization"? *Tobacco on Trial* 1992, April 30.
- 15 See *R. Reynolds Tobacco Co. v. Colum. 8:2 Tobacco Products Litigation Reporter* 2:25, NC Superior Ct 1991; *Maccox v. Williams, No. 93C04804*, Jefferson City Ct. Co. Ky.
- 16 Negri, G. Australian court ruling called impetus for mass settlements today. *Seven Day* 1991; July 25: 30.
- 17 *Comments for secondary and tertiary victims*. *Flora-Carel Tobacco Cooperative Settlements*. Cary & US Environmental Protection Agency, US Dist Ct. M.D. North Carolina. *Tobacco Products Litigation Reporter* 1993; 3(2): 3-7-3, 112.
- 18 *Tobacco Litigation of Australia v. Australian Fed. of Consumer Organizations*, 4GG17 of 1991. 8:1 *Tobacco Products Litigation Reporter* 2:24 (Fed Ct NSW Div 1993).
- 19 San Francisco Superior Ct. 8939359; the complaint appears in *Tobacco Products Litigation Reporter* 1992; 2(1): 3-24-25.
- 20 *But. and Prof. Code sec. 17200*.
- 21 *Mangels v. R. Reynolds Tobacco Co. 8:3 Tobacco Products Litigation Reporter* 2:59 (Cal. Ct. App. 1993).
- 22 *Reynolds v. R. Reynolds Tobacco Co. 1:2 Tobacco Products Litigation Reporter* 2:47, 623 F. Supp. 1189 (D. Tenn. 1982); quoting Restatement 2d of Torts, sec. 402A, comment c, *affirmed*, 3:6 *Tobacco Products Litigation Reporter* 2:134, 849 F.2d 230 3rd Cir. 1988.
- 23 *Dever v. R. Reynolds Tobacco Co. 5:3 Tobacco Products Litigation Reporter* 2:83, 121 N; 69, 577 A.2d 1240 (NJ Superior Ct. 1990); *Gilbey v. American Tobacco Co. 6:2 Tobacco Products Litigation Reporter* 2:91, 582 So. 2d 1263 La. S. Ct. 1991.
- 24 *Wills v. American Tobacco Co. 89-12235 7th Cir. 8:2 Tobacco Products Litigation Reporter* 2:29 (Washington City Ct. Co. Mass. 1992).
- 25 Ironically, in the *Wills* case itself the jury concluded that the smokers' death was caused not by his cigarette-related dependencies or lung cancer, but as a result of a blood clot induced by a urinary tract infection. *Tobacco Products Litigation Reporter* 1993; 3(2): 1-16.
- 26 *Federal Rules of Civil Procedure*, Rule 1.
- 27 *Haines v. Leggett Group, Inc. 8:1 Tobacco Products Litigation Reporter* 2:1, 814 F.Supp. 414 (DNJ) 1992.
- 28 *Techinal Study Group*. *Tobacco and the seven cigarette*

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TOBACCO UPDATE BULLETIN

JULY 1994

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TOBACCO UPDATE BULLETIN

JULY 1994

NEWS SUMMARY

Potential Claimants: Update

Potential claimants for legal aid to bring claims against UK tobacco companies won a High Court judicial review against the Legal Aid Board. (More details, *infra* at § 1.1).

House of Lords Vote Against Re-Introduction of Barton's Bill: Update

The tobacco industry won "another reprieve" from a ban on advertising its products this week when the House of Lords voted against a ban. Pears rejected by 117 votes to 51 a move by anti-smoking campaigners to re-introduce a private member's bill drawn up by the Labour MP in Barton, which was blocked in the Commons in May. (More details, *infra* at § 3).

Study Shows Some U.S. States Would Lose Money in Tobacco Litigation: Update

According to a report issued by the Commonwealth Foundation, a Virginia think-tank, suits by states against companies they claim inflict substantial costs on the Medical system will be "big economic losers instead of providing the windfall proponents claim." The Foundation's study shows the average state may gain only 10 to 15 cents of every dollar in a judgment award. The study concludes that some "other states will lose money... and in every case, the contingency lawyers that states will hire will make several times more than any state." (More details, *infra* at § 1.3).

Federal Trade Commission Questions Tar and Nicotine Tests

The Federal Trade Commission (FTC) regulators have asked the National Cancer Institute (NCI) to review the method used to rate the tar and nicotine levels of cigarettes. (More details, *infra* at § 4.1).

Plans for a No-Smoking Beach Fail

A council vote defeated plans to create a no-smoking beach at Bournemouth, Dorset. Councillors rejected the six month trial scheme yesterday, despite a plea by reformed smoker Jill Abbot that the plan for the beach "was the start of a great thing". (Today 1/7/94).

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1 CASES

1.1 UK

Potential Claimants: Update

Applicants for legal aid to bring claims against UK tobacco companies won a High Court judicial review against the Legal Aid Board over its refusal to grant them support to pursue their cases. Popplewell J. quashed decisions of the Northern Area Legal Aid Committee refusing aid for the investigation of 28 test cases selected from 227 plaintiffs who are claiming compensation of more than £20 million.

Popplewell J. said there had been procedural irregularities in the Committee's consideration of the applications for legal aid, giving rise to a real risk of injustice. The judge directed that the applications should be reconsidered by another Area Committee of the Board, preferably in London.

The claimants, most of them from Liverpool but some of London and the South-East, are alleging negligence by Gallaher, Rothmans, Imperial Tobacco, Philip Morris, and BAT in failing to take steps to minimise the dangers of smoking, not carrying out or publicising research into the risks, or not giving adequate warnings of those risks.

At the judicial review application last month, Mr Michael Beioff, QC told the judge that most of his clients were seriously ill and three had died since the first application for legal aid had been made more than a year ago. "In his reserved judgment yesterday, Mr Justice Popplewell said the Board's Area Committee appeared to have failed to address issues of general importance to the cases and had given

'wholly inadequate' reasons for its decisions." (Telegraph 2/7/94). The judge also said he would not be drawn on the likelihood of the success or failure of the claims.

David Pollock, of Action on Smoking and Health said after the hearing: "We are extremely pleased. It is the first time that there has been judicial recognition that there is a case to be argued against the tobacco industry. Evidence that has been pouring out in recent weeks shows that the tobacco bosses admitted privately 20 or 30 years ago that smoking causes lung cancer and that nicotine is addictive, even though they still keep up the public pretence that neither fact is proved." (The Times Saturday 2/7/94).

"Bootleg Legality Queried"

Mr. Conor Quigley, a barrister who specialises in European law, is to claim that the UK Government has gone against the [T]reaty [of Rome] by saying it is illegal to import and re-sell dutiable goods unless UK duty is paid." In defending ten "boot-legging" suspects, he will be asking the judge to declare the EU's Excise Duty Directive, forbidding such resale, unenforceable. "Their unique defence could legalise the multi-million pound trade in smuggled drink and tobacco."

The use of the "loophole" defence in opening arguments will be "fiercely resisted" by Customs, which will "demand a jury is sworn in and [that] a full trial goes ahead." The case is also being watched closely by the Treasury, which loses up to £500 million a year in lost beer, wine and tobacco duty because of the "massive trade in cheap imports from France." (Mail on Sunday 10/7/94).

Mr. Quigley is basing his case on the fact that one of the "four freedoms" embodied in the Treaty allows unrestricted flow of goods within Europe. So, according to Mr. Quigley's argument, "once duty has been paid in one country, it should not have to be paid again in another country." The case in which he will use this defence is due to come to trial at Inner London Crown Court on July 25. If the judge accepts his plea, the case will be referred to the European Court of Justice in Luxembourg. Where it "probably won't be heard for another 18 months, during which time Quigley believes, further prosecutions would be held in abeyance." (Off License News 7/7/94).

Legal Objection to Airline ETS

Philip Karal, of Bognor Regis, West Sussex, sued British Airways in the Chichester County Court over unwanted exposure to second-hand smoke. He, his wife, and baby daughter had flown from London to Toronto. Although placed in the non-smoking section, passengers close to him in that section had been allowed to smoke by the cabin

staff. As a result, a woman sitting next to the family became ill and vomited. "The seemingly apathetic cabin staff did nothing to assist her, leaving Mr Kanai to perform the unpleasant task of administering 'post-vomiting attention'. As well as making this woman ill, the Kanai's suffered coughs as a consequence of the smoke."

The claim was brought on the basis of having to assist the woman and the family's own suffering. "Mr. Kanai asserted the agreement between him and BA contained an implied term that his family would be conveyed in reasonable comfort and that they could be allocated seats in a smoke-free section of the aircraft." The principle would have been exactly the same had they been put in the "official" smoking section against their wishes.

Initially, BA offered them travel vouchers for £100, then £200. "The family's suffering was not particularly serious and probably BA would not have been ordered by the court to pay much more than that. After first writing a letter to Mr Kanai telling him he was bound to lose the case and inviting him to drop it, the solicitors offered £500 on BA's behalf. This sum was accepted. Whether or not the claim could have succeeded had it reached court is far from clear."

The main basis for BA's assertion that the claim was hopeless was the Warsaw Convention which governs international air traffic. The main effect of this convention is to limit an airline's liability when there is an accident, making victims of plane crashes likely to receive much less compensation than those of road or rail accidents. (Guardian 4.7/94).

13 USA

Philip Morris' Libel Lawsuit Gets Response

The American Broadcasting Company (ABC) has "wrapped itself in the First Amendment" in its first formal response to a \$10 billion libel suit filed against it by Philip Morris (PM). The television network said it was only reporting on "important and controversial public issues" when it accused the tobacco industry of "spicing" cigarettes with nicotine to addict smokers. ABC broadcast its allegations in March in its "Day One" television news magazine.

ASC said, in papers filed last week in Richmond Circuit Court, in order to prevail PM must show that ABC acted with "actual malice." That is the term US courts use to describe statements published with knowledge that they are false or with reckless disregard to their truthfulness. "In these circumstances, it is hard to see how [PM] could ever meet [its] especially heavy burden of proving by clear and convincing evidence that [ABC] acted with 'actual malice.' To allow [PM] to embroil [ABC] in this lawsuit, without providing any relevant factual allegations to sustain their extreme claims, would impermissibly dampen news reporting on important public health and safety issues." ASC said.

Lonnie D. Nunley III, an attorney for PM responded. "We're studying their response right now." The next step will be for ABC to set a hearing before Judge T.J. Markow, who is set to preside over the case. (Richmond Times Dispatch 7/7/94).

Camel Logo Causes U.S. Legal Furore: Update

After "exhaling a brief sigh of relief," the R.J.Reynolds Tobacco Company's (RJR) legal department has "shifted into high gear once again." The company is preparing for a fight since the California State Supreme Court has now allowed a lawsuit to go to trial which could ban the company's "infamous Old Joe Camel" campaign, if it is found to target children inappropriately. This ruling has come despite U.S. Federal Trade Commission decision, last month, not to pursue a complaint that said RJR's "Joe Camel" ads induce minors to smoke.

California has apparently chosen to take "matters into its own hands," after its Supreme Court ruled it could act independently as to protect minors. The charge is that ads such as Camel's could "encourage" children to break the law. A RJR spokeswoman, Peggy Carter, said that "it would be ridiculous to target children" as the outcry from the anti-smoking groups would be overwhelming.

In an attempt to mitigate the criticism of cigarette advertising, the industry has voluntarily agreed to keep its billboards and posters at least 500 feet from schools, churches, playgrounds and all other locations where children gather. But without a court mandate, RJR has no plans to alter its current ads campaign. According to Ms. Carter, "It would mean working for the anti-smokers rather than the smokers, and that's just not a position we're ready to take." (Campaign Magazine 12/7/94).

Environmental Tobacco Smoke (ETS) Cases

R.J. Reynolds Tobacco Co. "Gratified" By Court Ruling

R.J.Reynolds Tobacco [RJR] Co. was pleased by a court ruling that will allow its lawsuit against the Environmental Protection Agency [EPA] to proceed. Judge William Osteen of the U.S. District Court for the Middle District of North Carolina denied the EPA's motion to dismiss a lawsuit brought against the agency by RJR and five other plaintiffs. They sued to EPA on 22 June 1993, asking the courts to declare the agency's Risk Assessment on ETS be declared null and void.

The plaintiffs alleged that in classifying ETS as a Class A carcinogen, the EPA used scientific assumptions and methodologies not generally accepted by the scientific

community, or even the agency itself in other risk assessments it conducted in the past. They specifically believe the EPA: 1) ignored its own scientific guidelines, 2) overstepped its regulatory authority, 3) used "faulty science and improper scientific procedures" to arrive at its conclusion, and 4) "cherry picked" data by ignoring new and larger studies that contradicted its conclusions.

In July 1993, the EPA moved to have the case dismissed, contending in part that their risk assessment was not final agency regulation and therefore not subject to judicial review. Judge Osteen ruled, however, that "the issuance of the Report and classification do constitute [final] agency action..." and that "the Report and classification have in fact had a regulatory effect...." He observed that the procedure under which the report was prepared and its release in "a highly-publicized ceremony... would suggest that the EPA intended the Report and classification to have a regulatory effect, as Plaintiffs have alleged." This ruling permits now the case to move forward to a "full and fair hearing" in a court of law.

Robert Weber, an attorney representing RJR said, "We're delighted by the ruling that now forces the EPA to defend its conduct in court, where the rules of science and evidence will control, not the agency's predetermined and biased policies." On a similar note, Fred Bond, Chief Executive Officer and of the Five-Cured Tobacco Cooperative Stabilization Corporation, which also is a plaintiff in the lawsuit said, "The livelihoods of tens of thousands of tobacco farmers should not be subjected to the political whims of a government agency. We hope our case will end the EPA's practice of basing public policy on politics rather than sound science." (Business Wire 21/7/94).

"Brain" Case Update

This action was filed over two years ago in the State of Florida. The action is brought on behalf of all US flight attendants exposed to ETS in the cabins of aeroplanes. The class certification motion was dismissed at first instance. Since then, the Third District Courts of Appeals has directed that the Court of first instance reconsider its decision.

The defendants are now seeking to challenge the ruling of the Third District Court of Appeals, before the entire court and the Florida Supreme Court. If they are unsuccessful, the case will return to the Court of first instance.

The plaintiffs have taken depositions of chief executive officers of a number of the defendants. Mr. Sandefur was due to be deposed on 13th July. Addison Yeaman has also been subpoenaed to give a deposition. He is resisting on the grounds of ill-health.

"Butler" Case Update:

Butler was a barber who recently died of lung cancer allegedly caused by exposure to ETS in his barber shop. He commenced proceedings in his own right in Jackson, Mississippi, on 21st October 1992. That action was due to be tried this year. Following his recent death, his family have filed a wrongful claims suite in Laurel, Mississippi. Both actions are still pending although the defendants are seeking to have the Jackson action terminated as soon as possible. There are a number of outstanding orders against the plaintiffs in the Jackson action, including orders for discovery. The judge may make it a precondition of termination that these orders be observed.

"Reuter" Case:

This is a new case filed in California this month. The action is brought on behalf of all persons injured by tobacco products.

"Bluitt" Case:

This action is being brought in Dallas by Alfred Bluitt whose wife allegedly died from illnesses caused by exposure to ETS in the workplace. She was unsuccessful in bringing a workers compensation case. It is in the early stages of discovery.

"Blanchard" Case:

This is a consolidation of nine cases in Galveston, Texas. The plaintiffs have filed a massive discovery request. The defendants have already agreed to make rolling discovery, beginning with advertising documents.

Study Shows Some U.S. States Would Lose Money in Tobacco Litigation: Update

According to a report issued by the Commonwealth Foundation, a Virginia think-tank, suits by states against companies they claim inflict substantial costs on the Medical system will be "big economic losers instead of providing the windfall proponents claim." The Foundation's study, shows the average state may gain only 10 to 15 cents of every dollar in a judgment award. The study concludes that some "other states will lose money... and in every case, the contingency fee lawyers that states will hire will make several times more than any state."

The study's author, Dr. John Berthoud, contends that, "[F]or 13 states where the federal government Medicaid contribution exceeds 70 percent, (states) could actually lose money." Those states are: Alabama, Arkansas, Idaho, Kentucky, Louisiana, Mississippi,

Montana, New Mexico, North Dakota, Oklahoma, South Carolina, Utah and West Virginia. Dr. Berthoud also suggested, "This is one of those new public policy ideas that sounds good on the surface, but when you get just an inch below, it begins to fall apart."

The report states that, "In both Florida and Mississippi, two motivations are driving these efforts. First, politicians want to 'get' the tobacco industry. Second, proponents have claimed huge windfalls will result from this litigation. The return to the states from the actual litigation will be much less than expected... because of the tremendous costs... (and some) states may actually lose money on these suits."

Dr. Berthoud's analysis shows that, according to federal law, any money recovered must also be shared with the federal government. States also must pay litigation fees, "which can be expected to be exceptionally high as his study assumes the tobacco industry or any other industry that is sued to recover Medicaid costs will fight hard against these suits." (PR Newswire 12/7/94).

State Suits Against Tobacco Companies: Update

Possible Maryland Suit

The battle by states trying to recoup Medicaid healthcare costs, "allegedly linked to smoking" and absorbed by taxpayers, was further "heated up" when Maryland said it might enter the fray after Philip Morris (PM) challenged a Florida law that allows such suits. Maryland Attorney General J. Joseph Curran, Jr. is "giving strong consideration" to filing suit against cigarette makers. A spokesman said "a decision could come as early as the end of this month." If Maryland decides to file suit, it will join a growing effort by states to force the tobacco industry to reimburse them for tax dollars spent on smoking-related illnesses. (Reuters 5/7/94).

Florida Statute:

The Florida State Assembly has passed legislation to allow an action to be brought on behalf of the State to obtain compensation for the cost of providing medical assistance to smokers. The statute abolishes all the common law defences that would be available to a tobacco company in a personal injuries case e.g. assumption of risk, contributory negligence, and specific causation.

Damages under the Act are to be assessed on the basis of the statistical association between smoking and disease. Thus, if, for example, the Court were to conclude that 80% of lung cancers are caused by smoking, the state of Florida would be entitled to be reimbursed for 80% of the cost of treating lung cancer patients.

Philip Morris (PM) is applying to challenge the legislation on constitutional grounds. Their complaint was due to be filed on 29th June. There appears to be a 50% chance that the legislation will be declared unconstitutional. It was due to come into effect on 1st July 1994.

PM has joined Associated Industries of Florida (a Florida business group) which has gone to court to challenge the new state law, alleging it violates both state and federal constitutions. The companies argued that the new law, which allows the state to seek damages in proportion to a tobacco company's market share, is unconstitutional, and violates basic fairness since it is so heavily weighted in favour of the state. The firms also claim that lawmakers did not follow proper procedures in enacting the legislation. (Wall Street Journal 6/7/94).

"Calling it the 'stealth' Medicaid Third Party Liability Act," PM said the law violates due process protection because it does not require the state to prove that a particular product actually caused the illness of an individual to whom Medicaid payments were made. In its statement PM also said that, "Plaintiffs' lawyers are the real beneficiaries of this unconstitutional Act, not the State of Florida or its citizens." (Reuters 5/7/94).

Mississippi Suit

This action was filed by the Attorney-General of Mississippi on 23rd May 1994. He is seeking to have the State reimbursed for the cost of treating smoking related diseases. He does not have the benefit of a statute like the one passed in Florida. Liability is being claimed on the basis of indemnity, unjust enrichment and nuisance. The defendants are confident of having the action struck down at an early stage for its failing to show a cause of action for which relief may be granted. (Federal Rules of Civil Procedure 12(b)(6) Motion).

1.5 Other

Smoker's Killer in Japan Won't be Jailed

A man who caused a smoker's death by kicking him after he lit a cigarette in a no-smoking area at a Japanese railroad station has received a three-year suspended sentence. Kazuo Kuwahara (age 28) was sentenced by the district court in Urawa, north of Tokyo. Anti-smoking activists had called for leniency in the case. (International Herald Tribune 14/7/94).

2 DEVELOPMENTS

2.1 UK

Government Attacked on Cigarette Advertising

An "eminent" Scottish surgeon has joined heart research charity officials in condemning the Government's refusal to ban cigarette advertising. The attack came at the launch of a British Heart Foundation publicity campaign to "highlight the extent of heart and circulatory disease and to promote ways in which the risks can be reduced." New figures published by the Foundation have "confirmed Scotland's unenviable position at the top of the world league tables of deaths from coronary heart disease. The rest of the U.K. is not far behind." (*The Herald* 5/7/94)

Cigarette sales banned on London Underground

London Underground will reportedly ban the sale of cigarettes at its stations because they are deemed hazardous under rules drawn up after the Kings Cross fire. Some 65 newsagents who sell cigarettes in Underground stations are reported to be angry about the move. (*Evening Standard* 29/6/94).

Delegates Stub Out Resolution to Ban Smoking

The delegates at the annual general meeting of the Contract Bridge Association (CBA), held in Athlone, Ireland "surprisingly" defeated a resolution that smoking be banned totally in the playing areas of all CBAI competitions. Those in favour of the motion spoke about the "dangers of passive smoking." However, another delegate, a nonsmoker, observed that "he had seen antismoking players spend hours, after bridge is over, in smoke-filled bars." As two thirds of members do not smoke it had seemed "odds-on that the resolution would be carried." (*The Irish Times* 4/7/94).

Council's £5,000 Up-In-Smoke

A left-wing council is spending nearly £5,000 on a hypnotist to help its staff quit smoking. Therapist Peter Millin, is paid £165 a visit to help 30 workers kick the habit. But, the move by Haringey Council in North London, which has a strict no-smoking policy for staff, has opposition members fuming.

Tory leader Pamela Stevie complained. "This is an appalling waste of taxpayers' money. The cash should go on worthwhile projects like housing, not hypnotising council staff." In response, a Haringey spokesman said: "It's a long-term saving if staff take less time off sick through smoke-related illness." (Sun. 27/6/94).

Duty-Free Planes and Boats vs Trains

Britain's airline, package-tour, and ferry companies have agreed to join forces to fight a legal challenge to intra-European duty-free sales which could push up the cost of cross-Channel travel by more than 20 per cent. The companies have agreed to combine their resources to oppose the High Court action launched by Eurotunnel, that is designed to outlaw all existing duty-free sales. Eurotunnel claims that the duty-free concession should have ended in 1992 and that by granting airlines and ferry companies permission to continue sales until 1995 "the European Parliament - and therefore the British Government - was acting illegally."

Already the High Court has "accepted that there is a case to answer and a full hearing is expected this autumn." If the court orders a judicial review, the case will have to be referred to the European Court of Justice, which could then order all member governments to drop duty-free concessions immediately. "Even if Eurotunnel's arguments were accepted, however, the introduction of such a ban would be unlikely until 1996." (The Times 21/7/94).

Britain's Tobacco "Taxing" Situation

The U.K. appears to be the only European Union (EU) member state to declare a policy of increasing tobacco taxes. As a result, the incidence of taxation has "risen significantly and has fuelled price increases above the rate of inflation." Currently, the rate of taxation in the U.K. is the major determinant of price. As in all EU countries, cigarette taxation in the U.K. is a mixed system, comprising "specific and ad valorem excise duties, and a general value-added tax. The overall tax incidence in the U.K. is 76% of the most popular retail price category." The total tax burden is one of the highest in Europe and the second highest in the EC. (Tobacco International June 1994).

HM Customs and Excise - Provisional Results for 1993-94

Commenting on the provisional results from Customs and Excise for the year ending 31 March 1994, Mrs Valerie Strachan, Chairman, said: "We collected net receipts of taxes and duties amounting to £66.7 billion - about 45% of central government taxation. The

main receipts continued to be VAT payments; duty on hydrocarbon oils, tobacco, alcoholic drinks, and betting and gaming; and customs duties. In real terms, the total receipts were about 3 per cent more than in 1992-93."

For the year, revenues were made up of:

£56,690 million from VAT;

£22,742 million from hydrocarbon oils;

£6,518 million from tobacco products;

£2,252 million from beer;

£2,707 million from spirits;

£1,062 million from wine;

£1,01 million from cider and perry;

£1,093 million from betting and gaming;

£1,169 million from customs duties and agricultural levies.

(HM Customs & Excise (NEWS RELEASE) 19/7/94).

Doctors Want Royal Smoking Warrant Withdrawn

"Top doctors" have called on the Queen to "withdraw the royal warrant from tobacco manufacturers." They said so many members of her own family had died from smoking diseases that she should be giving a lead for her subjects. The British Medical Association conference, held at the ICC in Birmingham, voted to call for the Royal Family to "publicly reject cigarettes and withdraw their seal of approval from the major companies behind the industry." (Wolverhampton Express & Standard 7/7/94).

"Fag Mag" Gets Ready to Roll

Smokers who feel "like social out-casts" may be interested in the first independent magazine published specifically to make them feel "respectable." Lighting Up is the brainchild of journalist Danny Blyth, who gave up his job on Brewing magazine to launch the new title, which is to be given away free at newsagents and specialist tobacconists. "If I'm not careful I'll get a reputation as a bit of a booze and fags man," says Blyth, who has used his own money to launch the first issue, "but the fact is I just spotted a big gap in the market and decided to go for it. It's not encouraging smoking, it's for people who want to enjoy tobacco guilt-free. It's an affirmation that it's OK to smoke." (Evening Standard 13/7/94).

Gauloise Cigarette Maker Prepares for Privatization

A French Budget Ministry spokeswoman says the tobacco firm Societe Nationale d'Exploitation des Tabacs & Allumenes will shortly be offering the ministry its proposals on how it feels it should be sold off. It is one of 21 companies on the conservative government's list of privatization candidates. Seitz had 1993 net profit of 585 million French francs (\$107.6 million) on revenue of 14.1 billion francs.

It's unclear if the French government will retain a stake in Seitz, and whether the company favours opening its capital to a group of core institutional investors rather than to tobacco groups. But a spokesman for the Societe Generale bank, which helped draw up the proposals with Credit Commercial de France, says, "Societe Generale cannot rule out eventually investing in Seitz's capital." (Wall Street Journal 29/6/94).

The Tobacco Smuggling Network in Spain

Cigarette "contraband" in Spain now represents Europe's largest illegal market, with smuggling depriving the treasury of an estimated U.S. \$750m in revenues." The Spanish government is reported to be planning a "significant increase in taxes on tobacco and alcohol from the beginning of 1995," with the aim of discouraging consumption and increasing tax revenue. (Financial Times 5/7/94).

Spanish Advertisers and Publishers Urge Voluntary Agreement on Tobacco Advertising

The Health Ministry is preparing a draft law that aims to "completely ban tobacco advertising on radio and television, billboards and in the printed media, and to prohibit sponsorship of cultural and sports events." According to the Ministry, the adoption of the legislation is "not imminent." However, representatives of the advertising and publishing sectors have recently issued a press release in which they highlight the economic consequences of such a move. They also claim that it would be "an assault on commercial freedom of speech," and suggest instead a system of self-regulation by voluntary agreement similar to those in place in other European countries. (El Pais 12/7/94).

EPA's Fast Answer to Philip Morris's Ad Campaign

The tobacco industry stepped up its campaign against critics this week by querying the findings of the Environmental Protection Agency (EPA). Through Friday, tobacco giant Philip Morris (PM) ran full-page advertisements costing hundreds of thousands of dollars in major newspapers across the country. The ads questioned the validity of EPA's 1993 finding that secondhand tobacco smoke causes cancer. On Monday, the cigarette maker fired its opening salvo. "Were you misled?" an ad asked. "Ever since the EPA issued its report ... serious questions have been raised about the report's validity."

"In an unusual move," EPA Administrator Carol M. Browner has "struck back." Reportedly, government agencies under fire rarely respond directly to attacks from the private sector. "In light of the scientific evidence," Browner said, "the tobacco industry's criticisms of EPA science simply don't add up. The fact is that secondhand smoke is a proven and preventable health risk."

"This is the first time we have ever seen an industry attack a federal agency for doing its job," an EPA spokesman said. "We stand by our study." To underscore that position, EPA officials faxed summaries of the 1993 report to journalists.

Not, it appears, is PM likely to give ground. "Out of 30 studies used by the EPA, the ad said, "not one showed a strong statistical link between secondhand smoke and lung cancer in nonsmokers."

Browner contends the ads are misleading. "An independent science advisory board made up of experts from academia, government and research organizations examined virtually every one of the tobacco industry's arguments about lung cancer," she said. "The board concurred in EPA's methodology and endorsed EPA's conclusions." It seems that the EPA intends to have the last word. "We don't have money to spend on ads," a spokesman said. "But we are not backing away from our position." (Washington Post: 29: 6/94).

U.S. Healthcare Costs Detailed

The federal Centre for Disease Control (CDC), in Atlanta, Georgia has said that "smoking cost the U.S. healthcare system \$50 billion (£3.3 billion) last year." The CDC calculated that this figure amounts to "about \$2.06 for each of the 24 billion packages of cigarettes sold" annually in the U.S. (The Times 8/7/94).

U.S. Antismoking Groups Contest Tobacco Industry Ad Campaign

A coalition of U.S. antismoking groups have "gone on the attack" against recent tobacco industry public-relations efforts that they have labelled "smoke, lies and videotape." The Coalition on Smoking and Health (grouping the American Cancer Society, the American Heart Association, and the American Lung Association) "took aim" at ads "questioning" the health risks of secondhand smoke.

For example, a series of Philip Morris ads have questioned whether scientific research into secondhand smoke was sound and whether the data was "manipulated" for political ends. Some recent ads by cigarette makers have also tried to cast "the debate over secondhand, or passive smoke in terms of individual liberties vs. government interference."

Coalition Chairman Scott Ballin said the group did not have the funds to "wage a rival advertising campaign," but it was working with local chapters and health groups to try to counter the industry's message. He said the thrust of the industry's message is based on "distortions and deceptions." Also speaking at the press conference was former U.S. Surgeon General Antonia Novello, who served under President Bush. She stressed that there were "numerous studies that had firmly and conclusively established the risks of smoking and passive smoking, including respiratory problems in children."

Walker Merryman, a spokesman for the industry's Tobacco Institute, repeated the industry's contention that "by any objective standard" the EPA used a "less scientifically rigorous approach" than warranted to evaluate passive-smoking risks. (*Wall Street Journal* 27/7/94).

U.S. Tobacco Industry: RICO 'Criminals'

A group of U.S. Congressmen has urged Attorney General Janet Reno to consider using the Racketeer Influenced & Corrupt Organizations Act (RICO) against tobacco companies, their lobbyists, advertising agencies, and PR agencies. This recent development was editorialized in the trade journal *Advertising Age*: "Talk about your feeding frenzies: Rivalling the media's overkill in the O.J. Simpson case is the feeding frenzy in Washington, where the antitobacco sharks taste blood in the water."

The RICO Act was designed to combat the criminal conspiracies and activities of the Mafia and drug cartels. In the past, however, most U.S. courts have "tossed out marketing-based cases as an undue stretch of the RICO's original intent." If RICO charges are nonetheless filed against tobacco companies, the article points out that "the list of defendants [ought to] include the various states that have benefited greatly from

the tobacco taxes they've collected. Surely they were well aware of the dangers of smoking, yet continued to fund state programs with their ill-gotten gains." The article's comments conclude by adding that even "those federal programs benefiting tobacco farmers certainly aided and abetted this [alleged] criminal scheme. Better haul the U.S. Agriculture department into court as well, and Congress for empowering these activities." (Advertising Age 4/7/94).

Smoking Ban in California's Restaurants

California's legislative Assembly has approved a smoking ban in restaurants and most other indoor workplaces. The legislation has been sent to Governor Wilson for his signature. The legislation would, however, continue to permit smoking in bars, hotels, tobacco shops, medical research facilities looking into the alleged effects of smoking, nursing homes, businesses that employ five or fewer employees where all agree to allow smoking and where minors are not allowed. But, the law would allow cities to impose tougher smoking restrictions. (International Herald Tribune 9-10/7/94).

U.S. Tobacco Farmers Said to See Few Options as Market Shrinks

Experts testified, before the Virginia General Assembly, that there may be alternatives to ease the pain of shrinking markets cause tobacco farmers, but farmers themselves aren't so sure. The joint legislative subcommittee, established last session, aims to study ways of helping Virginia tobacco farmers, as a steady decline in cigarette sales in the U.S. them.

The chairman of the subcommittee said, "We all... recognize that the tobacco farmer needs help." But, Dr. Wayne Purcell, an agriculture economics professor at Virginia Tech, suggested, "There's not a lot farmers can do to buck the longterm trends in the tobacco markets." Dr. Purcell said farmers need to explore alternative crops and livestock businesses, though he said no one crop is likely to replace tobacco as a cash cow. He said the state's tobacco regions also need remaining programs for farmers and targeted economic development programs. (Knight Ridder 13/7/94).

"Puff the Magic Bureaucrat"

It was reported that despite the current antismoking climate, there are still "a few people in Washington who have a nodding familiarity with tobacco: Bill Clinton enjoys wrapping his lips around an unlit cigar... The FDA's David Kessler admits to collegiate

pipe smoking... Anti tobacco Congressman Henry Waxman used to be a two-pack-a-day man... Supreme Court Justices Clarence Thomas and Antonin Scalia smoke cigars. Chief Justice William Rehnquist is a social cigarete smoker. At Clinton's Inauguration, he's rumoured to have bummed a cigarete from Senator Wendell Ford." *Time Magazine* 4/7/94).

Turning the Other Cheek, Smokers Opt for Snuff Over Smokes

According to a U.S. Department of Agriculture (USDA) report, smokers who are having a tough time finding a place to light up are turning to snuff to satisfy their tobacco urge. Consumption of snuff has risen steadily over the past six years while consumption of cigaretes has steadily declined, the USDA says in its June Tobacco Situation and Outlook Report. (*Knight-Ridder* 29/6/94).

2.4 Australia

Yachting - Tobacco Row Threatens Australia's Cup Bid

A Philip Morris' (PM), spokesman for an Australian yachting syndicate said that "America's Cup organizers have warned an Australian challenger it could face disqualification over its [PM] sponsorship." The "One Australia" syndicate said the warning was issued by America's Cup '95, the organising body for next year's regatta off San Diego in California.

The dispute concerns "One Australia's" Australian \$10m (US \$7.3m) sponsorship deal with PM. "One Australia's" Chief Executive Peter Morris said, "It has been suggested to us that the continued usage of signage with PM could constitute grounds for disqualification."

Mr. Morris also said the issue was being exploited by the Americans to destabilise "One Australia's" challenge. "It's not new. Attack the funding base and neutralize the opposition." He noted that the sponsorship deal did not break any existing yacht-racing rules prohibiting the advertising of tobacco products on boats. "We are not advertising a tobacco product, we are advertising the corporate name of a multi-national company which produces a wide range of products." (*Reuters* 5/7/94).

25 Other

Swiss Officials Angered by Marlboro Direct Mail Giveaway

Philip Morris (PM) is being criticized for mailing free cigarettes in a Swiss promotion that has government officials at the federal and canton levels arguing over when adulthood begins. PM has mailed three free packs of its new Marlboro Medium cigarettes to thousands of Swiss addresses. Both Federal and Cantonal Health Authorities are studying whether the mass mailing infringes any laws because it includes 16-year-olds. It is illegal to sell cigarettes to anyone younger than 18 in Switzerland. And, in some cantons it is also illegal to promote anything to people below the age of 21 if the product is considered a health hazard. (Euromarketing 25/6/94).

Ontario's Anti-Tobacco Package

The province of Ontario has passed the "toughest antismoking legislation in North America," prohibiting cigarettes from being sold to anyone under 19, from vending machines, or from health facilities such as pharmacies. The bill also "further restricts smoking in public areas; requires retailers to post signs stipulating age-limits and health warnings; and stiffens penalties on individuals or corporations selling tobacco to minors."

Health Minister Ruth Grier has "dubbed the legislation, which is aimed at discouraging young people from smoking, a great victory that will save lives." But pharmacy owners, "angered by potential loss of revenue," have announced that they will challenge the legislation in court. Still, Ms. Grier says that the province will be steadfast in proceeding with the ban, which will take effect from 31 December 1994. (Lancet 9/7/94).

3. PARLIAMENTARY PROCEEDINGS

Lords Vote Against Re-Introduction of Barron's Bill: Update

The tobacco industry won "another reprieve" from a ban on advertising its products this week when the House of Lords voted against a ban. Peers rejected by 127 votes to 51 a move by anti-smoking campaigners to re-introduce a private member's bill drawn up by the Labour MP Kevin Barron, which was blocked in the Commons in May.

The defeat is a "setback for MPs and peers who are seeking an ad ban. They had hoped the Lords would pave the way for tobacco ads to be outlawed." The Health Secretary, Virginia Bottomley, had "already signalled" that she would not try to overturn the

decision if the Lords voted for a ban. Supporters said, however, that they would continue to press for an end to tobacco ads by "forcing a vote in the Commons." They claim a majority of MPs support a ban and are "angry" that Barron's bill was "talked out" without a vote by a "handful of Tory opponents." MP Barron said, "We will not give up. We will keep going on until we win."

Lord Rea, a Labour peer, told the Lords that 367 of the 651 MPs had written letters to constituents supporting a ban and there was "growing support in the Cabinet." Lord Rea said the bill had been amended so that people who "flouted" the proposed ban would face a fine of £500 rather than a prison sentence. But the Junior Health Minister, Baroness Cumberlege, attacked the bill as "draconian". She said that the aim was not just a total ban but the "criminalisation of tobacco advertising." (Campaign Magazine 13/7/94).

U.K. Clears BAT's Acquisition of American Tobacco

Trade and Industry Secretary Michael Heseltine has decided to clear the proposed acquisition by BAT Industries, Plc.(BAT) of the American Tobacco Company (ATC) division of American Brands Inc. BAT said in April it planned to buy ATC for around \$1 billion. The deal is due to be completed in December and could add seven percentage points to BAT's 11 percent share of the U.S. tobacco market. (Reuter News Service 13/7/94).

Secretary Heseltine has decided, "on the information at present before him, and in accordance with the recommendation of the director general of fair trading, not to refer the... (BAT/ATC merger) to the monopolies and mergers commission under the provisions of the Fair Trading Act 1973." (Regulatory News Service 13/7/94).

Ban urged on TV sport sponsored by tobacco

In Parliament

MPs were reported to be demanding a ban on the television of sporting events sponsored by tobacco companies. ITN said that a report by the Commons National Heritage Committee on sports sponsorship and television coverage is also expected to recommend that satellite and cable companies be barred from exclusive coverage of major events, including the World Cup finals, the Olympics, Wimbledon, and the Grand National.

The report, to be submitted to the Heritage Secretary, Peter Brooke, was said to recommend that no sporting events sponsored by tobacco companies should be broadcast by any terrestrial channel once contracts have expired. (The Times 6/7/94).

Tobacco Firms Warn Against TV Sport Ban:

A ban on the BBC televising sporting events sponsored by cigarette manufacturers could lead to more young people smoking, not less, tobacco companies have warned. Tobacco companies have said if they are not allowed to compete for market share through such televised sports sponsorship, they could be forced into a price war, cutting the cost of cigarettes.

They claim that would indirectly make them more available to the young, for whom price is often a more important consideration than anything else. Mr. Daniel Oxberry, Corporate Affairs Director of Rothmans UK, which sponsors the Williams racing team, said: "If tobacco advertising is banned from sport on the television, companies will have to find other ways to compete which could include price cuts if other avenues are closed to us." (Sunday Telegraph 10/7/94).

MPs Probe Channel Duty Dodgers

The Commons Treasury Committee is to investigate the increase in imports of beer, wine and tobacco from the Continent, which is costing the government millions of pounds a year in lost revenue. Mr. John Wats, committee chairman, said he was also concerned about the loss of trade to British distillers, brewers and tobacco manufacturers. "There is evidence to suggest that most of the increase in imports from the Continent is illegal."

The Committee plans to publish a report of its findings in the autumn. Recent estimates suggest that the Exchequer is losing between £400m and £500m a year in revenue because of the increase in illegal imports. Mr. Michael Jackman, Chairman of Allied-Lyons, said rates of excise duty, which are substantially higher than those in Europe, were encouraging cross-border shopping.

The Tobacco Manufacturers Association (TMA) yesterday welcomed the announcement of the Committee's review. Mr. Clive Turner, Executive Director of the TMA said: "The illegal importing of tobacco and beer is costing the government millions of pounds and should be stopped." (Financial Times 8/7/94).

Lib Dems Consider Spending Tobacco Taxes on NHS

A Liberal Democrat working-party would support earmarking alcohol and tobacco taxes for specific National Health Service projects. Under suggestions in a working paper, the £2bn a year revenue from smoking and drinking could either be linked directly to the

health service in its entirety, or rises in duty dedicated to specific projects such as providing more scanners, or improving NHS dentistry in areas where it has all but died out. (Independent 25/6/94).

Tobacco Advertising and the Former Prime Minister

MPs Eddie Loyden and Dennis Skinner put forth the following motion in the Commons: "That this House notes with dismay that the former British Prime Minister [Lady Thatcher] who spoke out against the use of tobacco, when holding that position, is now among those involved in a highly paid high profile advertising campaign targeting the youth in South East Asian countries to take up smoking thereby becoming the next generation of tobacco smokers; concludes that this action is an example of double standards; and calls on the former Prime Minister to cease this cynical and destructive campaign against the vulnerable children of the Third World." (House of Commons: Notices of Motions 19/7/94).

4. PRESS

4.1 News Reports

Federal Trade Commission Questions Tar and Nicotine Tests

U.S. Federal Trade Commission (FTC) regulators have asked the National Cancer Institute (NCI) to review the method used to rate the tar and nicotine levels of cigarettes. The ratings, which appear in advertisements and on packets, are done by the FTC, based on tests that are done by a laboratory for the Tobacco Institute and verified by the Commission.

FTC Chairwoman, Janet Steiger, wrote a letter to the NCI expressing concern that the tests failed to take into account "the possibility that people change their smoking habits to compensate for lower nicotine and tar." She suggested that a conference could be held, by the NCI, to examine "compensation mechanisms." She also said that questions about the tests had led to "questions about the usefulness of the ratings." Some critics have suggested that the "tar and nicotine ratings may mislead consumers about the relative risks of smoking cigarettes that have differing levels of tar and nicotine, or of continuing to smoke at all." (The New York Times 21/7/94).

FDA Seeking "No Big Change" in Cigarette Regulations: Update

"Common Ground" Sought

Although the Food and Drug Administration (FDA) may eventually declare nicotine a drug, the Commissioner David Kessler, says he hopes "to avoid any kind of drastic change in the regulation of cigarettes." Leaders in the tobacco battle, from Dr. Kessler to industry executives to Congressional proponents and opponents, now say "that when rhetoric is set aside there may be common ground for regulation among them."

The FDA, however, is still gathering the evidence necessary to declare nicotine an addictive drug. If it comes to such a conclusion, its options under the laws that govern it are limited. Unless Congress declares otherwise, the agency must begin the next step: "If nicotine is found to be a drug, FDA laws require that it be found safe—which would not be done—before the agency approves it," FDA officials say.

To Regulate Not "Destroy":

But before or after the FDA reaches a conclusion, Kessler suggests, Congress, the industry and the agency could come up with alternatives to be put into law, to avoid the stricter regulation.

All sides say that the end point should not be to destroy the tobacco industry or force the country's 45 million smokers to buy cigarettes on the black market. Kessler has said he does not want to ban cigarettes, a sentiment echoed by Rep. Henry Waxman, Chairman of the House Subcommittee and an opponent of smoking.

After his testimony in Congress, Kessler said that for now, he is defining the issue narrowly: "Can nicotine be considered a drug under FDA law?" Five months ago, in a letter to antismoking groups, Kessler said the agency would be willing to consider nicotine an addictive drug, and to take regulatory action.

"Stop Me" Strategy?:

A Republican staff aid to the Subcommittee on Health and the Environment, expressed concern earlier this week that the FDA might be using a "stop me before I regulate" strategy. In this scenario, the FDA threatens to declare cigarettes a drug, and states that under the law the FDA must ban them. It asks Congress to pass a bill outlining the kind of regulation it would prefer, but when Congress fails to do that the agency declares cigarettes addictive and starts the machinery to ban them. Congress then takes emergency action to keep cigarettes on the market.

Kessler said: "We haven't approached it that way. We must investigate seriously the question of whether nicotine is a drug under the law. If we did come to that conclusion, and stipulate that it is, the blunt instruments we have at FDA to deal with the issue after making a finding are not necessarily the best to find a reasonable final policy. But suppose we do decide on the narrow question that nicotine is a drug for purposes of the act. Then you confront the very broad question, what do we do about it? That is why we are asking Congress for guidance."

Focus on Prevention:

Kessler said that regulation might focus on prevention. One suggestion was "setting a target for instance that five years after the enactment of a law, the number of teen-agers starting to smoke must have dropped by some percentage or restrictions on sales and advertising to teen-agers would go into effect." Other suggestions, he said, include the following: "Restricting cigarette sales to state-run stores or pharmacies; Labelling cigarettes with the actual amounts of tar and nicotine that smokers are likely to receive, so smokers could choose safer cigarettes. Restricting cigarette advertising to avoid the effect, intentional or unintentional, of encouraging children to smoke."

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When asked about regulations, an anonymous tobacco executive said, "Companies had begun to consider what kind of regulation they could agree to in order to help save their business." Among the issues industry officials believe are negotiable, he said, are "a licensing system for vendors of cigarettes to assure that tobacco is not sold to minors; the elimination of vending machines; further restrictions on advertising of cigarettes, especially to avoid any effect on people under age 18; setting limits on the contents of cigarettes, for example, by permitting the Government to set ceilings on tar and nicotine as the Europeans are now in the process of doing, and having the Government regulate additives in cigarettes."

Leaving Options Open:

Also possible would be new labelling practices under which accurate labels giving the amount of tar, nicotine, and carbon monoxide be marked on the package. This step would eliminate the Federal Trade Commission ratings of tar and nicotine levels, which are now considered by experts to be too inaccurate to be useful.

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A spokesman for Philip Morris (PM), who also insisted on anonymity, said: "We don't want to comment on the issues specifically on the record, but certainly believe in open discussion. We will listen to and talk about what is reasonable in the way of regulation. We do think that the laws and regulations on the books, Federal and state, are sufficient."

Representative Thomas Bliley, the minority leader of the Subcommittee, said, "I just don't see the need" for new regulations on cigarettes. But he added that he and other Republican members would be willing to listen to proposals.

Mr. Waxman invited Sandefur, chief executive of Brown & Williamson Tobacco Corporation, to meet privately to discuss more regulation of the industry, and Mr. Sandefur agreed. Other company executives have also expressed interest in such meetings. (New York Times 29/6/94).

Safety Society Pleas for "Fire Safe" Cigarette Law

The Birmingham-based Royal Society for the prevention of Accidents (ROSPA) has said manufacturers should be legally required to make non-smouldering cigarettes if self-regulation fails. ROSPA supports calls by the Association for Non-smokers' Rights to compel the tobacco industry to produce so-called fire-safe cigarettes. Spokesman Mr. David Jenkins said: "Serious consideration should be given to making this a legal requirement if voluntary agreement cannot be secured soon." (Birmingham Post 19/7/94).

Cancer Researcher is "20-A-Day Smoker"

A "leading" cancer researcher has confessed to smoking 20 cigarettes daily. Dr. John Heath whose work with others at Oxford University is part-funded by £175,000 a year from the Cancer Research Campaign, said: "I'm trying to give up, but it's hard work. The Cancer Research Campaign knows that I smoke. I know it does a lot of anti-smoking publicity. I am fully in favour of that, and I support all its initiatives."

A campaign spokesman said: "We encourage any smokers who carry out work for us to give up smoking and we even offer free counselling and hypnotherapy. However, we don't want to lose good scientists by banning smokers from doing research for us. Everyone has a freedom of choice and scientists are no exception." (Liverpool Daily Post 18/7/94).

4.2 Articles

"Thank you for smoking...?"

Antismoking "Puritanical Bigots":

"A new disease threatens the American public: an epidemic of power-hungry puritanical bigots," so wrote Forbes Magazine's Peter Brimelow, a self-described "tolerant nonsmoker." Brimelow commented that: "the hangperson's noose is unmistakably

around the tobacco industry's neck ... legal harassment [is] to the point of what an industry spokesman calls 'backdoor prohibition' seems unstoppable."

Brimelow observed that lost in this "tying frenzy" is the fact that smoking might be, "in some small ways, good for you." He qualified that statement by saying, "Let's be clear: The Surgeon General has indeed determined that smoking is dangerous to your health... But so is driving automobiles dangerous to your health... Yet people do it because it has rewards as well as risk. And they judge, as individuals, that the reward outweighs the risk... This is called freedom."

Seldom-Mentioned "Health Rewards" of Cigarette Smoking:

Citing studies, such as those by British researcher D.M. Warburton, Brimelow noted that cigarettes, "[W]hatever their other effects, really do stimulate alertness, dexterity and cognitive capacity. Beyond its behavioral effects, smoking seems also to offer subtler health rewards to balance against its undisputed risks:

Parkinson's disease: The frequency of this degenerative disorder of the nervous system among smokers appears to be half the rate among nonsmokers - an effect recognized by the Surgeon General as long ago as 1964.

Alzheimer's disease: Similarly, the frequency of this degenerative mental disorder has recently been found to be as much as 50% less among smokers than among nonsmokers (for example, by the 11 studies reviewed in the International Journal of Epidemiology in 1991).

Endometrial cancer: There is extensive and long-standing evidence that this disease of the womb occurs as much as 50% less among smokers - as documented, for example, by a New England Journal of Medicine article back in 1985. The triggering mechanism appears to be a reduction in estrogen levels.

Prostate cancer: Conversely, smoking seems to raise estrogen levels in men and may be responsible for what appears to be a 50% lower rate of prostate cancer among smokers, although this needs corroboration.

Osteoarthritis: This degenerative disorder of bone and cartilage is up to five times less likely to occur among heavy smokers - as documented, for example, by the federal government's first Health and Nutrition Examination Survey.

Colon cancer & Ulcerative colitis: These diseases of the bowel seem to be about 30% and 50% less frequent among smokers - documented, for example, by articles in the Journal of the American Medical Association and in the New England Journal of Medicine in 1961 and 1983, respectively."

Some Conclusions About Smoking's Health-Benefits

Bruneilow suggested, however, that, "None of these health benefits is enough to persuade doctors to recommend occasional cigarettes, in the way that some now occasionally recommend a glass of wine... But consider this theoretical possibility: Should 60-year-olds take up smoking because its protection against Alzheimer's is more immediate than its potential damage to the lungs, which won't show up for 30 years if at all?"

Research into possible benefits of tobacco and nicotine is widely reported to be stymied by the absolutist moral fervour of the antismoking campaign... The extirpation of smoking has become another 'moral equivalent of war'... Which leave smokers defenceless against a typically American disease: the epidemic of power-hungry puritanical bigots." (Forbes Magazine 7/4/94).

How Hitler Tried to Stub Out Smoking

This week the Government's "grandiose" national plan, Health of the Nation, celebrates its second birthday. Its stated goal is to shift resources "away from services for the sick and towards health promotion." Coincidentally, a recent paper in the Journal of Epidemiology and Community Health has revealed that the government of Nazi Germany was pursuing the same tactics as present day health promoters, with a similar lack of effect.

Dr. George Davey Smith of Glasgow University and two colleagues from Hamburg and Bern have brought together a "mass of historical and scientific data" on the subject of smoking in Germany. From the late 1920s onwards, German scientists "found good evidence to suggest that smoking was associated with lung cancer, so the Nazis eagerly incorporated the new found knowledge about smoking into their policies." To further their policies, advertising was strictly controlled. Ads were not allowed to use "tobacco as a sign of manliness, to appeal to women or sportsmen, or even to show smokers at the wheel of a car."

But, despite such a "massive exercise in propaganda," the popularity of smoking continued unabated. "If a totalitarian government with a monopoly of communication failed to reverse the trend in smoking, it seems extremely unlikely that any significant reduction can be achieved by the government of a free-market democracy." The German experience suggests that "intensive health promotion may not just be ineffective but counter productive, and may actually promote the behaviour it sets out to reform." (The Times 7/7/94).

3. SCIENCE

3.1 ETS developments

1993 Joint Annual Report of Committees on Toxicity Mutagenicity and Carcinogenicity is Released

The Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment [COC] has considered the possible carcinogenic effects of passive smoking. It concluded that there was a "small, statistically significant, risk of lung cancer among non-smokers exposed over a substantial part of their lifetime to environmental tobacco smoke [ETS]."

The Committee's Approach and Methods:

The COC evaluates chemicals for human carcinogenic potential at the request of the Department of Health and other Government departments. This evaluation draws on many sources of information, including "epidemiology, structural chemistry, metabolic studies and short term mutagenicity tests, as well as long term animal testing". Several of the assessments undertaken during 1993 have been "based primarily on evidence derived from epidemiological studies of human populations, including the possible carcinogenic effects of passive smoking, 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin (commonly known as dioxin) and occupational exposure to certain pesticides."

According to the report, consideration of the "observed effects in humans is extremely useful when evaluating putative human carcinogens, since the problems of extrapolating from experimental animals are avoided and some estimate of the size of the risk can be made." The COC noted, however, that there are "important limitations and sources of potential error in such epidemiological studies," and that the "wide expertise of the whole Committee has been needed in considering possible mechanisms of causality and overall biological plausibility of the suggested associations."

The COC's Mandate:

The COC noted that several studies have been published since the early 1980s "demonstrating a small increase in the incidence of lung cancer among non-smoking wives of smokers." The US Environmental Protection Agency issued a report on the respiratory health effects of passive smoking in December 1992, which classified environmental tobacco smoke (ETS) as a human carcinogen. The Department of Health accordingly sought the Committee's views on the association of ETS with lung cancer.

The COC Passive Smoking and Lung Cancer: Conclusions:

"The consensus from the published literature was that there was a small, statistically significant risk of lung cancer among non-smokers exposed over a substantial part of their lifetime to environmental tobacco smoke. The Committee agreed with the conclusion of the Independent Scientific Committee on Smoking and Health (Fourth Report, HMSO, 1985) that the relative risk among such people was in the range 1.1 to 1.3 accounting for several hundred lung cancer deaths per annum in the UK.

Additional epidemiological studies were not recommended, but there should be further research on levels of exposure to ETS, particularly in the workplace and public areas, to enable comparison with domestic levels on which the epidemiological findings were based. Research into more reliable biomarkers for exposure to ETS was recommended.

Continuing efforts should be made to ensure that in indoor environments frequented by the public, including public transport, the workplace and leisure environments, exposure to environmental tobacco smoke was kept to a minimum."

Note: The COC is an expert advisory committee (first set up in 1976) whose members are appointed by the Chief Medical Officer. (Department of Health (Press Release) 20/7/94).

ETS: Lung Cancer Risk Still Unproven, Says Dutch Toxicologist

Environmental Protection Agency's (EPA) Report

Dr. F.A. de Wolff, a Dutch toxicologist and clinical chemist, challenges the claim that ETS results in 200 deaths per year in the Netherlands, an estimate derived from the U.S. EPA's ETS risk assessment. De Wolff stated that the EPA report must, for the moment, be viewed as being "unfounded and therefore undesirable".

After reviewing the literature on ETS and focusing on the EPA report, De Wolff concluded that: "no laboratory method whatsoever fulfils all the criteria for the measurement of passive exposure of the human to tobacco smoke." In the absence of reliable dosimetric data, "it is impossible to directly connect a perceived effect, such as lung cancer, with exposure to environmental tobacco smoke."

On the subject of the EPA report, de Wolff said that the reader of the report gets the uneasy feeling that "a certain selectivity cannot be excluded ... scientific data are taken out of their larger context ... with much sleight-of-hand with figures ... a dangerous development against which the scientific community must actively defend itself".

He suggested that the data on a possible carcinogenic effect of ETS on humans must be evaluated in the manner used in the Netherlands for risk assessment: with regard to carcinogenic substances, one which differs in its essence from the EPA approach.

Fontham Paper: Conclusions Questioned:

De Wolff noted that in a number of publications, histopathological data on lung cancer type were entirely absent. He pointed out that in general, active smoking is associated with small-cell tumours and squamous-cell carcinomas. Yet, in a patient-control study by Fontham et al on lung cancer and ETS, the authors report an increased chance of adenocarcinoma of the lung. De Wolff comments that "these findings conflict with the assumption that exposure to environmental tobacco smoke has effects comparable to limited active smoking...." (Coverage of the Fontham paper below) (Infotopics (CDC June 1994).

Fontham, E et al, "Environmental Tobacco Smoke and Lung Cancer in Nonsmoking Women."

This is the final report on a five-year multi-centre case-control; three-year results were published in 1991. The completed study is now the largest ETS lung cancer study (by number of lung cancers). "Tobacco use by spouse(s) was associated with a 50% excess risk of lung cancer: all types of primary lung carcinoma..., pulmonary adenocarcinoma... and other primary carcinomas of the lung... an increasing RR of lung cancer was observed with increasing pack-years of spousal ETS exposure... such that an 50% excess risk of lung cancer was observed for subjects with 80 or more pack-years of exposure from a spouse...

"No significant association was found between exposure during childhood to household ETS exposure from mother, father, or other household members...." (Note that, in this study the cancers were histologically confirmed.) (Fontham, E. et al. Journal of the American Medical Association, 8/6/94..

Bero, L et al. "Publication Bias and Public Health Policy on Environmental Tobacco Smoke"

The objective of this study was to examine the tobacco industry's claim that publication bias against negative studies invalidates the risk assessment of environmental tobacco smoke (ETS) conducted by the U.S. Environmental Protection Agency (EPA). The study was funded by California's Cigarette and Tobacco Surtax Fund through the Tobacco-Related Disease Research Program of the University of California.

In June 1993, several tobacco companies filed a lawsuit against the EPA to require the EPA to withdraw both its classification of ETS as a group A carcinogen and the ETS risk assessment. The tobacco industry's pleading states that "various sources of bias, including publication bias... could explain any association claimed by EPA between ETS and lung cancer" and asserts that the EPA "cherry-picked scientific data, ignored recent studies that contradicted its conclusions."

The study first sought to determine the number of 1) Published original research articles that tested the hypothesis that ETS exposure is associated with adverse health effects, 2) Articles reporting statistically significant ("positive") or non-significant "negative" results, 3) Articles concluding that ETS is a health risk, and 4) Unpublished studies of the effects of ETS on health. The articles were identified by a computerized search of the medical literature supplemented with material obtained from the tobacco industry and hand searching. Articles were then classified as either peer-reviewed journal articles or articles from sponsored symposia.

The criteria used to assess the ETS literature, were the statistical significance of results reported and whether or not the article concluded that ETS exposure is a health risk. The study reported that more symposium articles than journal articles were reviews (46% vs 6%; $P = .0003$). More original journal articles than original symposium articles reported the use of statistical tests (96% vs 54%; $P = .0001$). Of articles with statistical analyses, similar proportions of journal articles and symposium articles reported statistically significant results (57% vs 47%; $P = .329$). The conclusions of 80% of the original journal articles were positive, compared with 51% of the original symposium articles ($P = .0006$).

From this, the authors concluded that there is no publication bias against statistically non-significant results on ETS in the peer-reviewed literature. They also commented on the overall distortion created by a "high proportion of articles in [tobacco industry-supported] symposia that reach the conclusion that ETS is not harmful, primarily results from the inclusion of [non-statistical] review articles."

According to the study's authors, "[T]obacco industry-sponsored symposium proceedings are cited by the tobacco industry to support their position that ETS exposure is not harmful. Since symposium proceedings... comprise a substantial proportion of the literature... we assessed the extent of publication bias among articles... that had been published as either peer-reviewed journal articles or proceedings of symposia." Finally, "Our findings suggest that negative studies, such as those published in symposia, should be carefully scrutinized before they are... considered by the courts because the negative results may not be supported by any statistical analyses." (Bero, L. et al. *Journal of the American Medical Association*, 272(1):133-6 (13/7/94)).

"Passive Smokers" Fear for Health

According to a survey commissioned by the Health Authority (HEA), almost nine in ten employees believe their health is at risk from working in an environment where other people smoke. Of the 500 employees surveyed, two thirds felt employers should take responsibility for controlling whether and where people smoke in the workplace, while eight in ten thought employers should make some provision for smokers.

Smoking policies are already in place in two thirds of the companies surveyed, the most common form being restriction of smoking to certain areas (52 per cent) rather than a complete ban (37 per cent). HEA director of Cancer Education, Tania Wolff said: "Adults spend up to 50 per cent of their waking lives at work. It is therefore vitally important that the atmosphere they work in is as healthy as possible."

A leading British Medical Association doctor has commented: "There is compelling evidence that passive smoking can cause lung cancer in adults and serious respiratory illnesses in babies. This survey shows that people no longer wish to be exposed to passive smoking which is also known to have acute irritant effects on the eyes, throat and respiratory tract." (Employment News July 1994).

Dayal, H et al, "Passive Smoking in Obstructive Respiratory Diseases in an Industrialized Urban Population"

This study examined the risk of obstructive respiratory disease associated with tobacco smoke in indoor air, independent of active smoking, ambient air pollution, and some of the other sources of residential indoor air pollution. Data came from a probability sample survey of nine neighbourhoods in Philadelphia conducted in 1955-56, leading to information on approximately 4200 individuals. It concludes that "passive smoking is a significant risk factor for obstructive respiratory disease for never-smokers in an industrialized urban population." (Dayal, H et al, *Environmental Research*, 63:161-71 (1994)).

Neas, L et al, "Concentration of Indoor Particulate Matter as a Determinate of Respiratory Health in Children"

This paper examined the effect of passive exposure to environmental tobacco smoke in the home on respiratory symptoms and pulmonary function level as studied in a cohort of white children aged 7-11 years examined in six U.S. cities in 1983-1985. For 2,994 children with questionnaire-based exposure data, passive exposure to an additional pack of cigarettes smoked daily in the home was associated with an increase of lower-

respiratory symptoms (odds ratio = 1.25, 95% confidence interval 1.10-1.42). Ostro, B et al. American Journal of Epidemiology, 139 (11):1066-99 (1994).

Ostro, B et al, "Indoor Air Pollution and Asthma"

The authors note that "although there is abundant evidence of asthmatic responses to indoor aeroallergens, the symptomatic impacts of other common indoor air pollutants from gas stoves, fireplaces, and environmental tobacco smoke (ETS) have been less well characterized." A panel of 164 asthmatics recorded in a daily diary the occurrence of several respiratory symptoms, nocturnal asthma, medication use, and restrictions in activity, as well as exposure to the factors mentioned above.

The authors believe: "This investigation documents a strong daily relationship between exposure to cigarette smoke and increased probabilities of clinically significant symptoms in free-living asthmatic adults." Ostro, B et al. Am J Respir Crit Care Med, 19:1400-06 (1994).

Cullinan, P and Newman Taylor, A. "Asthma in Children: Environmental Factors"

This article is subtitled "Increased sensitisation to inhaled allergens seems the most likely explanation for asthma's increased prevalence." The authors compared the results of two recently published studies of asthma in children. Although separated by a period of 10 to 15 years, the studies were conducted using identical survey methods and objective assessments.

The authors, attempting to reconcile the two results, commented that "childhood asthma is predominantly an allergic disease; changes may have occurred in exposure to aeroallergens or in concurrent exposure to factors that modify the response to allergens." These factors include various respiratory irritants, such as tobacco smoke and possibly air pollutants. The article also noted that tobacco smokers have an "increased risk of sensitisation to agents inhaled at work, including proteins and low molecular weight chemicals." Cullinan, P and Newman Taylor, A. British Medical Journal, 305: 1565-6 (15/6/94).

Junge, B, "Passive Smoking Aboard Passenger Aircraft"

According to this review article, a survey of the relevant literature on measurements of tobacco smoke constituents in aircraft and other closed environments "reveals that being seated in the non-smoking section of an aircraft does not provide effective protection

against involuntary inhalation of tobacco smoke." The author concludes that although exposure of the average air passenger lasts for only a comparatively short period, "damage to health from such passive smoking should clearly be principally the same, although clearly of a lesser impact, as in persons continuously exposed to tobacco smoke at home or at the workplace. (Junge, S. Tobacco Control, 3: 50-6 (1994).)

Maw, A and Bawden, R. "Factors Affecting Resolution of Otitis Media with Effusion in Children"

A total of 222 children was studied and reviewed annually for five years. Four of the 43 independent variables were found to be repeatedly significant in relation to outcome: (a) whether or not adenoidectomy was performed; (b) age at operation; (c) history of earache prior to operation; (d) parental smoking habits. The authors conclude that "avoidance of parental smoking will have a beneficial effect on children middle ear disease." (Maw, A and Bawden, R. Clin Otolaryngol, 19: 225-30 (1994).)

Cress, R et al, "Characteristics of Women Nonsmokers Exposed to Passive Smoke"

The authors suggest that studies that have investigated the association between exposure to passive smoke or environmental tobacco smoke (ETS) and increased risk for disease have had inconclusive results and have raised questions about whether women exposed to ETS differ from those not exposed. Their study population included 120 women nonsmokers who reported that they had been exposed to ETS in the 24 hours prior to the interview and 215 women who reported no exposure. The women were then queried about demographic, lifestyle, sexual, and reproductive factors.

The results showed that exposed women were younger, less educated, and slightly heavier than non-exposed women. They were more likely to be divorced or separated, to have had first intercourse at or before age 16, and to have had three or more live births. Exposed women were more likely to have consumed two or more cups of coffee, two or more glasses of beer, or to have smoked marijuana in the past 24 hours, than non-exposed women. The authors concluded that women exposed to ETS differed from those not exposed on several factors that should be considered in future studies. (Cress, R et al. Preventive Medicine, 23: 40-7 (1994).)

5.2 Other Developments

Storms Are Blamed for Asthma Epidemic

Thunderstorms and the increasing numbers of people at risk of respiratory disease appear to be responsible for the surge in asthma cases during last month's heatwave, rather than air pollution, it emerged yesterday. Dr. Maryn Partridge, chief medical adviser to the National Asthma Campaign, said "hundreds and hundreds" of people suffered asthma attacks during the epidemic. Mr. David Blunkem, the Shadow Health spokesman, called on ministers yesterday to act to curb the effects of air pollution.

But according to Professor Anthony Seaton, of Aberdeen University, chairman of the Department of Environment's Expert Panel on Air Quality Standards, an independent advisory body, "the link between air pollution and the increase in asthma attacks is being over-emphasised by pundits, politicians, the media and pressure groups for their own interests." He also stressed the difference between the cause of the disease itself and the factors that triggered attacks. "Various types of air pollution did bring on attacks of asthma in those who had the disease. But the likelihood that air pollution is the cause of the rise in asthma of the past 30 years is extremely small."

Professor Seaton noted that "There has been a rise in asthma, by at least two-fold over the last 30 years, and there has been a concurrent rise in the prevalence of hay fever and eczema." But he also pointed out that air pollution had been reduced substantially over the same period. The increase in incidence of asthma, he suggested, "may be due to a substantial change in the diet of the population." If air pollution were eliminated, "it would probably make no difference to the number of people with asthma."

The recent epidemic of asthma attacks was more likely to have been triggered by thunderstorms, rather than air pollution. One suggestion, from Australian researchers, was that the storms released allergy-causing pollen and fungal spores into the atmosphere. (Daily Telegraph 19/7/94).

British Medical Association Plans Study of Drugs Risks

The health risk of all drugs, from marijuana and heroin to tobacco and alcohol, is to be studied by the British Medical Association (BMA). It will consider how doctors supply hard drugs to addicts as well as arrangements that might be made if these drugs were legalised. The study, described as an "authoritative statement", was requested by doctors at the BMA's annual meeting in Birmingham.

Doctors said the report was needed so that reliable facts would be available on the risks and consequences of taking drugs in case it were proposed to legalise hard or soft drugs in the near future. Dr. Tim Webb, a consultant anaesthetist from Cwyd, told the conference: "The costs and carnage of controlling the movement of illegal drugs makes prohibition in the US in the 1920s look like a Band of Hope tea party."

Dr. Webb said the report should not reach conclusions on the desirability or otherwise of legalising drugs, but should be the most authoritative statement available to inform the debate when decisions were taken. He said that in the past, it was "often claimed that marijuana led to heroin addiction, but no one knew if it was true. It's easy to say some goes from a puff of pot to mainlining on heroin. But we don't know whether that is right. We need to know the facts." (Daily Telegraph 6/7/94).

Cigarettes Under Fire: "A Plan to Kick the Kick"

Two "prominent" tobacco researchers have proposed a system for gradually reducing the amount of nicotine in cigarettes supposedly to render them nonaddictive. According to the plan, published in the New England Journal of Medicine, the U.S. Food and Drug Administration (FDA), which is considering the regulation of cigarettes as drugs, would require manufacturers to reduce the amount of nicotine in cigarettes. Over "perhaps 10 or 15 years," the reduction would reach a "target dose of 0.17 milligrams per cigarette." That is approximately one-sixth the nicotine content of the average of today's cigarettes.

The researchers, Neal Benowitz of the University of California at San Francisco and Jack Henningfield of the National Institute on Drug Abuse, based their proposal in part on the people they called "chippers", the 10 percent of smokers who consume fewer than five cigarettes a day and generally do not appear to be addicted. The researchers calculated the average amount of nicotine in these nonaddicted smokers' bodies and then determined how much nicotine could be allowed in a cigarette to maintain similar levels among those who smoke 30 cigarettes per day. Although smokers might try to compensate for the loss of nicotine by smoking more, Mr. Henningfield said, sufficient reduction of nicotine in cigarettes would require smokers to consume 30 or more cigarettes to get the same amount of nicotine found in three or four today, "more effort than most smokers would be willing to make."

The FDA announced in February that it was considering tobacco regulation, and Commissioner David Kessler had said that "regulation might take the form of a gradual lessening of nicotine levels." On the other hand, Walker Merryman, a spokesman for the Tobacco Institute, called the article "an op-ed piece rather than a study" that was "attempting to establish a framework for FDA-designed cigarettes." (International Herald Tribune 15/7/94).

How Tobacco May Be Used To Fight Pollution

Farmers may soon be growing genetically engineered plants that yield cheap antibodies for use in medicine, pollution control and industrial processing. So say, Bill Cockburn and Garry Whitelam, of the University of Birmingham, who have already developed genetically modified tobacco plants that produce antibody-like products. Cockburn also predicted that aquatic plants could be engineered to produce antibodies that extract pollutants such as heavy metals from industrial effluent.

Working with Unilever, the Anglo-Dutch food and chemicals company, they are now attempting to engineer plants so they produce antibodies that protect against harmful viruses and bacteria. Cockburn explained, at a conference on biotechnology held in Brighton, "We can in theory produce any kind of antibody or antibody derivative in plants."

He and his team have produced fragments of antibodies call "Fv" regions in tobacco plants. The Fv regions are important because they are the chemical "claws" that "grab" onto surface receptors on bacteria or viruses. Cockburn estimates that each square metre of plants could produce a gram of antibody, making it considerably cheaper than using fermenters. "You don't need expensive, sterile fermenters, and you can extract the antibodies relatively easily from the cell walls." (*New Scientist* 16/7/94).

5.5 Papers noted

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"Screening for Asthma in Children"
Br J of Gen Practice 44(381):179-84 (1994).

Ogborn, C et al

"Urinary Cotinine as a Measure of Passive Smoke Exposure in Asthmatic Children"
Clin Ped 33(4):220-6 (1994).

Klitz, P and Mangin, P

"Evidence of Gestational Heroin or Nicotine Exposure Analysis of Fetal Hair"
For Sci Int 63:99-104 (1993).

Ernster, V

"Epidemiology of Lung Cancer in Women"
Annals of Epi 4:102-110 (1994).

Guneser, S et al
"Effects of Indoor Environmental Factors on Respiratory Systems of Children"
Lancet Pediatr. 40(2):114-6 (1994).

Ratiro, P et al
"Decreased Fetal Weights in Rats Exposed to Sidestream Cigarette Smoke"
Food and App Toxicology, 22(3):400-4 (1994).

Hecht, S et al
"Biomarkers for Human Uptake and Metabolic Activation of Tobacco-specific
Nitrosamines"
Cancer Res. 54(8):1912-7 (1994).

Brown, W
"Deaths Linked to London Smog"
New Scientist, 4 (25/6/94).

Ali, S et al
"Detection and Measurement of DNA adducts in the Cervix of Smokers and Non-
smokers"
Int. J. Gynecol. Cancer, 4:188-93 (1994).

Swanson, J et al
"Caffeine and Nicotine: A Review of Their Joint Use and Possible Interactive Effects in
Tobacco Withdrawal"
Addictive Behavior, 19:229-36 (1994).

6 Other Publications

Tobacco Control, 3(2) (1994)

Lighting Up, No 1 (July-August 1994).

TOBACCO UPDATE BULLETIN

JUNE 1994

News
Cases
Parliament
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TOBACCO UPDATE BULLETIN

JUNE 1994

NEWS SUMMARY

Lords Attempt to Revive Barron Bill Fails

An amendment to the Criminal Justice Bill, which would have revived the Barron Bill to ban tobacco advertising, was tabled in the House of Lords but later withdrawn on 20th June. (More details, *infra* at § 3).

Eight More US States Consider Suing the Tobacco Industry

As many as eight states could decide shortly to sue the tobacco industry to try and recoup the health care costs of taxpayers who smoke. (More details, *infra* at § 1.3).

Australian Government to Inquire into Tobacco and Health

The Australian Democrats' health spokeswoman, Senator Lees, won the support of all other parties to authorize the Senate Standing Committee on Community Affairs to begin a broad inquiry to review the level of regulation covering "the manufacture, advertising, promotion and sale of tobacco products." (More details, *infra* at § 2.4).

European Commission to Re-examine Tobacco Ad Ban Proposal

The European Commission will re-examine the EU-wide tobacco advertising ban proposal, which has been blocked for some time. (Agence Europe 13-14/6/94).

US Attorney General Announces Investigation into Tobacco Industry Executives' Congressional Testimony

Jane Reno the American Attorney-General, has said that leaders of the American tobacco industry could be prosecuted after allegations that they might have lied to Congress. (More details, *infra* at § 2.3).

Philip Morris Files Suit in Australia

Philip Morris (PM) has initiated an action in High Court in Australia, challenging that country's ban on cigarette advertising. (More details, *infra* at § 1.4).

Doctors Want to Ban "Death" Cigarette Adverts

The British Medical Association (BMA) in the North is calling the controversial £1.5m advertising campaign for "Death" cigarettes sick, obscene, and offensive to relatives of those who have died from smoking related diseases. (More details, *infra* at § 4.1).

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1. CASES

1.3 USA

West Virginia to Sue Tobacco Industry

West Virginia's Attorney General, Darrell McGraw, Jr., has announced plans to sue tobacco companies in order to force them to pay for smoking related health-care costs. In so doing, West Virginia is following the examples set by sister-states Mississippi and Florida.

The attempt is to recover funds expended by the state for patient medical costs. In addition to this specifically proposed litigation, Mr. McGraw said that the topic will be generally discussed among the fifty attorneys-general at their annual meeting this month. (Reuters 7/6/94).

Eight More US States Consider Suing the Tobacco Industry

As many as eight states could decide shortly to sue the tobacco industry to try and recoup the health care costs of taxpayers who smoke. Mr. Michael Moore, Mississippi's attorney general and the first top state lawyer to sue the industry, told Reuters that he believes a number of states have put similar efforts "on the front burner."

Mr. Moore has been meeting individually with other attorneys general during their annual conference underway in Texas. He said lawyers representing more than 15 states have asked to talk to him during the conference. "I've talked to eight or nine who have a high level of interest in it. Some said they are going to file. There are about six to eight I feel are close to making a decision (to sue) shortly."

Mr. Moore said he has also asked the Justice Department to consider filing a similar federal suit seeking to recoup Medicare funds. He said he thinks the likelihood of more suits has increased with FDA Commissioner David Kessler's testimony about the use of Y-1 Tobacco by B&W. The Justice Department is also considering a criminal probe into the industry's alleged concealment of the link between nicotine and addiction. "I think it is the biggest fraud ever perpetrated on the American people and it has killed more people than anything that ever occurred in this country," Moore said. *Reuters* 2/6/94.

Federal Judge Quashes Brown & Williamson Subpoenas

Federal District Judge Harold Greene has rejected subpoenas secured last month by Brown & Williamson (B&W) against two members of U.S. House of Representatives. B&W was attempting to ask U.S. Representatives Henry Waxman (D-California) and Ron Wyden (D-Oregon) how they obtained copies of internal company documents which reportedly discuss the health risks associated with cigarette smoking.

The members in question sit on the House Energy and Commerce subcommittee on health that is investigating the tobacco industry. Rep. Waxman, chairman of the hearings, is also the author of the Smoke-Free Environment Act which was submitted to Congress in February 1994. This Act has been supported by the Clinton Administration in testimony given by Carol Browner, the Environmental Protection Agency Administrator.

Judge Greene criticized B&W's legal approach as "seeking to intimidate, and in a sense to punish" its critics in the debate over the hazards of smoking. A B&W spokesman rejected the judge's charge and responded that the judge was attempting to put members of Congress "above the law."

B&W will appeal the ruling in which judge Greene said that the legislators were protected from the subpoenas by the U.S. Constitution's speech and debate clause. The clause shields members of Congress from court actions stemming from their official duties. (*International Herald Tribune* 3/6/94).

14 Australia

Philip Morris Files Suit in Australia

The Philip Morris (PM) has initiated an action in High Court in Australia, challenging that country's ban on cigarette advertising. PM is basing its argument on the grounds that such a ban is a denial of "commercial freedom of speech." The company has

objected to the 1991 Commonwealth Tobacco Advertising Prohibition Act, stating that its restrictions were "so wide-ranging that they deny [PM] the right to take part in debate on political, public and social issues and deny it the normal commercial freedom of speech." (*Financial Times* 7/6/94).

2 DEVELOPMENTS

2.3 USA

US Attorney General Announces Investigation into Tobacco Industry Executives' Congressional Testimony

Jane Reno, the American Attorney-General, has said that leaders of the American tobacco industry could be prosecuted after allegations that they might have lied to Congress. In a letter to the Justice Department, seven Congressmen have alleged that the heads of America's seven largest tobacco firms "might have perjured themselves" when they testified before Congress in April and said they had no evidence that nicotine was addictive.

Ms. Reno said, "We are looking at all the allegations, all the comments, all the information that we have received to determine what would be appropriate action by the Justice Department in terms of a variety of issues." She also confirmed that the criminal, civil and anti-trust divisions of her department were looking into the matter but had yet to decide whether to start a full investigation.

Her comments came as Mr. Thomas Sandefur, chairman of Brown and Williamson (B&W), an American subsidiary of BAT industries, gave evidence to a House subcommittee yesterday about whether his company knowingly manipulated the levels of nicotine in certain of its better known brands. Mr. Sandefur appeared on Capitol Hill after Dr. David Kessler, head of the Food and Drug Administration (FDA), said that B&W had secretly sold and developed tobacco with twice the normal level of nicotine and then sought to ward off federal investigators.

Dr. Kessler said that the firm had secretly developed through genetic engineering a high-nicotine tobacco, codenamed Y-1. In his evidence yesterday, however, Mr. Sandefur rejected the claims made by the Food and Drug Administration, saying: "As we told the FDA, the brands that use Y-1 deliver essentially the same nicotine as the productions they replaced."

Martin Meehan, the Democratic representative for Massachusetts who wrote the letter, also said "There is compelling evidence that tobacco companies... have committed a series of serious crimes over a period of several decades." (*Financial Times* 24/6/94).

Judge Rejects Bid to Investigate Smoking Petition

A judge rejected a California official's request to ask people if they were misled when they signed a petition on smoking which is backed by America's biggest cigarette company. California's acting Secretary of State Tony Miller last week accused Philip Morris (PM) of "a systematic scheme of deception" in obtaining signatures in support of a measure which it hopes to put before California voters in November.

Backers have turned in 600,000 signatures, while only 384,000 are needed to qualify it for the ballot. The ballot initiative would replace some 270 local laws against smoking in California with a single statewide law which would be less restrictive than the curbs already enforced in some cities like Los Angeles. Mr. Miller, the official responsible for certifying ballot measures, went to court to seek permission to survey a random sample of people who signed the petition to find out whether they were misled.

Mr. Miller had vowed not to certify the initiative if he found it only qualified through unlawful misrepresentation. Sacramento County Superior Court Judge John Lewis denied Miller's request Friday, saying it would violate the confidentiality of the people who signed the petition. Responding to the judge's decision, Miller said that the law should require that the sponsors of ballot measures be prominently named in the petition. "In this case, the law should have required that the petitions say 'brought to you by Philip Morris.'"

Californiaers for Statewide Smoking Restrictions (CSSR), a coalition of PM, restaurants, and taverns backing the measure, said it was pleased with the judge's decision. CSSR campaign director of Lee Simenberger said the group had at all times acted within the law. (Reuters 11/6/94).

US Tightens Tobacco-Content Regulations

The US Department of Agriculture (USDA) has issued the final content rules for US-trade cigarettes. They must contain at least 75% US-grown tobacco. The rules affect cigarette manufacturers who "account for at least one percent of the cigarettes produced and sold in the US each year." Violators, using higher quantities of foreign tobacco, could be fined and forced to buy tobacco from domestic loan stocks. (International Herald Tribune 11-12/6/94).

RJR Nabisco Escapes Fight with U.S. FTC

After three years of debate, the U.S. Federal Trade Commission (FTC) has decided not to pursue a complaint against R.J. Reynolds Tobacco Co (RJR). The controversy surrounded an anti-smoking lobby's effort to have the "Joe Camel" advertising campaign banned by the FTC. The objection to the cartoon-like character was its potential appeal to children.

Attacking cigarette advertising which purportedly targets children is a goal of the Council on Smoking or Health (CSH) and the FTC's decision is seen as a "major setback." One recent opinion poll suggested that as many or more elementary school kids recognized RJR's "Joe Camel" than recognized "Mickey Mouse."

The decision came after a three year battle, in which RJR provided the FTC with "tens of thousands of documents." The Wall Street Journal noted that this particular decision comes as a rare tobacco industry victory over anti-smoking activists. Pleased with the decision, RJR responded by saying, "We do not want children to smoke, and RJR has been a leader in developing program designed to discourage youth smoking." (WSJ 3/6/94).

US Congress: Quick-Vote Ploy to Regulate Tobacco Fails

An attempt to get a quick Congressional vote on legislation requiring the Food and Drug Administration to regulate tobacco has failed. The House Rules Committee has refused to allow a waiver permitting the regulatory proposal to be tacked on, as an amendment, to the agriculture appropriations bill. "This means that the proposal to regulate tobacco is probably dead for this year and will have to wait until Congress convenes in 1995." (International Herald Tribune 15/6/94).

Nicotine Under Fire in the U.S.

From the FDA:

The U.S. Food and Drug Administration (FDA) has been petitioned by a coalition of powerful health groups to regulate cigarettes which are advertised as containing low levels of tar and nicotine. It is argued that such regulation would be proper under two jurisdictional theories.

First, the implication that low tar cigarettes are "healthier" than other types could be considered a health claim. The FDA has the responsibility and the authority to regulate products which make health claims.

The second theory supporting FDA authority to regulate nicotine is more direct. If the substance is classified as an addictive substance or drug, then the Administration would have the mandate to control or ban it. Under U.S. law, the FDA can regulate a substance as a drug only if it can show that the maker intends the substance to be used as a drug.

On Capitol Hill:

The attack on nicotine was further escalated recently when the chief executives of seven U.S. tobacco companies were called to Capitol Hill to respond to allegations that they "spiked" cigarettes with nicotine.

Appearing before the House Energy and Commerce Subcommittee on Health, which is investigating the tobacco industry, the executives were asked if their companies deliberately added nicotine to cigarettes to make them more addictive. They were also asked to explain the cigarette manufacturing process and whether nicotine was indeed added back to the tobacco during production. (See also, *Guardian* 9/6/94).

In the U.K.:

The nicotine controversy has quickly crossed the Atlantic and landed in the U.K. Clive Turner, of the Tobacco Manufacturers' Association (TMA), was called upon to explain, in radio interviews, the cigarette manufacturing process as it relates to nicotine. He detailed the process of making reconstituted tobacco sheets, explaining that it results, if anything, in less nicotine in the final product.

Turner also denied suggestions that U.K. manufacturers were putting extra nicotine at the front of cigarettes so that smokers get more immediate satisfaction from the first puff. He said that he doubted that such a technique was in use anywhere. Finally, Turner explained that in the U.K., the government chemist examined brands on a monthly basis. "Anything that goes on in cigarette manufacture is approved by the Department of Health here. We work under very strict controls and we abide by them." (*World Tobacco*, May 1994).

Kessler: U.S. FDA Head Testifies on Y-1 and Nicotine

FDA Commissioner on Capitol Hill:

Appearing before Congress last week, Dr. David Kessler, head of the Food and Drug Administration (FDA), alleged that Brown & Williamson (B&W), the American subsidiary of BAT Industries, had secretly developed a genetically engineered tobacco leaf with a higher nicotine tobacco. It then used it to "spike" its cigarettes, so increasing the addiction of the 25% of Americans who still smoke.

"It was explosive testimony that captured headlines, but the response from B&W was just as robust." When its Chairman, Thomas Sandefur, appeared at the hearings, "he turned the tables on Kessler, accusing him of seeking "back-door prohibition of cigarettes in America." Mr. Sandefur said. "I have a concern that we're now headed down the road of putting the industry out of business. Under FDA jurisdiction, the agency could make it impossible for us to sell cigarettes because of the reach of their regulatory power." But behind the war of words lay a more decisive battle. "The FDA is trying to get control of the tobacco industry," said Kevin Phillips, an analyst at Kleinwort Benson. (Sunday Times 26/6/94).

Brown & Williamson's Response to Kessler

The chief executive of Brown & Williamson Tobacco Corporation (B&W) testified that the head of the federal Food and Drug Administration (FDA) made misleading statements to a congressional subcommittee by exaggerating and omitting facts about the company's development and use of "Y-1" hybrid tobacco.

In testimony provided to the "Waxman" Committee, Mr. Sandefur characterized earlier allegations by FDA Commissioner Dr. David Kessler as "false" and "nothing but grandstanding" in an effort to gain support for that agency's regulation of cigarettes.

Contrary to claims made by Dr. Kessler before the subcommittee on June 21, Mr. Sandefur pointed out three areas of disagreement:

1. The development of Y-1 was consistent with federal government policy. Three federal agencies responsible for public health previously recognized the appropriateness of considering the design of cigarettes which would deliver lower levels of tar and moderate levels of nicotine.
2. Y-1 did not increase nicotine deliveries in the company's cigarette brands. Emphasizing Dr. Kessler's omission of facts, Mr. Sandefur said, "As we told the FDA, the brands that used Y-1 delivered essentially the same nicotine as the products they replaced." Mr. Sandefur added that some of the brands containing Y-1 actually delivered less nicotine and some were higher.
3. B&W took the initiative to meet the FDA concerning Y-1. Despite what the agency described as "painstaking investigational work", the FDA never asked B&W a single question nor for any documents about Y-1 prior to the company's request for a meeting.

Mr. Sandefur also commented that, "The FDA could say, 'You can sell cigarettes, but they can't emit any secondhand smoke. It's like telling the beer companies that it's okay to sell beer as long as it doesn't contain alcohol. . . I'm concerned about government regulation of lives and lifestyles. . . We're entering the dangerous stage, where the rules are good for some, but not for all. Where rights apply to some, but not to all. Where the freedom to make choices applies to some, but not to all. Therein, lies the danger. We've all seen it in the past. I pray that it's not our future.'" (PR Newswire 23/6/94).

Mr. Sandefur told the House panel that the "high-nicotine tobacco [Y-1] was grown in Brazil to keep it out of the hands of the competition, not to fool the government. . . [and that B&W does not] manipulate nicotine in our cigarettes." He said his firm blends for taste and described nicotine as a "flavor," not a drug. (Reuters 23/6/94).

Sandefur on B&W's Internal Company Documents:

Subcommittee members presented documents received from B&W, showing that in 1976, memos discussed the importance of nicotine to a smoker's "inner need." Sandefur said he was unfamiliar with the memos, which predated his tenure.

Subcommittee Chairman Henry Waxman, also asked about statements by B&W company scientists and those of its parent firm, BATCO. For example, according to documents provided by the company at the committee's request, Sir Charles Ellis, a scientific advisor to BATCO, said in 1962 that nicotine was "a very fine drug." Mr. Sandefur said he rejected that view. (Reuters 23/6/94).

B&W is currently taking legal action against six reporters and two congressmen for airing the papers, which the company says were stolen. But the impact has already been enormous. In "emotional" testimony on Capitol Hill, Joseph Califano, who served as Jimmy Carter's health secretary, said he had spoken to the former president and both agreed that "had we known then what the tobacco companies knew . . . we would have found cigarettes addictive and moved to regulate them." (Guardian 9/6/94).

Philip Morris' (PM) Response to Kessler's Testimony:

PM issued the following statement in response to the FDA's Commissioner's testimony: "In his recent statement to Congress, FDA Commissioner Kessler implied that tobacco companies are adding ammonia to their cigarettes to increase nicotine deliveries in an attempt to 'addict' smokers. That is not true. The facts are as follows:

1. In raising the issue of the ammonia content of cigarettes, Commissioner Kessler failed to note that ammonia is a naturally occurring component of tobacco. Some types of tobacco, such as Burley, have more ammonia than others. In fact, ammonia is a natural body constituent and is also found naturally in many foods.

2. PM uses small amounts of ammonia and related compounds in the cigarette manufacturing process for such purposes as denicotinizing tobacco, as processing agents to create reconstituted tobacco, and as flavorants. Dr. Kessler did not object to the use of ammonia for such purposes.
3. The use of these small amounts of ammonia compounds by cigarette companies has been public knowledge for many years. The processes have been described in published articles and patents which were filed with the government. Further, the industry list of ingredients submitted to the Department of Human Services since 1966 lists several ammonia compounds. Finally, FDA representatives were briefed on PM's use of ammonia in cigarette processing when they visited our plant at our invitation this spring.
4. There is no indication that ammonia compounds in our cigarettes alter the amount of nicotine the smoker inhales.

In short, the presence of ammonia compounds in cigarettes does not support Dr. Kessler's allegation that cigarette companies manipulate nicotine levels to "addict their customers." (PRNewswire 23/6/94).

U.S. Tobacco Taxes: Update

To Fund Health Care Reform:

The powerful House Ways and Means Committee voted a 45-cent-per-pack increase in federal cigarette tax, to be phased in through 1999. The proposed increase is viewed as a politically important compromise, as many of the Democrats involved in writing the health care reform bill (including Committee Chairman Sam Gibbons) favored 60-cent hike. The current federal tax is 24-cents and adjustments, by other committees, in the proposed 45-cent rise are possible before the final bill is drafted.

Tobacco Ads Still a Business Tax Deduction:

The California state Senate has killed a proposal which would have "ended a business tax deduction for cigarette and tobacco advertising." The bill was backed by health organizations which sought to end a tax they believe "help subsidize an industry that made products harmful to the public."

The California Taxpayers Association warned that the "bill was a step down a slippery slope towards taking away tax breaks for advertising alcoholic beverages, fatty foods, and other products someone might deem harmful to their health." The state Franchise tax board estimated (if the bill was passed) the state could gain some \$10 million per year

in tax revenue. This figure was based portion of the \$3 billion spent annually by tobacco manufacturers on advertising in the U.S. (Reuters 16/6/94).

New Taxes will Encourage Crime:

A study, by the non-partisan Alexis de Tocqueville Institution, suggests that the prime beneficiaries of a major tax hike on tobacco will be organized crime, smugglers, and the underground economy. The study's author said, "There are strong reasons for being cautious about raising cigarette taxes. Bootlegging is already a serious problem at the state level... [and] the federal tax proposed... may not only stimulate more of this activity, but encourage cross-border smuggling with Mexico given the recent experience of Canada and the passage of NAFTA."

In February, Canada was forced to "cut its cigarette taxes by 50 percent to end a smuggling crisis that saw 30 percent to 70 percent of all cigarettes purchased illegally." The study noted that, "the lessons of history and foreign experience make it clear that there is a limit to excise taxation... they simply encourage smuggling... [and] may even reduce government revenue... The failure of our nation's wars on alcohol... and drugs... do not inspire confidence that governments can effectively prevent people from evading cigarette taxes if rates are set too high." (Business Wire 13/6/94).

Tobacco Industry Litigation in the U.S.: Update

Anti-smoking Mood and Addiction Papers Spur Litigation:

Public intolerance of ETS and allegations that cigarette makers concealed evidence about nicotine addiction are together spurring unprecedented litigation against the once-invincible tobacco industry. Legal experts say the coupling of the two issues has led lawyers, politicians, and municipalities to overcome their fear of the money-laden industry and pursue it in courts across the country.

While jurors have been reluctant in the past to award damages against tobacco companies because they held individuals responsible for their choice to smoke. But, according to Gregory Mazares, president of the nation's largest jury consulting firm, that attitude is changing. "The fact of the matter is there is growing concern among those who don't use cigarettes that they in fact can be harmed by just being in the same environment as those who do use the product... That's why there may be a sensitivity on the part of prospective jurors who may well be open to arguments relating to the impact of second-hand smoke and arguments relating to the alleged coverup about the addictive nature of the product."

Even the 1992 landmark Supreme Court decision that federally mandated health warnings has not served to shield the industry from personal injury suits did not generate litigation. Richard Daynard, a law professor who heads the Tobacco Products Liability Project, said the tobacco industry, with its seemingly boneless legal war chest, was able to defeat each of the personal injury suits brought by individual plaintiffs.

Today, manufacturers can still boast they have never paid a cent in damages, but the situation is quickly changing. Some lawyers think if the industry starts to lose a few cases, companies may have to follow the same route as asbestos makers and seek Chapter 11 bankruptcy protection.

At the same time the public's anti-smoking mood is growing, a House subcommittee is continuing to hold hearings on allegations that the tobacco industry concealed information that nicotine in cigarettes is addictive. Documents that have come out of those hearings led to the filing of at least two major class action lawsuits in March. Both cases involve many law firms that have never before entered the tobacco fray.

One of those suits was filed in San Diego, Calif., by Milberg Weiss Bershad Hynes & Lerach, a New York-based law firm best known for its representation of investors in securities fraud suits against corporations. Another class action filed in New Orleans is being funded by more than 50 law firms, many of which are prominent in asbestos and breast implant litigation.

One of the lawyers involved in that case, Charles Zimmerman of Minneapolis, said the addiction documents combined with the country's anti-smoking mood led him to enter the battle. "Timing is everything", he said. "This (litigation) is the cutting edge." (Reuters 15/6/94).

ETS and Public Smoking: US Update

The EPA Report in Congress:

In December 1993, the U.S. Environmental Protection Agency (EPA) released a 510-page document regarding the hazards of exposure to ETS. By February 1994, Carol Browner (Clinton's EPA Administrator), "relied heavily" on the report while testifying before Congress on behalf of the Smoke-Free Environment Act (SFEA). The EPA report declared ETS to be a "known human lung carcinogen." Thus, Ms. Browner and the Clinton Administration cited the report as justification for the proposed SFEA legislation.

The SFEA, authored by Rep. Henry Waxman, would "forbid smoking in [all] buildings open to the public." Armed with the EPA report congressional and public support for anti-smoking ordinances has been mounting. The EPA released the preliminary findings

of the report as early as 1990. As Ms. Browner testified, "Hundreds of local ordinances have been passed in virtually every area of the country since 1991. In the year since [its] publication... we have seen a rapid acceleration of measures to protect non-smokers in a variety of settings."

In March 1994, the Occupational Safety and Health Administration (OSHA) proposed a ban on smoking in indoor workplaces, including bars and restaurants. This proposal also enjoys the support of Clinton's Labor Department. (Media Critic Passive Reporting on Passive Smoke June 1994).

Criticism of the EPA Report

The tobacco industry was quick to point out that the EPA report contained faulty statistical analysis and was essentially an invalid study. Initially this criticism was largely dismissed as biased. To "uncover the facts [regarding the accuracy of the report] would not have required a lot of digging... In fact, most reporters were... disinclined to believe the tobacco industry... The message... [was] clear: Since the tobacco industry has refused to acknowledge that smoking causes lung cancer, people should not give any credence to their claims about ETS and lung cancer."

In July 1991, Gary L. Huber, a professor of medicine at the University of Texas, wrote that, "At least 20 confounding factors have been identified as important to the development of lung cancer. No reported study comes anywhere close to controlling, or even mentioning, half of these."

This Media Critic (MC) article points out that, "Faced with [research] evidence that was weak, inconsistent, and ambiguous, the EPA finessed some important points and gave the data a vigorous massage to arrive at the conclusion that ETS causes lung cancer." In fact, the EPA had to adopt an unconventional confidence interval of 90% in order to label the results in its report "statistically significant." This liberty taken with traditional statistical methods is a "change that in effect doubles that odds of being wrong."

The MC piece quotes Michael Fumento, who wrote a 2/2/94 article for Investor's Business Daily, which reviewed the impact of the EPA report from a scientific and financial point of view. He wrote, "Some scientists and policy analysts who say they couldn't care less about tobacco company profits or even the rights of smokers are worrying aloud that the EPA report is paving the way for justifying new health-based government regulations and programs without any real science behind them." To stress his point, Fumento cited a comment made by a "leading public-health researcher: 'Yes, it's rotten science, but it's in a worthy cause. It will help us get rid of cigarettes and become a smoke-free society.'" (Media Critic Passive Reporting on Passive Smoke June 1994).

24 Australia

Australian Government to Inquire into Tobacco and Health

The tobacco industry is to face what is described as its toughest and widest investigation. The Australian Democrats' health spokeswoman, Senator Lees, won the support of all other parties to authorize the Senate Standing Committee on Community Affairs to begin a broad inquiry. Senator Lees had been negotiating for two weeks to establish the inquiry, which will review the level of regulation covering "the manufacture, advertising, promotion and sale of tobacco products." (More details, *infra* at § 24).

It will also examine the costs to the community of tobacco-related illness, and review "mechanisms for recouping those costs". Senator Lees said that the inquiry would also press the industry to disclose the exact chemical content of cigarettes, as is done in the United States. Senator Lees has also introduced a bill in the Senate designed to close loopholes in legislation that bans most tobacco advertising.

The inquiry follows the announcement by the Philip Morris tobacco company that it would challenge in the High Court the Federal Government's legislative ban on tobacco advertising. Senator Lees said she believed the inquiry, which would get under way later in the year, could continue during the court challenge and would be finalized by early next year. (AGE (Melbourne) 9/6/94).

Health Warnings and "Plain" Packaging for Cigarettes

Australia:

The Federal Minister for Health, Dr. Lawrence, has pledged to proceed with a strict new cigarette-package labeling policy. The Minister stated his firm intention to implement the labeling requirement despite criticisms, from other parts of the government, for the proposal. Indeed, a spokeswoman for the Minister said, "We intend to proceed with the changes to packaging and have support from all the States except Victoria."

The criticism comes from the Australian Government's Industry Commission's Office of Regulation Review (GIC) which has concluded that the need for the new label laws had "not been adequately demonstrated." Responding to the GIC's finding, contained in a letter which found its way into print, the minister's spokeswoman said that it was "not a determination."

The GIC warned that the proposed legislation (which would require warnings to cover at least 25% of a pack's surface) could "devalue intellectual property and reduce competition in the industry." The commission further noted that "no evidence has been presented to suggest that smokers are inadequately informed about the risks of smoking."

A spokesman for the tobacco group W.D. and W.O. Wills said that while the company "wholeheartedly supported" clear health warnings on all cigarette packs it did have serious reservations. "What the health authorities [have done] by rushing through these regulations is not to [have taken] due regard both of the guidelines needed for such sweeping regulations, or the consequences under GATT." (Australian Financial Review 17/6/94).

2.5 Other

More "Plain" Packaging for Cigarettes

Canada:

The Canadian Tobacco Manufacturers' Council (CTMC) has responded to a health committee's report "Towards Zero Consumption: Generic Packaging of Tobacco Products." According to the CTMC, "The Committee hearings began with Canadian Health Department officials telling the Members that the available evidence did not support proceeding with plain packaging legislation. While plenty of opinion in praise of plain packaging surfaced, no evidence was presented to the Committee in contradiction of the Health Canada position." The CTMC, however, has drawn three conclusions:

"One, there is a complete absence of evidence that plain packaging will have any effect in reducing smoking uptake by young people.

Two, there is significant evidence of extensive and unjustified negative impacts in many other areas.

Third, and finally, government tobacco control policy in the past has been most often characterized by measures that did not work as advertised, had complex and costly unintended side-effects, on manufacturers and others - but continued to be staunchly and inaccurately defended by anti-tobacco groups as producing 'world precedent-setting consumption declines.'" (TDC Alert 22 '6/94).

India Drafts Tougher Tobacco Laws

The Indian government will introduce new anti-tobacco legislation at its parliament's next sitting. The bill proposes to ban all tobacco advertising, prohibit public smoking, and extend statutory health warning to non-cigarette tobacco products (which account for approximately 80% of the annual national tobacco consumption).

The legislation, if passed, would also ban all tobacco sales within a 100 meter radius of all educational institutions, medical colleges, and hospitals. In response, the tobacco industry has launched a nationwide campaign aimed at countering what it calls "Western oriented, anti-tobacco propaganda." (BMJ 11/6/94).

3. PARLIAMENTARY PROCEEDINGS

Lords Attempt to Revive Barron Bill Fails

The Barron Bill to ban tobacco advertising which was talked out at the House of Commons report stage last month, was given a new lease of life by Labour, Lib-Dem and cross-bench peers. The full text of the Barron Bill was to be tabled as an amendment to the Criminal Justice Bill, which is to be debated in the House of Lords later this month. The amendment was withdrawn on 20th June as those in support chose to withdraw the measure rather than face a possible defeat. (ES 1/6/94).

4. PRESS

4.1 News Reports

Doctors Want to Ban "Death" Cigarette Adverts

The British Medical Association (BMA) in the North is calling the controversial £1.5m advertising campaign for "Death" cigarettes sick, obscene, and offensive to relatives of those who have died from smoking related diseases. The BMA wants the advertisements banned. The Enlightened Tobacco Company, makers of "Death" cigarettes, took out a full page advertisement which claims that their brand is superior because they fully admit that smoking is bad for you. (Northern Echo 4/6/94).

United Airlines Extends Smoke-Free Trial

United Airlines has said that it will both continue and expand its test of non-smoking international flights. Beginning 8 June, additional smokeless flights will be scheduled on its routes between Heathrow and Los Angeles, San Francisco, and Washington, D.C. Selected smoking optional flights will still be scheduled on each of these three routes. (Associated Press 7/6/94).

South Africa Moves Toward Banning Public Smoking

The national health minister has given city councils the power to pass by-laws that will ban smoking in enclosed public areas. At its meeting this week, Cape Town municipal health committee members called for severe regulations that would ban smoking from virtually all public areas. (Reuters 6/6/94).

Workers' Told to "Use Patches"

Smokers are furious at being urged by their employer to use nicotine patches to "feed their habit." Managers at Borden Decorative Products (formerly Crown Wallcoverings), in Darwin, have instituted a complete smoking ban at their Beigrave Road factory, which employs 600 people. Staff is angry with a perceived loss of rights and the patronizing call from health experts who tell them to use the patches to satisfy their addictions. (Lancashire Evening Telegraph 13/6/94).

Smoking's "No Sin" at the Vatican

While Italy has been moving to restrict public smoking, the Vatican City, "traditionally the domain of 'heavy' smokers," continues to permit smoking. Residents and employees are also able to purchase duty-free cigarettes at the Vatican City supermarket at nearly a 40% savings over the price of the major brands. (Catholic Times 12/6/94).

Hungarian Tobacco Industry on the Rise

Following a trend of privatization, foreign tobacco companies have now gained approximately 95% of the Hungarian market. Manufacturing tobacco products had been a state monopoly for the past 100 years. Recently, however, western multinationals have purchased the large interests in such production. Philip Morris (U.S.), R.J. Reynolds (U.S.), Reemtsma (German), and BAT (U.K.) each have a major stake in the increasingly competitive market.

For example, British American Tobacco (BAT) acquired an 85% share of the country's leading tobacco manufacturer at Pecs, in southern Hungary. This particular facility "dominates 42% of the Hungarian market." (BBC Monitoring Service 16/6/94).

Camel Beats Ban to Advertise on Polish TV

R.J. Reynolds will advertise its Camel brand cigarettes, in 30-second spots, on PolSat. PolSat is a privately-owned Polish satellite TV station which operates Poland's only national commercial TV channel. Although tobacco advertising has been banned from TV and radio since 1989, an extension of the ban to include private stations will not be in force until 1995. (Euromarketing 14/6/94).

Potential Disclosure of Cigarette Additives in Thailand

Foreign and domestic tobacco companies may be required to reveal the additives used in the cigarettes sold in Thailand. If Tobacco Consumption Control advisors agree a draft regulation will be submitted to the Health Minister. Then, if the Minister agrees the measure could be put into effect by amending ministerial regulations. (Bangkok Post 15/6/94).

New Cigarette Producer in China

Hanson Plc., owner of Imperial Tobacco Ltd., has signed agreements with China National Tobacco Corporation. The agreement provides for the production of "international quality" cigarette and tobacco brands, at a plant south of Peking. The brands will then be sold within China and exported. (Daily Telegraph 15/6/94).

Hong Kong: "New" Tobacco Could Lead to Call for Further Tests

Anti-smoking activists are considering asking the Government to carry out more tests on two brands of cigarettes in Hong Kong alleged to contain tobacco with double the usual nicotine.

Viceroy King Size and Viceroy Light King Size, two of the most popular brands, are among cigarettes which are claimed to be made in the United States with a genetically altered tobacco plant.

The Government's laboratory last carried out nicotine tests, about two months ago. Viceroy Light King Size were found to produce 0.6 mgs of nicotine per cigarette, while Viceroy King Size contained 0.8 mgs of nicotine per cigarette - no more than other similar brands.

But the new Executive Director of the Council on Smoking and Health (COSH), Angeline OyangYing-ian, said COSH may call on the Government to carry out more tests on the two brands. "We really need to know exactly when the manufacturers started to use this new tobacco so we can test the appropriate batches. If the brands on the sale here are found to contain this new tobacco we can then bring this to the public's attention." (South China Morning Post 23/6/94).

International Round-up (TDC)

Canada: Hearings by the House of Commons Health Committee into the Federal Government's plan to impose plain packaging on the tobacco industry have ended with both sides apparently conceding that there is no convincing evidence that the move would reduce smoking.

Hong Kong: The Executive Council has approved a series of anti-smoking measures which would require all restaurants to display signs indicating whether they have a smoking area and which would prohibit selling and giving away cigarettes to under-18's. The proposals will be considered by the legislative council later this month.

Singapore: The Health Ministry has announced plans to ban smoking in all air conditioned private offices and factories before the end of the year.

Australia: An Occupational Health and Safety Code of Practice will require all enclosed work places in Canberra to become smoke free within three years.

4.2 Articles

"Catastrophe Theory and Tobacco Litigation" by Richard Daynard

In a new review of tobacco litigation, Mr. Daynard of the Tobacco Products Liability Project argues that "a possible industry defeat in any of six legal areas would be likely to produce dramatic increases in anti-tobacco litigation". Mr. Daynard claims that it is easier to imagine a sudden change from the current situation with only about 100 cases pending to a situation in which "tens of thousands of cases, reflecting the tremendous toll that cigarettes take" are brought, than to imagine an intermediate situation in which cases flow successfully through the legal system, "just a few at a time." According to the author, had the first wave of tobacco litigation prevailed, "we would now be in a situation in which the tobacco industry's victims would ordinarily bring suit". He identified six developing areas, any of which could produce a "catastrophe" situation:

- (1) The US Supreme Court's 1992 decision in Cipollone that intentional fraud or misrepresentation claims are not pre-empted;
- (2) public interest actions such as AECO and Mangini v RTR (the "Joe Camel" case);
- (3) the implications of strict liability as set out in the ruling by Judge Bogen in the Wilks case;
- (4) third-party victims suits, including not only ETS claims but also claims for damages caused by cigarette-related fires;
- (5) cessation reimbursement claims in which ex-smokers attempt to recover the costs of giving up; and
- (6) reimbursement of third-party payers of medical costs (in apparent anticipation of moves by States to recover costs of medical care) (Tobacco Control 3(2): 55-64, 1994).

3. SCIENCE

3.1 ETS developments

Environmental Tobacco Smoke (ETS): Update

EPA Report and OSHA: "Fudging the Science, Government-Style":

A recent article in the Investors Business Daily was sub-titled "Antismoking Crusade Relies On Questionable Data." It began by stating that "There's not much use arguing the point Smoking generally stunts health and abbreviates life." That said, it then posed the question, "But does secondhand smoke?" The Occupational Safety and Health Administration (OSHA) has answered "yes" and intends to address smoking in the American workplace.

A still-to-be-formulated OSHA measure seeks to ban smoking from the workplace - bars and restaurants included. OSHA's determination to intervene is based on the controversial Environmental Protection Agency (EPA). According to the report, ETS is responsible for approximately 3,000 US cancer deaths annually, and it classifies ETS as a Group A, or "known human", carcinogen.

Increasingly vocal critics of the report, not all of whom hail from the tobacco industry, charge that the EPA "massaged the scientific data in order to reach a desired conclusion."

Bonner Cohen, editor of the newsletter EPA Watch, commented: "This is not the first time, of course, that EPA has based a policy on science which is of an extremely dubious nature. I think the examples of asbestos and dioxin ... and ETS are examples of regulatory policy with very, very far-reaching implications based on science which is clearly wanting." (Investors Business Daily 14/6/94).

RJ Reynolds (RJR) Probes into ETS and Disputes EPA Findings

RJR undertook research on its own in response to an EPA study which concluded second-hand smoke (ETS) can be more dangerous than active smoking. The EPA findings are part of the basis being used to ban smoking in many public places.

Dr. Chris Coggins, a Reynolds Tobacco principal scientist and board certified toxicologist, reviewed scientific data on the amount of ETS particles typically found in homes where smoking takes place. "[I]n plain English," Dr. Coggins said, "any material can be made dangerous if the dose is big enough. But concentrations measured in millionths of a gram per cubic metre - the levels typically found for second-hand smoke - represent such minuscule doses that it is scientifically implausible that they could result in meaningful toxicological activity."

Dr. Coggins pointed out there were "significant flaws in the data that the EPA report on secondhand smoke is based on:

In a month, a nonsmoker living with a smoker would, on average, be exposed to second-hand smoke equivalent to smoking about 1 cigarette.

During the same time period a non-smoking waiter working eight hours a day, five days a week would, on average, be exposed to the equivalent of two cigarettes.

A non-smoker sharing a modern office with a smoker would, on average, be exposed to the equivalent of about 1 and 1/4 cigarettes."

On the same topic, a March 1994 Gallup/CNN/USA Today poll said:

- 86 per cent of Americans believe smoking should be legal.
- 61 per cent of Americans oppose smoking bans in restaurants.
- 67 per cent oppose workplace smoking bans.
- 75 per cent oppose bans in hotels and motels.

(Debit News Record 1/6/94).

Fontham, E et al "Environmental Tobacco Smoke and Lung Cancer in Nonsmoking Women"

This the final report on a five-year multi-centre case-control; three-year results were published in 1991. The completed study is now the largest ETS lung cancer study (by number of lung cancers). "Tobacco use by spouse(s) was associated with a 30% excess risk of lung cancer: all types of primary lung carcinoma . . . , pulmonary adenocarcinoma . . . and other primary carcinomas of the lung . . . an increasing RR of lung cancer was observed with increasing pack-years of spousal ETS exposure . . . such that an 80% excess risk of lung cancer was observed for subjects with 80 or more pack-years of exposure from a spouse . . .

"No significant association was found between exposure during childhood to household ETS exposure from mother, father, or other household members. . . ." (Note that cancers were histologically confirmed.). (Fombam, E. et al: *Journal of the American Medical Association*, 8/6/94).

Clark, S et al "Passive Smoking Among Asthmatic Children: Questionnaire or Objective Assessment?"

"An increasing number of studies have implicated passive smoking as a definite threat to non-smokers' health. Self-reports of smoking status may not always be reliable, particularly in situations where the smoker feels under pressure to give up smoking". This study used questionnaires together with salivary cotinine, and "objective measures" of nicotine exposure, to investigate ETS exposure in asthmatic and age-matched control children. Parents completed the questionnaire. Results showed that 31% of the asthmatic patients were exposed to ETS according to parents, but 69% by analysis of the cotinine test. From the control group, figures were 40% and 50% respectively. "Therefore, an objective assessment is essential as ETS is more ubiquitous than is apparent from the questionnaire alone" (*Clin and Exp Allergy* 24: 276-80, 1994).

McCredie, M et al "Antenatal Risk Factors for Malignant Brain Tumours in New South Wales Children"

A population-based case-control study of risk factors for brain tumours. "No link was found with tobacco smoking by the mother before or during pregnancy. While exposure during pregnancy of the mother to tobacco smoke of the father appeared to double the risk of childhood brain tumours and a similar risk was found for father (but not mother) smoking before the index pregnancy, there was no 'dose-response' and the increased risk was confined to data supplied by the mother (rather than the father himself)." (*Int J Cancer* 56: 6-10, 1994).

McCredie, M et al "Perinatal and Early Post-Natal Risk Factors for Malignant Brain Tumours in New South Wales Children"

See above. This study does not appear to report ETS exposure as a risk factor (*Int J Cancer* 56: 11-15, 1994).

Wang, F.-L. et al "Childhood and adolescent passive smoking and the risk of female lung cancer"

This is a recent paper which claims a that statistically significant relationship exists between ETS exposure in childhood and the risk of lung cancer in females. *International Journal of Epidemiology*; vol.23, 223-230 (1994).

3.3 Papers noted

Seaton, A et al

"Increase in Asthma: a More Toxic Environment or a More Susceptible Population?"
Thorax 49:171-4 (1994).

Kieser, J and Groeneveld, H

"Effects of Pre-Natal Exposure to Tobacco Smoke on Developmental Stability in Children"
J of Gen Gen and Dev Biology: 14(1):43-7 (1994).

Rowe-Jones, J.M. et al

"Passive Smoking and Otitis Media with Effusion in Children"
Abstract British Association For Pediatric Otorhinolaryngology, vol. 343, 115:
(21/6/94).

Jones, A

"Screening for Asthma in Children"
Brit J Gen Practice 44(381):179-84 (1994).

Oghom, C et al

"Urinary Cotinine as a Measure of Passive Smoke Exposure in Asthmatic Children"
Clin Ped 33(4):220-6 (1994).

Kinn, P and Mangin, P

"Evidence of Gestational Heroin or Nicotine Exposure Analysis of Fetal Hair"
Env Sci Int 63:99-104 (1993).

Erster, V

"Epidemiology of Lung Cancer in Women"
Annals of Epj 4:102-110 (1994).

Guneser, S et al

"Effects of Indoor Environmental Factors on Respiratory Systems of Children"
J Trop Pediatr 40(2):114-6 (1994).

Rajini, P et al

"Decreased Fetal Weights in Rats Exposed to Sidestream Cigarette Smoke"
Fund and App Toxicology 22(3):400-4 (1994).

Hecht, S et al

"Biomarkers for Human Uptake and Metabolic Activation of Tobacco-specific Nitrosamines"
Cancer Res 54(8):1912-7 (1994).

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IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL DISTRICT
OF JONES COUNTY, MISSISSIPPI

ESTATE OF BURL BUTLER,
by and through AVA DEAN BUTLER,
Executrix of the Estate of BURL BUTLER,
and on behalf of all wrongful death
beneficiaries of BURL BUTLER

PLAINTIFF

v.

Civil Action No.: 94-5-53

PHILIP MORRIS, INC.,
PHILIP MORRIS COMPANIES, INC.,
BROWN & WILLIAMSON TOBACCO CORP.,
BATUS, INC.,
BAT INDUSTRIES PLC
R.J. REYNOLDS TOBACCO CO.,
RJR NABISCO, INC.,
LIGGETT GROUP, INC.,
LIGGETT & MYERS, INC.,
THE BROOKE GROUP, LIMITED
AMERICAN BRANDS, INC.,
THE AMERICAN TOBACCO CO.,
LOEWS CORP.,
LORILLARD CORP.,
THE COUNCIL FOR TOBACCO RESEARCH--U.S.A. INC.,
TOBACCO INSTITUTE RESEARCH COMMITTEE
THE TOBACCO INSTITUTE, INC.,
HILL & KNOWLTON, INC.,
LAUREL CIGAR & TOBACCO CO., and
DOES A-Z.

DEFENDANTS

AMENDED COMPLAINT

The Plaintiff, the Estate of Burl Butler, by and through Ava Dean Butler, Executrix of the Estate of Burl Butler and on behalf of all wrongful death beneficiaries of Burl Butler, files this Complaint for wrongful death against the Defendants, R.J. Reynolds Tobacco Co., RJR Nabisco, Inc., Brown & Williamson Tobacco Corp., Batus, Inc., BAT Industries PLC, Philip Morris, Inc., Philip Morris Companies, Inc., Liggett Group, Inc., Liggett & Myers, Inc., The Brooke Group, Limited, American Brands, Inc., The American Tobacco Company, Loews Corp., Lorillard Corp., The Council for Tobacco Research--U.S.A. Inc. (successor to the Tobacco Institute Research Committee), The Tobacco

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Institute, Inc., Hill & Knowlton, Inc., Laurel Cigar & Tobacco Company, and Doss A-Z as follows:

1. Burl Butler died on May 7, 1994 of lung cancer caused by his exposure to second-hand or passive cigarette smoke. Ava Dean Butler is the executrix of the estate of Burl Butler and the surviving spouse of Burl Butler.

2. R.J. Reynolds Tobacco Co. is a New Jersey corporation whose principal place of business is located at 4th & Main Street, Winston-Salem, North Carolina 27102, and upon whom process may be served by serving its registered agent, Prentice-Hall Corp. System, Inc., 506 South President Street, Jackson, Mississippi 39201. R.J. Reynolds is a wholly-owned subsidiary of RJR Nabisco, Inc. At all pertinent times, R.J. Reynolds Tobacco Co. manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes.

3. RJR Nabisco, Inc. is a Delaware corporation whose principal place of business is 1301 Avenue of the Americas, New York, New York 10015, and upon whom service of process may be served at that address by serving an officer, a managing or general agent, or other agent authorized by appointment or by the law to receive service of process, pursuant to Miss. Code Ann. §13-3-57 (Supp. 1993) and Rule 4 of the Mississippi Rules of Civil Procedure, or by service of process upon its agent authorized to receive service of process, Prentice-Hall Corporation System, Inc., 32 Lockerman Square, Suite L-100, Dover, Delaware 19901. RJR Nabisco, Inc. is the parent corporation of R.J. Reynolds, Inc. At all pertinent times, RJR Nabisco, Inc. through its agents and wholly owned subsidiary, R.J. Reynolds, Inc., manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes and placed these products into the stream of commerce and thus into the State of Mississippi.

4. Brown & Williamson Tobacco Corp. is a Delaware corporation whose principal place of business is located at 1500 Brown & Williamson Tower, Louisville.

Kentucky, and upon whom process may be served by serving its managing or general agent at that address pursuant to the Mississippi long-arm statute and Rule 4 of the Mississippi Rules of Civil Procedure. At all pertinent times, Brown & Williamson Tobacco Corp. manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes.

5. B&W, Inc. is a Delaware corporation with its principal place of business at 1500 Brown & Williamson Tower, Louisville, Kentucky 40203, and upon whom service of process may be served at that address by serving an officer, a managing or general agent, or other agent authorized by appointment or by the law to receive service of process, pursuant to Miss. Code Ann. §13-3-57 (Supp. 1993) and Rule 4 of the Mississippi Rules of Civil Procedure, or by service of process upon its agent authorized to receive service of process. The Corporation Trust Company, 1209 Orange Street, Wilmington, Delaware 19801. B&W, Inc. is the parent corporation of Brown & Williamson Tobacco Corporation. At all pertinent times, B&W, Inc. through its agents and wholly owned subsidiary, Brown & Williamson, manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes and placed these products into the stream of commerce and thus into the State of Mississippi.

6. BAT Industries PLC is a British corporation with its principal place of business at Windsor Office, 50 Victoria Street, London, England, and upon whom service of process may be served at that address by serving an officer, managing or general agent, or any other agent authorized by appointment or by the law to receive service of process, pursuant to Miss. Code Ann. §13-3-57 (Supp. 1993) or Rule 4 of the Mississippi Rules of Civil Procedure. BAT Industries is the parent corporation of Brown & Williamson Tobacco Company. At all pertinent times, BAT Industries through its agents and wholly owned subsidiary, Brown & Williamson, manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including

various brands of cigarettes and placed these products into the stream of commerce and thus into the State of Mississippi.

7. Philip Morris, Inc. is a Virginia corporation whose principal place of business is located at 120 Park Avenue, New York, New York 10017, and upon whom process may be served by serving its managing or general agent at that address pursuant to the Mississippi long-arm statute and Rule 4 of the Mississippi Rules of Civil Procedure. At all pertinent times, Philip Morris, Inc. manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes.

8. Philip Morris Companies, Inc., is a Virginia corporation whose principal place of business is located at 120 Park Avenue, New York, New York 10018, and upon whom service of process may be served at that address by serving an officer, a managing or general agent, or other agent authorized by appointment or by the law to receive service of process, pursuant to Miss. Code Ann. §13-3-57 (Supp. 1993) and Rule 4 of the Mississippi Rules of Civil Procedure, or by service of process upon its agent authorized to receive service of process, Mr. Hill B. Welford, Jr., Esquire, 951 East Byrd Street, Richmond, Virginia 23219. Philip Morris Companies, Inc. is the parent corporation of Philip Morris, Inc. At all pertinent times, Philip Morris Companies, Inc., through its agents and wholly owned subsidiary, Philip Morris, Inc., manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes and placed these products into the stream of commerce and thus into the State of Mississippi.

9. Liggett Group, Inc. is a Delaware corporation whose principal place of business is located at Main & Fuller Station, Durham, North Carolina 27702, and upon whom process may be served by serving its managing or general agent at that address pursuant to the Mississippi long-arm statute and Rule 4 of the Mississippi Rules of Civil Procedure. Liggett Group, Inc. is the parent corporation of Liggett & Myers, Inc. At all

perinent times, Liggett Group, Inc., through its agents and wholly owned subsidiary, Liggett & Myers, Inc., manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes and placed these products into the stream of commerce and thus into the State of Mississippi.

10. Liggett & Myers, Inc., is a Delaware corporation whose principal place of business is located at Main & Fuller Station, Durham, North Carolina 27702, and upon whom process may be served by serving its managing or general agent at that address pursuant to the Mississippi long-arm statute and Rule 4 of the Mississippi Rules of Civil Procedure. Liggett & Myers, Inc., is a wholly-owned subsidiary or division of Liggett Group, Inc. At all pertinent times, Liggett Group, Inc. and Liggett & Myers manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes.

11. The Brooke Group, Limited, the parent corporation of Liggett Group, Inc. and Liggett & Myers, Inc., is a Delaware corporation with its principal place of business at 300 North Duke Street, Durham, North Carolina, and upon whom service of process may be served at that address by serving an officer, a managing or general agent or other agent authorized by appointment or by the law to receive service of process, pursuant to Miss. Code Ann. §13-5-57 (Supp. 1993) and Rule 4 of the Mississippi Rules of Civil Procedure, or by service of process upon its agent authorized to receive service of process, The Corporation Trust Company, 1209 Orange Street, Wilmington, Delaware 19801. At all pertinent times, The Brooke Group, Limited, through its agents and wholly owned subsidiary, Liggett & Myers, Inc. and Liggett & Myers, Inc., manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes and placed these products into the stream of commerce and thus into the State of Mississippi.

12. American Brands, Inc. is a New Jersey corporation whose principal place of business is located at 245 Park Avenue, New York, New York 10167, and upon whom process may be served by serving its registered agent, Prudice-Hall Corp. System, Inc., 506 South President Street, Jackson, Mississippi 39201. At all pertinent times, American Brands, Inc., through its agents and wholly owned subsidiary, The American Tobacco Company, manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes and placed these products into the stream of commerce and thus into the State of Mississippi.

13. The American Tobacco Company is a Delaware corporation whose principal place of business is located at 245 Park Avenue, New York, New York 10167, and upon whom process may be served by serving its registered agent, United States Corporate Co., 506 South President Street, Jackson, Mississippi 39201. The American Tobacco Company is a wholly-owned subsidiary or division of American Brands, Inc. At all pertinent times, American Brands, Inc. and The American Tobacco Company manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes.

14. Loews Corp. is a Delaware corporation whose principal place of business is located at 1 Park Avenue, New York, New York 10016, and upon whom process may be served by serving its managing or general agent at that address pursuant to the Mississippi long-arm statute and Rule 4 of the Mississippi Rules of Civil Procedure. Loews Corp. is the parent corporation of Lorillard Corp. At all pertinent times, Loews Corp., through its agents and wholly owned subsidiary, Lorillard Corp., manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes and placed these products into the stream of commerce and thus into the State of Mississippi.

15. Lorillard Corp. is a Delaware corporation whose registered agent for service of process is The Corporation Trust Company, 1209 Orange Street, Bloomington,

Delaware 19801, and whose principal place of business is located at: 1 Park Avenue, New York, New York 10016, and upon whom process may be served by serving its managing or general agent at that address pursuant to the Mississippi long-arm statute and Rule 4 of the Mississippi Rules of Civil Procedure. Lorillard Corp. is a wholly-owned subsidiary or division of Loews Corp. At all pertinent times, Loews Corp. and Lorillard Corp. manufactured, tested, designed, marketed, packaged, sold, distributed, and/or advertised numerous tobacco products, including various brands of cigarettes.

16. The Council for Tobacco Research—U.S.A., Inc. (successor in interest to the Tobacco Institute Research Committee) is a nonprofit corporation organized under the laws of the State of New York with its principal place of business located at: 900 3rd Avenue, New York, New York 10022, and upon whom service of process may be served at that address by serving an officer, a managing or general agent, or other agent authorized by appointment or by the law to receive service of process, pursuant to Miss. Code Ann. §13-3-57 (Supp. 1993) and Rule 4 of the Mississippi Rules of Civil Procedure.

17. The Tobacco Institute, Inc. is a non-profit corporation organized under the laws of the State of New York whose agent for service of process in New York is C.T. Corp., 1633 Broadway, New York, New York 10019, with its principal place of business located at 1875 "I" Street, N.W., Suite 800, Washington, D.C. 20006, and upon whom process may be served at that address by serving an officer, a managing or general agent, or other agent authorized by appointment or by law to receive service of process, pursuant to Miss. Code Ann. §13-3-57 (Supp. 1993) and Rule 4 of the Mississippi Rules of Civil Procedure.

18. Hill & Knowlton, Inc., is a Delaware corporation whose registered agent for service of process is The Corporation Trust Company, 1209 Orange Street, Bloomington, Delaware 19801, with its principal place of business located at 420 Lexington Avenue, New York, New York 10070, and upon whom process may be served at that address by serving an officer, a managing or general agent, or other agent authorized

by appointment or by law to receive service of process, pursuant to Miss. Code Ann. § 13-5-57 (Supp. 1993) and Rule 4 of the Mississippi Rules of Civil Procedure.

19. Laurel Cigar & Tobacco Company is a Mississippi corporation whose principal place of business is located at 803 South Magnolia Street, Laurel, Mississippi 39240, and upon whom process may be served by serving its registered agent, W.E. Elkins at that address.

20. The defendants Does "A" through "Z", whether singular or plural, whether individual or corporate, and without limitation as to number, (M.R.C.P. 9(h) Defendants), are persons, corporations, and/or business entities whose identities are not precisely known to the plaintiffs but who may be described as certain manufacturers and distributors, and/or certain of their trade organizations, public relations firms, law firms, and other such entities that, at all pertinent times, manufactured, tested, designed, advertised, marketed, packaged, sold, distributed, and/or placed into the stream of commerce in and into the State, numerous tobacco products, including various brands of cigarettes, or, in the course of business, materially participated with, conspired with and/or otherwise aided, abetted and assisted others in so doing, all to the detriment of Burt Butler as alleged herein.

21. R.J. Reynolds Tobacco Co., RJR Nabisco, Inc., Brown & Williamson Tobacco Corp., B&W Corporation, BAT Industries PLC, Philip Morris, Inc., Philip Morris Companies, Inc., Liggett Group, Inc., Liggett & Myers, Inc., Brooks Group, Limited, American Brands, Inc., The American Tobacco Company, Loews Corp., and Lorillard Corp. and certain of Does A-Z collectively are referred to hereinafter as THE TOBACCO COMPANIES.

22. Laurel Cigar & Tobacco Company and certain of the DOES A-Z are collectively referred to hereinafter as THE TOBACCO WHOLESALERS. At all pertinent times, THE TOBACCO WHOLESALERS advertised, marketed, retailed, prepared, and/or sold tobacco products, including cigarettes, that were manufactured, tested, designed, marketed, packaged, sold, distributed, and advertised by THE TOBACCO COMPANIES.

These tobacco products, including cigarettes, were placed in the stream of commerce by THE TOBACCO COMPANIES and THE TOBACCO WHOLESALERS for ultimate sale to and use by, near, and/or in the presence of the general public.

23. At all pertinent times, THE TOBACCO WHOLESALERS were authorized retail and/or wholesale distributors, sellers, and/or dealers of and on behalf of THE TOBACCO COMPANIES. At all pertinent times, THE TOBACCO WHOLESALERS were the agents, servants, and/or employees of THE TOBACCO COMPANIES and acted within the line and scope of said agency, services, and/or employment.

24. The Council for Tobacco Research—U.S.A. Inc., (successor to the Tobacco Institute Research Committee) and The Tobacco Institute, Inc., collectively are referred to hereinafter as the THE TOBACCO TRADE ASSOCIATIONS.

25. Hill & Knowlton, Inc. and certain of the DOES A-Z collectively are referred to hereinafter as THE TOBACCO CONSULTANTS.

26. One or more of Defendants can be found in Jones County, Mississippi. The cause of action occurred or accrued in Jones County. Thus, venue is proper in Jones County.

27. For many years, Burl Butler owned, operated, and worked in a barber shop in Laurel, Mississippi. Throughout those many years on a regular and continuing basis, Burl Butler was exposed to and unintentionally inhaled passive cigarette and tobacco smoke from cigarettes and other tobacco products of THE TOBACCO COMPANIES and THE TOBACCO WHOLESALERS. Due to the inherently dangerous defective design and condition of these tobacco products and the passive, toxic smoke produced as a result of the use of same, and due to Defendants' negligence, conduct, and breaches of warranty(ies), Burl Butler suffered severe and disabling injuries, including malignant lung cancer which spread throughout his body and caused his death.

28. As a proximate result of the design, testing, manufacturing, marketing, and assembly choices and practices of THE TOBACCO COMPANIES, the aforesaid tobacco products and cigarettes are defective and unreasonably dangerous.

29. The aforesaid tobacco products and cigarettes reached the users in a substantially similar condition in which they were in when originally manufactured, distributed, and sold. At the time the aforesaid tobacco products and cigarettes were sold or placed on the market, they were in a defective condition, unreasonably dangerous to users, and unreasonably dangerous to persons in the vicinity of the users, specifically to Burt Butler, an innocent nonsmoking bystander.

30. Defendants negligently failed to effectively alert and warn innocent nonsmoking bystanders of the aforesaid tobacco products and cigarettes, including Burt Butler, as to the risks and hazards associated with the passive and unintentional inhalation of the smoke byproducts of said tobacco products and cigarettes.

31. Even after THE TOBACCO COMPANIES knew or should have known of the unreasonably dangerous and defective nature of the aforesaid tobacco products and cigarettes, THE TOBACCO COMPANIES persisted in designing, testing, manufacturing, fabricating, assembling, marketing, advertising, distributing, and selling these products in an inherently dangerous condition.

32. Defendants expressly and impliedly warranted that the aforesaid tobacco products and cigarettes were in a defect-free and reasonably safe condition at the time of sale, yet in fact they were not due to the aforementioned matters. These tobacco products' condition was inconsistent with express warranties and with implied warranties of merchantability and of fitness for particular purpose. Defendants therefore breached their respective warranties regarding the aforesaid tobacco products and cigarettes.

33. Defendants were negligent in the design, testing, manufacture, distribution, marketing, and assembly of the aforesaid tobacco products and cigarettes and were further negligent because the intended use of same resulted in an unreasonable risk of harm

foreseeable to Defendants, yet unknown or not fully appreciated by persons like Burl Butler. Defendants were further negligent in failing to adequately warn users and innocent nonsmoking bystanders, including Burl Butler, of the dangers and risks associated with the aforesaid tobacco products and cigarettes. Defendants nonetheless failed to take proper remedial measures and persisted in designing, manufacturing, and marketing these products in an inherently dangerous condition, and without adequate warnings.

34. At all pertinent times, Defendants owed a duty to Burl Butler to properly design, test, manufacture, inspect, label, distribute, advertise, market, and sell the aforesaid tobacco products and cigarettes and to make truthful statements and disclose pertinent information concerning the same.

35. At all pertinent times, Defendants knew, or in the exercise of reasonable care, should have known, that the aforesaid tobacco products and cigarettes were not properly designed, manufactured, tested, inspected, labeled, distributed, advertised, marketed, or sold for the use and purpose for which intended, and that it was foreseeable that they would cause serious injury and death to non-users and bystanders like Burl Butler.

36. Defendants so negligently and carelessly designed, manufactured, tested (or failed to test), inspected (or failed to inspect), labeled (or failed to label), distributed, advertised, and marketed the aforesaid tobacco products and cigarettes that same were defective, dangerous, and unsafe for the use and purpose for which they were designed and, as to the aforesaid tobacco products and cigarettes, when used in the presence of bystanders like Burl Butler. Defendants, moreover, intentionally and/or negligently failed to disclose the aforesaid to the general public, including Burl Butler. Defendants instead misrepresented, either intentionally or negligently, to the general public and Burl Butler that the aforesaid tobacco products and cigarettes could be used safely near and in the presence of innocent nonsmoking bystanders.

37. The aforesaid cigarettes of defendants are products intended for human consumption, yet are inherently dangerous and present a genuine and unreasonable threat to the health and life of both the consumer and to innocent bystanders, including Plaintiff Burt Butler. Defendants are therefore absolutely liable to Plaintiffs for their compensatory damages set out herein.

38. THE TOBACCO COMPANIES, THE TOBACCO TRADE ASSOCIATIONS and THE TOBACCO CONSULTANTS have conspired together, said conspiracy being for the purpose of and having the effect of fraudulently misleading the American public, including Burt Butler, with regard to the health risks of smoking and/or passive or environmental tobacco smoke. Specifically, the fraud alleged is that THE TOBACCO COMPANIES, THE TOBACCO TRADE ASSOCIATIONS, and THE TOBACCO CONSULTANTS knew or should have known of the hazards of cigarette smoking and environmental tobacco smoke, concealed information which demonstrated the dangers of smoking and/or environmental tobacco smoke for decades and affirmatively misled the public with regard to the risks of smoking and/or environmental tobacco smoke. In 1953, in response to publicizations of conclusive biological studies linking cigarette smoking and cancer, the presidents of the leading tobacco manufacturers, hired the public relations firm of Hill & Knowlton, Inc., to deal with the "health scare" presented by smoking. Acting in concert, at a public relations strategy meeting, the participants decided to organize a committee to be specifically charged with the "public relations" function. This committee was created to take an offensive stance to combat the adverse publicity that the tobacco industry was receiving due to the obvious health dangers presented by smoking. As a result of these strategy meetings, the Tobacco Institute Research Committee (TIRC), an entity later known as The Council for Tobacco Research (CTR), was formed.

39. The TIRC promised to learn the facts about smoking and health. The participating TOBACCO COMPANIES promised to sponsor independent research on smoking and health and to fully and publicly disclose the results of their research. Rather

than fulfill these promises. THE TOBACCO COMPANIES and THE TOBACCO CONSULTANTS, acting by and through THE TOBACCO TRADE ASSOCIATIONS, refused, undermined, and neutralized information coming from the medical and scientific community. They caused the cancellation of press conferences where scientists sought to inform the public, actively and wrongfully suppressed the publishing of reports concerning the dangers presented by cigarette smoking and by cigarette smoke, attacked research linked to cigarette smoke and disease, and threatened professionally the researchers themselves.

40. In addition to the known carcinogenic nature of tobacco, cigarettes contain many other known carcinogens, as well as thousands of other harmful compounds and additives. These harmful substances are unreasonably dangerous and present an unacceptable risk to the passive smoker. Passive (or sidestream) smoke contains an even greater amount of these harmful substances due to the fact it is not passed through a filter before reaching the lungs.

41. THE TOBACCO COMPANIES could have designed and manufactured a safer cigarette, but refused to do so. THE TOBACCO COMPANIES suppressed information pertaining to "safe" cigarette projects. The "safe" cigarette was never marketed.

42. Cigarettes sold by the Defendants contain nicotine, a highly addictive substance. Although publicly denying the addictive nature of nicotine, tobacco industry documents indicate that the Defendants have been aware of the addictive qualities of nicotine for several decades. FDA authorities have recently recognized the mounting evidence that the tobacco industry has regulated the amount of nicotine in its products for the very purpose of inducing addiction. The purposeful and conspiratorial acts of the Defendants which caused the addiction of many smokers to nicotine resulted in Burl Butler's exposure to second-hand cigarette smoke and his subsequent lung cancer and death.

43. Additionally, corporate officials of THE TOBACCO COMPANIES, THE TOBACCO TRADE ASSOCIATIONS and THE TOBACCO CONSULTANTS have attempted wrongfully to create a privilege for various documents that they wish to conceal from the public by sending such documents through their legal departments and law firms in order that they might claim the documents to be protected by the attorney-client or attorney work-product privileges. A "Special Projects" division within the CTR was set up towards this end.

44. As a result of the wrongful suppression, active concealment and/or misrepresentation of the true relationship between cigarette smoke and lung cancer and as a result of the conspiracy entered into by THE TOBACCO COMPANIES, THE TOBACCO TRADE ASSOCIATIONS, and THE TOBACCO CONSULTANTS many Americans, including Burl Butler, were given false information which contributed to their inhalation of smoke and subsequent lung cancer and death.

45. Defendants therefore are individually, jointly, and severally liable to the Plaintiffs in strict liability, negligence, breach(es) of warranty(ies), fraud, conspiracy and misrepresentation for the wrongful death of Burl Butler.

46. The omissions, conduct, breaches, failures, negligence, fraud, conspiracy and misrepresentations of THE TOBACCO COMPANIES, THE TOBACCO TRADE ASSOCIATIONS, and THE TOBACCO CONSULTANTS were grossly negligent and/or were in conscious, willful, wanton, and reckless disregard for the safety and life of persons, including Burl Butler, therefore justifying an award of punitive damages against THE TOBACCO COMPANIES, THE TOBACCO TRADE ASSOCIATIONS, and THE TOBACCO CONSULTANTS.

47. As a result and/or contributing cause of Defendants' negligence, failures to warn, breaches of warranties, fraud, conspiracy, misrepresentations, and the unreasonably dangerous condition of the aforesaid tobacco products and cigarettes, Burl Butler was severely injured during his lifetime, and suffered physical and mental pain and suffering.

physical disability, medical and health care expenses, loss of enjoyment of life, and severe emotional distress. Consequently, the Plaintiffs are entitled to monetary compensation for lifetime damages sustained by Burl Butler.

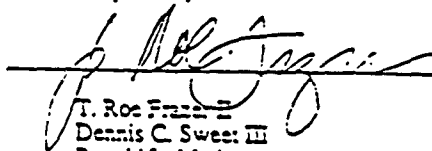
48. As a result and/or contributing cause of Defendants' negligence, failures to warn, breaches of warranties, fraud, conspiracy, misrepresentations, and the unreasonably dangerous condition of the aforesaid tobacco products and cigarettes, Burl Butler suffered a wrongful and premature death and was severely injured, and suffered physical and mental pain and suffering, physical disability, medical and health care expenses, loss of enjoyment of life, and severe emotional distress. Consequently, the Plaintiffs are entitled to monetary compensation for the wrongful death suffered by Burl Butler.

Wherefore, premises considered, the Plaintiffs demand a trial by jury and judgment against THE TOBACCO COMPANIES--R.J. Reynolds Tobacco Co., RJR Nabisco, Inc., Brown & Williamson Tobacco Corp., Batus, Inc., Philip Morris, Inc., Philip Morris Companies, Inc., Liggett Group, Inc., Liggett & Myers, Inc., The Brooke Group, Limited, American Brands, Inc., The American Tobacco Company, Loews Corp., and Lorillard Corp.--and against THE TOBACCO WHOLESALERS--Laurel Cigar & Tobacco Company and DOES A-Z--and against THE TOBACCO TRADE ASSOCIATIONS--The Council for Tobacco Research--U.S.A. Inc., (successor to The Tobacco Institute Research Committee) and The Tobacco Institute, Inc.--and against THE TOBACCO CONSULTANTS--Hill & Knowlton, Inc. and certain of DOES A-Z--individually, jointly, and severally, in the sum of Fifty Million Dollars (\$50,000,000.00) in compensatory damages and all costs and expenses, and additionally against THE TOBACCO COMPANIES--R.J. Reynolds Tobacco Co., RJR Nabisco, Inc., Brown & Williamson Tobacco Corp., Batus, Inc., Philip Morris, Inc., Philip Morris Companies, Inc., Liggett Group, Inc., Liggett & Myers, Inc., The Brooke Group, Limited, American Brands, Inc., The American Tobacco Company, Loews Corp., Lorillard Corp. and certain

of Does A-Z--individually, jointly, and severally, punitive damages in the sum of Six
Hundred Million Dollars (\$600,000,000.00).

Dated: May 19, 1994.

Respectfully submitted:



T. Roe Frazer II
Dennis C. Sweet III
Ronald L. Motley
Charles W. Patrick Jr.
Don Batten
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ATTORNEY FOR PLAINTIFFS

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Court Square North
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Lexington, Mississippi 39095
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IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL DISTRICT
OF JONES COUNTY, MISSISSIPPI

ESTATE OF BURL BUTLER,
by and through AVA DEAN BUTLER,
Executrix of the Estate of BURL BUTLER,
and on behalf of all wrongful death
beneficiaries of BURL BUTLER

PLAINTIFF

V.

Civil Action No.: 94-5-53

PHILIP MORRIS, INC.,
PHILIP MORRIS COMPANIES, INC.,
BROWN & WILLIAMSON TOBACCO CORP.,
BATUS, INC.,
BAT INDUSTRIES PLC
R.J. REYNOLDS TOBACCO CO.,
RJR NABISCO, INC.,
LIGGETT GROUP, INC.,
LIGGETT & MYERS, INC.,
THE BROOKE GROUP, LIMITED
AMERICAN BRANDS, INC.,
THE AMERICAN TOBACCO CO.,
LOEWS CORP.,
LORILLARD CORP.,
THE COUNCIL FOR TOBACCO RESEARCH-U.S.A. INC.,
TOBACCO INSTITUTE RESEARCH COMMITTEE
THE TOBACCO INSTITUTE, INC.,
HILL & KNOWLTON, INC.,
LAUREL CIGAR & TOBACCO CO., and
DOES A-Z

MAY 23 1994

J.K.W.

DEFENDANTS

SUMMONS

THE STATE OF MISSISSIPPI

TO: Managing or General Agent for
BROWN & WILLIAMSON TOBACCO CORP.
1500 Brown & Williamson Tower
Louisville, Kentucky

NOTICE TO DEFENDANT

THE COMPLAINT AND PLAINTIFFS DISCOVERY ATTACHED TO THIS
SUMMONS IS IMPORTANT AND YOU MUST TAKE IMMEDIATE ACTION TO
PROTECT YOUR RIGHTS.

You are required to mail or hand-deliver a copy of a written response to the
Complaint, to Cynthia Langston Lon, the attorney for the Plaintiff, whose address is 418

402176017

East Amite Street, P. O. Box 23307, Jackson, Mississippi 39225. Your response must be mailed or delivered within thirty (30) days from the date of delivery of this summons and complaint or a judgement by default will be entered against you for the money or other things demanded in the complaint. You must also mail or deliver your response to Plaintiff's Request for Production to Defendant Brown & Williamson Tobacco Corp. being served herewith within forty-five (45) days to Cynthia Langston Lott.

You must also file the original of your response with the Clerk of this Court within a reasonable time afterward.

Issued under my hand and the seal of this Court, this the 19 day of May 1994.

WAYNE MYRICK, CIRCUIT CLERK
JONES COUNTY, MISSISSIPPI

By: Eric Bullard D.C.

Attorneys for Plaintiffs:

T. Roe Frazer, II
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LANGSTON FRAZER & SWEET
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Ronald L. Motley
Charles W. Patrick, Jr.
NESS MOTLEY LOADHOLT RICHARDS & POOLE
151 Meeting Street, Suite 600
Post Office Box 1137
Charleston, South Carolina 29402
(803) 577-6747

402176018

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B. A. ? INDUSTRIES LEGAL DEPT

No. 1948



IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL DISTRICT
OF JONES COUNTY, MISSISSIPPI

ESTATE OF BURL BUTLER,
by and through AVA DEAN BUTLER,
Executrix of the Estate of BURL BUTLER,
and on behalf of all wrongful death
beneficiaries of BURL BUTLER

PLAINTIFF

V.

Civil Action No.: 94-5-53

PHILIP MORRIS, INC.,
PHILIP MORRIS COMPANIES, INC.,
BROWN & WILLIAMSON TOBACCO CORP.,
BATUS, INC.,
BAT INDUSTRIES PLC
R. J. REYNOLDS TOBACCO CO.,
RJR NABISCO, INC.,
LIGGETT GROUP, INC.,
LIGGETT & MYERS, INC.,
THE BROOKE GROUP, LIMITED
AMERICAN BRANDS, INC.,
THE AMERICAN TOBACCO CO.,
LOEWS CORP.,
LORELLARD CORP.,
THE COUNCIL FOR TOBACCO RESEARCH-U.S.A. INC.,
TOBACCO INSTITUTE RESEARCH COMMITTEE
THE TOBACCO INSTITUTE, INC.,
HILL & KNOWLTON, INC.,
LAUREL CIGAR & TOBACCO CO., and
DOES A-Z

DEFENDANTS

SUMMONS

THE STATE OF MISSISSIPPI

TO: Managing or General Agent for
BAT INDUSTRIES PLC
Windsor Office
50 Victoria Street
London, England

NOTICE TO DEFENDANT

THE COMPLAINT ATTACHED TO THIS SUMMONS IS IMPORTANT AND YOU
MUST TAKE IMMEDIATE ACTION TO PROTECT YOUR RIGHTS.

You are required to mail or hand-deliver a copy of a written response to the
Complaint to Cynthia Langston Lott, the attorney for the Plaintiffs, whose address is 418

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24. May. 1994 15:53

B. A. T INDUSTRIES LEGAL DEPT

Ex. 1543 P. 3/7

East Amite Street, P. O. Box 23307, Jackson, Mississippi 39225. Your response must be mailed or delivered within thirty (30) days from the date of delivery of this summons and complaint or a judgment by default will be entered against you for the money or other things demanded in the complaint.

You must also file the original of your response with the Clerk of this Court within a reasonable time afterward.

Issued under my hand and the seal of this Court, this the 19 day of May 1994.

WAYNE MYRICK, CIRCUIT CLERK
JONES COUNTY, MISSISSIPPI

By: Eric Bell D.C.

Attorneys for Plaintiff:

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East Amite Street, P. O. Box 23307, Jackson, Mississippi 39225. Your response must be mailed or delivered within thirty (30) days from the date of delivery of this summons and complaint or a judgment by default will be entered against you for the money or other things demanded in the complaint.

You must also file the original of your response with the Clerk of this Court within a reasonable time afterward.

Issued under my hand and the seal of this Court, this the 19 day of May 1994.

WAYNE MYRICK, CIRCUIT CLERK
JONES COUNTY, MISSISSIPPI

By: Joni Bullard D.C.

Attorneys for Plaintiff:

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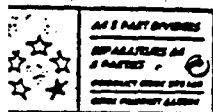
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Jackson, MS 39208

2244 DOM

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RAYE N. BLANCHARD, Individually	§	IN THE DISTRICT COURT OF
and as the Representative of the	§	
ESTATE OF THOMAS H. BLANCHARD,	§	
Deceased; TAMARA REED;	§	
ROGERS TERRY CALLAHAN;	§	
EMMA L. CALLAHAN; JEFFREY	§	
ALAN CAMPBELL; ROY L.	§	
CHOICE; IRMA J. CHOICE;	§	
LEON GALLOWAY; MARIE JETTON,	§	
Individually and as the	§	
Representative of the Estate	§	
of VERNON JETTON, Deceased;	§	
VERNA SMITH; PATRICIA KASTRIN,	§	
Individually and as the	§	
Representative of the Estate	§	
of GEORGE C. KASTRIN, Deceased;	§	
PAMELA KASTRIN STEPHENS;	§	
CECIL EDWARD LIVINGSTON,	§	
by his Next Friend, MARY	§	
WALKER; and LLOYD D. STEWART;	§	
	§	
V.	§	GALVESTON COUNTY, TEXAS
	§	
BROWN AND WILLIAMSON TOBACCO	§	
CORPORATION; FOOD KING OF	§	
TEXAS CORPORATION;	§	
GROCER'S SUPPLY INSTITUTIONAL-	§	
CONVENIENCE, INC.; H.E.B., INC.;	§	
H. E. BUTT GROCERY COMPANY;	§	
LIGGETT GROUP, INC., formerly known	§	
as LIGGETT AND MYERS TOBACCO	§	
COMPANY; LORILLARD TOBACCO	§	
COMPANY; MAVERICK MARKETS,	§	
INC.; PHILIP MORRIS, INC.;	§	
R. J. REYNOLDS TOBACCO	§	
COMPANY; THE AMERICAN TOBACCO	§	
COMPANY; THE COUNCIL OF	§	
TOBACCO RESEARCH U.S.A.;	§	
INC., THE GROCER'S SUPPLY CO.	§	
INC.; THE KROGER COMPANY; and THE	§	
TOBACCO INSTITUTE, INC.	§	212TH JUDICIAL DISTRICT

PLAINTIFFS' FIRST AMENDED PETITION

TO THE HONORABLE JUDGE OF SAID COURT:

COME NOW Plaintiffs, RAYE N. BLANCHARD, Individually and as the Representative of the Estate of THOMAS H. BLANCHARD, Deceased; TAMARA REED; ROGERS TERRY CALLAHAN;

C:\COURT\92\920735\1\1\TA00PET.J27

EMMA L. CALLAHAN; JEFFREY ALAN CAMPBELL; LEON GALLOWAY; MARIE JETTON, Individually and as the Representative of the Estate of Vernon Jetton, Deceased; VERNA SMITH; PATRICIA KASTRIN, Individually and as the Representative of the Estate of George C. Kastrin, Deceased; PAMELA KASTRIN STEPHENS; CECIL EDWARD LIVINGSTON by, his Next Friend, MARY WALKER; and LLOYD D. STEWART, complaining of Defendants, BROWN AND WILLIAMSON TOBACCO CORPORATION; FOOD KING OF TEXAS CORPORATION; GROCER'S SUPPLY INSTITUTIONAL-CONVENIENCE, INC.; H.E.B., INC.; H. E. BUTT GROCERY COMPANY; LIGGETT GROUP, INC.; formerly known as LIGGETT AND MYERS TOBACCO COMPANY; LORILLARD TOBACCO COMPANY; MAVERICK MARKETS, INC.; PHILIP MORRIS, INC.; R. J. REYNOLDS TOBACCO COMPANY; THE AMERICAN TOBACCO COMPANY; THE COUNCIL FOR TOBACCO RESEARCH U.S.A., INC.; THE GROCER'S SUPPLY CO.; THE KROGER COMPANY; and THE TOBACCO INSTITUTE, INC. (hereinafter collectively referred to as "Defendants"), and for cause of action Plaintiffs would respectfully show the Court the following:

I.
VENUE IS PROPER IN GALVESTON COUNTY, TEXAS

Plaintiff, Raye N. Blanchard, is the widow of Decedent, Thomas Blanchard ("Decedent"), and is a resident and citizen of Galveston County, Texas. As shown below, all or a part of the cause of action occurred in Galveston County, Texas. Venue is therefore appropriate in Galveston County, Texas, pursuant to the provisions of sections 15.001 *et. seq.* of the Texas Civil Practice and Remedies Code.

II.
SERVICE OF PROCESS ON DEFENDANTS

Defendant Brown and Williamson Tobacco Corporation is a foreign corporation and can be served with citation by serving its registered agent for service of process, CT Corporation System, 350 North St. Paul Street, Dallas, Texas 75201.

Defendant Food King Corporation is a Texas corporation and can be served with citation by serving its registered agent for service of process, Carol Vykukal, 3914 Highway 3, Dickinson, Texas 77539.

Defendant Grocer's Supply Institutional-Convenience, Inc. is a Texas corporation and may be served with citation by serving its registered agent for service of process, Max S. Levit, 3131 East Holcombe Boulevard, Houston, Texas 77021.

Defendant H.E.B., Inc. is a Texas corporation and can be served with citation by serving its registered agent for service of process, Wesley D. Nelson, 646 South Main Avenue, Box 9999, San Antonio, Texas 78204.

Defendant H. E. Butt Grocery Company is a Texas corporation and can be served with citation by serving its registered agent for service of process, Wesley D. Nelson, 646 South Main Avenue, Box 9999, San Antonio, Texas 78204.

Defendant Liggett Group, Inc., formerly known as Liggett and Myers Tobacco Company, is a foreign corporation and can be served with citation by serving its registered agent for service of process, C. C. Small, Jr., 100 Congress, Suite 1100, Austin, Texas 78701.

Defendant Lorillard Tobacco Company is a foreign corporation and can be served with citation by serving its registered agent for service of process, United States Corporation Company, 400 North St. Paul Street, Dallas, Texas 75201.

Defendant Maverick Markets, Inc. is a Texas corporation and can be served with citation by serving its registered agent for service of process, Erich Wendl, 5440 Old Brownsville Road, Corpus Christi, Texas 78417.

Defendant Philip Morris, Inc. is a foreign corporation and can be served with citation by serving its registered agent for service of process, CT Corporation System, 350 North St. Paul Street, Dallas, Texas 75201.

Defendant The Tobacco Institute, Inc. is a foreign corporation and can be served with citation by serving its registered agent for service of process, CT Corporation System, 350 North St. Paul, Dallas, Texas 75201.

III
CLAIMS OF PLAINTIFFS, RAYE N. BLANCHARD, TAMARA REED,
AND DECEDENT THOMAS H. BLANCHARD, DECEASED

Raye N. Blanchard is the widow of Decedent, Thomas H. Blanchard. Tamara Reed is the daughter of Decedent Blanchard. Decedent Thomas H. Blanchard began smoking in or about 1926 and was exposed to Defendants' tobacco products for a period of more than 50 years. These tobacco products included, without limitation, the brand name cigarettes, Benson & Hedges, Winston, and Salem, which are produced by Defendants. Decedent, as well as all Plaintiffs in this suit who smoked, became addicted to the use of Defendants' products. Decedent was unable to stop his use of said tobacco products when the harmful effects of smoking became known to him. Decedent was diagnosed with emphysema and lung cancer from which he ultimately died.

Plaintiffs assert that Decedent's emphysema and death were proximately and directly caused by his use of Benson & Hedges, Winston, and Salem cigarettes. Plaintiff Raye N. Blanchard has also suffered illness and disease from cigarette use, and was a user of Winston cigarettes for about ten years. Both Plaintiffs Raye N. Blanchard and Tamara Reed have suffered illness and disease as a result of exposure to secondhand cigarette smoke from cigarettes smoked by Thomas H. Blanchard and Raye N. Blanchard.

Winston and Salem cigarettes are manufactured by Defendant R. J. Reynolds Tobacco Company. Benson and Hedges cigarettes are manufactured by Defendant Philip Morris, Inc.

Defendant the Kroger Company (hereinafter referred to as "Kroger"), and Food King Corporation (hereinafter referred to as "Food King") marketed and sold the cigarettes complained of in this case to Raye N. Blanchard and Thomas H. Blanchard.

IV.

CLAIMS OF PLAINTIFFS ROGERS TERRY CALLAHAN
AND EMMA L. CALLAHAN

Emma L. Callahan is the wife of Rogers Terry Callahan. Rogers Terry Callahan used unfiltered Camel cigarettes from approximately 1949 until 1953, and unfiltered Pall Mall cigarettes from approximately 1953 until 1971. As a result of use of these products Mr. Callahan developed throat cancer and cancer of the larynx. Camel cigarettes are manufactured by Defendant R.J. Reynolds Tobacco Company. Pall Mall cigarettes are manufactured by Defendant The American Tobacco Company.

V.

CLAIMS OF PLAINTIFF JEFFREY ALAN CAMPBELL

Plaintiff Jeffrey Alan Campbell has smoked Marlboro cigarettes, Kool 100's, Kent 100's, and Kent III 100's. As a result of smoking these products, Plaintiff Jeffrey A. Campbell has been diagnosed with Buerger's disease and has required multiple amputations as a result of this disease.

Marlboro cigarettes are manufactured by Defendant Philip Morris, Inc. Kool 100's are manufactured by Defendant Liggett Group, Inc. Kent 100's and Kent III 100's are manufactured by Defendant Lorillard Tobacco Company.

VI.

CLAIMS OF PLAINTIFFS ROY L. CHOICE
AND IRMA CHOICE

Irma J. Choice is the wife of Roy L. Choice. Plaintiff Roy L. Choice smoked Camel, Pall Mall, Winston, and Viceroy cigarettes. He has been diagnosed with numerous life-threatening diseases which have been caused by his use of the above products. Camel and Winston cigarettes are manufactured by Defendant R.J. Reynolds Tobacco Company. Pall Mall cigarettes are manufactured by Defendant The American Tobacco Company. Viceroy Cigarettes are manufactured by Defendant Brown and Williamson Tobacco Corporation.

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VII.

CLAIMS OF PLAINTIFF LEON GALLOWAY

Leon Galloway has used Lucky Strike and Pall Mall cigarettes for approximately 40 years. As a result of using these cigarettes he has developed throat cancer. Pall Mall and Lucky Strike cigarettes are manufactured by Defendant Brown and Williamson Tobacco Company.

VIII.

CLAIMS OF PLAINTIFFS MARIE JETTON, Individually and
as Representative of the Estate of
VERNON JETTON, Deceased, and VERNA SMITH

Marie Jetton is the widow of Vernon Jetton, Deceased. Verna Smith is the daughter of Vernon Jetton, Deceased.

Decedent Vernon Jetton smoked cigarettes, including Camels, Salem, and Winston, for approximately 60 years. As a result of his cigarette use he became addicted to tobacco and smoked 2 to 4 packs of cigarettes a day. He died of emphysema and heart disease resulting from his cigarette smoking.

Camel, Salem and Winston cigarettes are all manufactured by Defendant R.J. Reynolds Tobacco Company.

IX.

CLAIMS OF PLAINTIFFS PATRICIA KASTRIN, Individually and as
the Representative of the Estate of GEORGE C. KASTRIN,
Deceased, and PAMELA KASTRIN STEPHENS

Patricia Kastrin is the widow of George C. Kastrin, Deceased. Pamela Kastrin Stephens is the daughter of George C. Kastrin, deceased.

Decedent George Kastrin began smoking at age 13 and smoked for approximately 50 years. He smoked 3 or more packs a day and used Camels, Winston, and Kent cigarettes. As a result of his tobacco addiction he died of heart and lung diseases.

Pamela Stephens, a non-smoker, has and continues to suffer lung and respiratory diseases as a result of her involuntary exposure to secondhand smoke from her father's use of cigarettes. Secondhand smoke has now been classified as a Class A carcinogen by the Environmental Protection Agency of the United States Government.

Camel and Winston cigarettes are manufactured by Defendant R.J. Reynolds Tobacco Company. Kent cigarettes are manufactured by Defendant Lorillard Tobacco Company.

X.

CLAIMS OF PLAINTIFF CECIL EDWARD LIVINGSTON

Plaintiff Cecil Edward Livingston began smoking cigarettes including, but not limited to, Camel cigarettes in or about 1947. Camel cigarettes are manufactured by Defendant R. J. Reynolds Tobacco Company. Mr. Livingston has been diagnosed as having lung cancer, chronic bronchitis, emphysema, heart disease, and chronic obstructive pulmonary disease as a result of smoking cigarettes.

XI.

CLAIMS OF PLAINTIFF LLOYD D. STEWART

Plaintiff Lloyd D. Stewart began smoking cigarettes in or about 1946. The brands he smoked included, without limitation, Pall Mall, Camel, Chesterfield, Kite, Prince Albert, Bull Durham, and Pyramid cigarettes. As a result of smoking these cigarettes, Plaintiff Lloyd D. Stewart has suffered lung cancer, emphysema, and chronic bronchitis. Plaintiff purchased his cigarettes, among other places, at stores owned by Defendant H.E.B., Inc., H. E. Butz Grocery Company, and Defendant Maverick Markets, Inc.

Pyramid cigarettes are manufactured by Defendant Liggett Group, Inc. Chesterfield cigarettes are manufactured by Defendant Liggett Group, Inc. Pall Mall cigarettes are manufactured by Defendant The American Tobacco Company, Inc. Camel cigarettes are manufactured by Defendant R. J. Reynolds Tobacco Company.

XII.

PERMISSIVE JOINDER

Plaintiffs hereby invoke the provisions of Rule 40 of the Texas Rules of Civil Procedure regarding permissive joinder of parties. Plaintiffs would show that their claims assert rights to joint relief. The claims made by Plaintiffs against Defendants also clearly arise out of the same transaction, occurrence, or series of transactions or occurrences. Plaintiffs' claims involve numerous questions of law and fact common to all Plaintiffs and to all Defendants. By way of example only, and not by way of limitation, all of the above statements accurately describe the Plaintiffs' claims against all Defendants under their conspiracy, fraud, and misrepresentation causes of actions. See, e.g., *I.D. Rogers v. R.J. Reynolds Tobacco Company*, 761 S.W.2d 788 (Tex. App. - Beaumont 1988, writ denied).

XIII.

WHOLESALE SUPPLIER DEFENDANTS

Plaintiffs assert, based on information and belief, that Defendants Grocer's Supply Institutional-Convenience, Inc., and The Grocer's Supply Company furnished the tobacco products complained of herein to the retail stores where Plaintiffs purchased them. As a member of the chain of distribution of these products, both the wholesaler and retailer Defendants are liable under all theories pled herein against all Defendants manufacturing the cigarettes involved.

XIV.

NO GOOD FAITH BASIS
FOR REMOVAL TO FEDERAL COURT

Plaintiffs herein do not assert, either expressly or impliedly, any claims arising under any federal statute, any federal regulation, or any provision of federal common law. Rather, Plaintiffs do hereby disavow and repudiate any such claims. Consequently there is no basis for any removal of this case to federal court under an assertion of federal jurisdiction on the basis of a "federal question" under 28 U.S.C. § 1332.

Furthermore, no assertion by any party of federal diversity jurisdiction would be proper in that Plaintiffs are all residents of the State of Texas, as are Defendants Food King, H.E.B., Inc., H.E. Butt Grocery Company, Maverick Markets, Inc., Grocer's Supply Institutional-Convenience, Inc., and The Grocers Supply Company. Consequently, "complete diversity" does not exist as is required for the assertion of federal diversity jurisdiction under the cases of *Carden v. Arkoma Associates*, 494 U.S. 1185, 187 (1990) and *Strawbridge v. Curtiss*, 7 U.S. 267 (1806). There is no basis, therefore, for removing this case to federal court on the basis of "diversity jurisdiction" under 28 U.S.C. § 1332.

Furthermore, Plaintiffs assert no state law claims which have been held to be preempted in the recent opinion of the United States Supreme Court in *Cipollone v. Liggett Group, Inc. et al.*, ___ U.S. ___, No. 90-1038 (June 24, 1992), specifically any "claims based solely on a failure to warn and the neutralization of federally mandated warnings to the extent that those claims rely on omissions or inclusions in [Defendants'] advertising or promotions" arising contemporaneously with or subsequent to the effective date of the Public Health Cigarette Smoking Act of 1969. *Cipollone, supra* at pp. 24-15.

Any attempt to remove this case to federal court, therefore, would be in bad faith, and Plaintiffs would seek sanctions pursuant to Rule 11 of the Federal Rules of Civil Procedure upon any such removal.

XV.

WRONGFUL DEATH/SURVIVAL ACTION

Plaintiffs Raye N. Blanchard, Tamara Reed, Marie Jenson, Verna Smith, Patricia Kastin, and Pamela Kastin Stephens bring their actions for all damages that they are entitled to recover by reason of their respective Decedents' illnesses and deaths, under the Texas Survival Act, Tex. Civ. Prac. & Rem. Code § 71.021; and the Texas Wrongful Death Act, Tex. Civ. Prac. & Rem. Code § 71.001 *et. seq.*

XVI
STRICT LIABILITY, PRODUCTS
LIABILITY, AND BREACH OF WARRANTY

Plaintiffs would show that this action is maintained pursuant to, *inter alia*, various legal theories commonly referred to as products liability as well as strict tort liability as set forth in section 4.02A of the Restatement of Torts (2d). At all times material hereto, Defendants were engaged in the business of designing, marketing, manufacturing, selling, and/or distributing tobacco products throughout the nation, including, without limitation, the State of Texas. These tobacco products included, without limitation, Benson & Hedges, Bull Durham, Camels, Chesterfield, Kent, Kent 100's, Kite, Kool, Kool 100's, Lucky Strike, Marlboro, Pall Mall, Prince Albert, Pyramid, Salem, Viceroy, and Winston cigarettes. Said products were expected to reach and, in fact, did reach Plaintiffs and Plaintiffs' Decedent without substantial change in their condition.

Said tobacco products were defectively designed, defectively marketed, and defectively manufactured and were therefore in a defective condition and unreasonably dangerous when designed, manufactured, marketed, advertised, and sold by Defendants. As set forth above, some of the Plaintiffs were never at any time users and consumers of these tobacco products, but were exposed to the secondhand smoke and chemicals in these products when their parents smoked them. The defective and unreasonably dangerous condition of these products as described above were the proximate and/or producing causes of the illnesses, injuries, and deaths complained of herein.

Plaintiffs further assert that Defendants, as manufacturers, distributors, and/or sellers of said tobacco products, owed a strict duty to Plaintiffs and Decedent not to harm them through the use of products sold and placed in the market in a defective, unreasonably dangerous condition, and not safe for their intended use. In this regard, Plaintiffs would show that the Defendants acted or failed to act, without limitation but only by way of illustration, as follows:

2. Defendants failed to warn the users/consumers of their products of the known or reasonably foreseeable danger of contracting diseases and dying from the use of tobacco products manufactured, distributed, and sold by Defendants;

- b. Defendants knew, or in the exercise of reasonable care should have known, that their products were in a defective condition or unreasonably dangerous and that the use of same would cause cancer and other debilitating diseases;
- c. Defendants defectively manufactured their tobacco products by, *inter alia*, dusting the tobacco in their cigarettes with toxic pesticides and chemicals, including but not limited to DDVP;
- d. Defendants failed to adequately test their tobacco products for adverse health consequences to users of the same;
- e. Defendants marketed defectively designed tobacco products by marketing a product which was unreasonably dangerous as designed, taking into consideration the utility of the product and the risk involved in its use. Defendants knew or should have known how to make a safer product but failed to make and market such a product;
- f. Defendants knew their tobacco products would be used or consumed in the manner that they were used or consumed by Plaintiffs and their Decedent, and therefore such use was reasonably foreseeable;
- g. Defendants failed and omitted to provide their customers, including Plaintiffs and Decedent, with the knowledge that the use of Defendants' tobacco products would and could cause cancer or death, until after such time as Decedent was addicted to the use of Defendants' tobacco products and unable to make a voluntary decision not to use the same; and
- h. Defendants breached their warranties, express and/or implied, including implied warranties arising under Chapter 2 of the Texas Business and Commerce Code, that use of their tobacco products would not cause cancer, death, or otherwise be harmful to users and consumers of their tobacco products.

XVII.
NEGLIGENCE AND GROSS NEGLIGENCE

A. Failure to Warn

Plaintiffs assert that Defendants are liable for the injuries and the resulting damages suffered by Plaintiffs due to both the negligence and gross negligence of Defendants. All claims stated in this Petition for failure to warn are only asserted subject to the provisions of paragraph XIV, *supra*, and are asserted expressly subject to the limitations placed upon such claims in the United States Supreme Court opinion in *Cipollone*, and Plaintiffs make no claim based solely on a failure to warn and the neutralization of federally mandated warnings to the extent that those claims rely on omissions or inclusions in the

[Defendants'] advertising or promotions' arising contemporaneously with or subsequent to the effective date of the Public Health Cigarette Smoking Act of 1969. *Cipollone, supra* at pp. 24-25.

Subject to these limitations, Plaintiffs allege that Defendants, through their various agents, employees, and representatives, were negligent in failing to properly warn Decedent, Plaintiffs, and others so situated, of the adverse health effects and addictive propensities caused by Defendants' tobacco products. Defendants sold, promoted, and advertised their products without any adequate warning.

Such failure to warn of safety and health hazards breached the duty owed by Defendants to Plaintiffs and Decedent. Warnings were necessary to make Defendants' tobacco products reasonably safe, suitable, and fit for their intended use. Defendants negligently failed to provide such warnings. Such negligence was a proximate cause of Decedent's injuries and death and Plaintiffs's resulting damages. The above and foregoing acts represent not only negligent conduct, but also represent a conscious and reckless disregard and indifference to the rights, welfare, health, and safety of the Decedent and Plaintiffs such that Defendants should be subjected, jointly and severally, to punitive damages, as provided in § 41.003 of the Texas Civil Practice and Remedies Code. Furthermore, such conduct was carried out with such a flagrant disregard for the rights of others and with actual awareness on the part of the Defendants that their acts would, in reasonable probability, result in human death, great bodily harm, or property damage that Defendants' conduct constitutes gross negligence, malice, and fraud such that Defendants are not entitled to any limitation of punitive damages which might be awarded against them, all as provided in sections 41.008 and 41.001(6)(B) of the Texas Civil Practice and Remedies Code.

B. Breach of Duty to Test and Conduct Research

Plaintiffs would show that Defendants were both negligent and grossly negligent in not conducting toxicological and other health testing and research of its products to determine the harmful effects of cigarette smoking on human beings and to aid in formulating design alternatives which would make Defendants' tobacco products safer, not addicting to the user, and prevent harm to others in the form of

"passive" or "secondhand" smoke. Such breaches of such duties were the proximate and producing cause of Decedent's injuries and death and Plaintiffs' illnesses, diseases, and damages. Defendants consciously and recklessly failed to act as described above in disregard and indifference of the rights, welfare, health, and safety of the Plaintiffs.

C. Negligence: *Res Ipsa Loquitur*

Plaintiffs would show that at all material times hereto, over the period of years in which Decedent and Plaintiffs used cigarettes manufactured, distributed, and sold by Defendants, that the design, marketing, and manufacture of said tobacco products was under the exclusive control of Defendants, by and through their agents, servants and employees. Had Defendants not breached the duties owed to Plaintiffs and Decedent as set forth above, Decedent and Plaintiffs would not have been injured and damaged as herein set forth. Consequently, Plaintiffs hereby assert entitlement to recover from Defendants under the doctrine of *res ipsa loquitur*.

XVIII INTENTIONAL FRAUD AND MISREPRESENTATION

Subject to the express limitations stated in paragraphs XIV and XVII, *supra*, Plaintiffs would further show that Defendants conspired to and did, in fact, knowingly, intentionally and fraudulently misrepresent and conceal material facts when advertising and promoting their tobacco products. Defendants possessed, but ignored, concealed, and failed to act upon medical and scientific data indicating that the use of cigarettes was hazardous to the health of the user and those in close proximity to the user. Additionally, Defendants had a duty not to deceive as well as a duty to disclose any and all material facts to Plaintiffs and Decedent through channels of communication other than advertising or promotions. Accordingly, Defendants' deceptive misrepresentations and Defendants' failures to disclose material information constitute fraud and negligent misrepresentation.

Plaintiffs further assert that each and every one of the misrepresentations and concealments set forth in the preceding paragraphs concern material facts in that Decedent and Plaintiffs would not have

purchased or used Defendants' tobacco products if they had known about the falsity or negligence of Defendants' misrepresentations or if they had known the information not disclosed by Defendants.

Defendants had superior knowledge concerning the adverse health effects of smoking and tobacco products. As cigarette manufacturers, they are held to the standard of being experts in these subjects. Plaintiffs and their respective Decedents relied upon Defendants' superior knowledge to their detriment. As a direct result of their reliance upon Defendants' misrepresentations and fraudulent concealment or omission of material facts, the Plaintiffs and their respective Decedents developed the diseases stated above. Plaintiffs have suffered illness and disease as set forth above as a result of Defendants' wrongful acts and omissions. Defendants knew that the representations and omissions described above were false or misleading at the time they were made. They were made or concealed either intentionally or with such gross negligence as to subject the Defendants, jointly and severally, to exemplary damages.

XIX
VIOLATIONS OF THE TEXAS
DECEPTIVE TRADE PRACTICES-CONSUMER PROTECTION ACT

Plaintiffs would show that Defendants' knowing, intentional, and fraudulent misrepresentations and concealments of material facts, as set forth in the preceding paragraphs, constitute false, misleading, and deceptive acts or trade practices which are in violation of Tex. Bus. & Com. Code § 17.41 and following (hereinafter referred to as "DTPA"). Pursuant to Tex. Bus. & Com. Code § 17.505(b), Plaintiffs are not required to give prior written notice to Defendants advising of Plaintiffs' specific complaints and the amount of actual damages because of the need to file suit prior to the expiration of the statute of limitations.

Plaintiffs would show that the conduct of the Defendants as set forth in the preceding paragraph was committed knowingly; that Defendants were aware of the falsity, deception and unfairness of their conduct of which Plaintiffs complain; and Defendants were aware of their breach of the warranties described above. Such wrongful conduct was the producing cause of the decedents' deaths and Plaintiffs'

illnesses and injuries. Accordingly, Defendants should be held liable for additional punitive and other damages, all as provided by the DTPA.

XX. CONSPIRACY

Subject to the express limitations stated in paragraphs XIV and XVII, *supra*, Plaintiffs would show that Defendants entered a civil conspiracy and concert of action, the purpose of which was to suppress and conceal certain scientific and medical information relating to the dangers of cigarette smoking and resulting disease. Through their conspiracy and concerted actions, Defendants were able to take and project a unified and uniform position on the issue of cigarette smoking and its relationship to disease. Such conspiracy and concerted action also allowed Defendants to take a solid, frontal, but false position that it had not been established in reasonable medical probability that cigarette smoking could cause disease, cancer, and even death. As a result of Defendants' concerted actions, Defendants failed to issue cigarette and tobacco product warnings, which failure caused Decedent's death and Plaintiffs' damages. Defendants' conspiracy and concert of action was a proximate and a producing cause of Decedent's injuries and death and Plaintiffs' resulting damages.

To carry out the purposes of their conspiracy and concerted action, Defendants formed the Council for Tobacco Research U.S.A., Inc., and the Tobacco Institute, Inc. The Council for Tobacco Research and the Tobacco Institute have carried out the purposes of the conspiracy and concert of action since the years of 1954 and 1958. If not for the conspiracy and the concert of actions, the Decedent and Plaintiffs would have never begun or would have quit smoking and, thereby, would have avoided contracting diseases complained of herein.

XXI. ADDITIONAL LIABILITY THEORIES

Subject to the express limitations stated in paragraphs XIV and XVII, *supra*, Plaintiffs would show that at all times material to this cause of action Defendants were fully aware or should have been fully aware of the dangers involved in cigarette smoking and Defendants knowingly withheld such

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information from Decedent, Plaintiffs and the general public. Defendants actually or constructively knew, or should have known, that their tobacco products had the potential for causing cancer and/or other chronic diseases that could result in death or serious bodily disease.

Accordingly, Plaintiffs are entitled to recover against Defendants, jointly and severally, under additional legal theories, including nuisance, trespass, assault and battery, toxic trespass, increased risk of cancer, and negligence per se. Plaintiffs would also show that they have a fear of developing cancer or other disease and fear of premature death as a result of their exposure to Defendants' products.

XXII.
TOXIC TORTS

Subject to the express limitations previously stated in paragraphs XIV and XVII, *supra*, Plaintiffs would show that the Defendants' wrongs complained of constitute "toxic torts" as that term is defined in § 33.013 of the Texas Civil Practice and Remedies Code. In that regard, Plaintiffs would show that the smoke from and other constituents of Defendants' products contain "hazardous chemicals, hazardous wastes, hazardous hydrocarbons, similarly harmful organic or mineral substances, hazardous radiation sources, and other similarly harmful substances" to which Plaintiffs and Decedent were exposed. Such exposures were the producing and proximate causes of all the injuries complained of herein. Plaintiffs are therefore entitled to all rights and remedies provided to "toxic tort" plaintiffs by the Texas Civil Practice and Remedies Code, including but not limited to the provisions of § 33.013 thereof.

XXIII.
DAMAGES

Plaintiffs would show that as a direct and proximate result of the aforesaid acts and/or omissions, Plaintiffs and their respective Decedents (if any) were permanently and severely injured, developed emphysema, heart disease, lung cancer, Buerger's disease and the other cancers and diseases referred to above. Plaintiffs therefore seek damages on behalf of their respective Decedents and themselves for,

without limitation, past and future pain and suffering, past and future physical impairment, and past and future medical expenses.

Further, by reason of the death of the Decedents, Plaintiffs have been denied the Decedents' care, maintenance and support, services, advice, counsel, love, affection, companionship, and consortium that they would have otherwise received. Further, Plaintiffs have suffered mental distress and anguish by witnessing their respective Decedent's suffering and slow death by cancer and other diseases which were caused by the Defendants' products.

In addition to the general damages sustained, expenses for medical care and funeral expenses have been incurred. For these damages, Plaintiffs should be compensated in an amount which will be equal, at least, to the expenses occurred.

XXXIV.

PUNITIVE AND/OR EXEMPLARY DAMAGES

Plaintiffs would show that Defendants committed intentional torts, toxic torts, and acted with such fraud, gross negligence, and malice as those terms are defined in § 41.001 of the Texas Civil Practice and Remedies Code such that Defendants should be held jointly and severally liable for exemplary damages in an amount subject solely to the jury's discretion and not limited by § 41.007 of the Texas Civil Practice and Remedies Code. Said exemplary damages should be granted because Defendants knowingly failed to make known to their consumers the risks involved in the use of their products. Defendants relied on the addictive nature of Defendants' tobacco products to cause the Decedents and the Plaintiffs to continue to use the tobacco products even after such time as they may have been aware that there was a severe health risk associated with the use of such products.

Defendants have demonstrated a willingness to sacrifice the lives of innocent human beings for monetary profit, yet made no effort to communicate the known dangers and the addictive nature of their tobacco products in the market place. Defendants' conduct shows a conscious disregard of the health,

welfare, and safety of others and has resulted in untold human suffering, the needless sacrifice of lives, and great economic loss in the form of lost wages and health care costs.

The reckless and morally reprehensible conduct of Defendants calls for punitive damages in a sum sufficient to make Defendants appreciate the gravity of their shortcomings and bad faith dealings with their consumers, family members of those consumers, and all individuals exposed to passive cigarette smoke from consumers' use of Defendants' tobacco products. Defendants should suffer punitive damages in a sum sufficient to motivate Defendants, and other entities likewise situated, to be mindful that the community is unwilling to accept such a human sacrifice of their loved ones and neighbors.

Plaintiffs believe it will take punitive damages in a very substantial sum to effectively convey this overdue message to the corporate management of Defendants, who have it within their power to either continue or to curtail their participation in this tragedy. Accordingly, Plaintiffs pray for judgment against such Defendants for a just and reasonable sum. Plaintiffs pray for both actual and punitive damages in each and every recoverable form, as set forth in the common law and statutory law of the State of Texas.

PRAYER

Plaintiffs pray that Defendants be cited to appear and answer herein as the law directs, and that upon final hearing hereof, Plaintiffs recover of and from all of the Defendants named above, jointly and severally, the following relief:

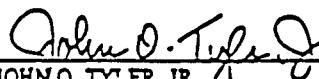
- (1) All actual, special, and punitive damages, as alleged, in an amount in excess of the minimum jurisdictional requirements of this Court and in such an amount as the evidence may show proper at the time of trial;
- (2) Costs of court;
- (3) All past, present, and future medical and funeral expenses;
- (4) Prejudgment interest at the highest legally permissible rate (including such interest as is recoverable under the Supreme Court decision of *Carnar v. Quality Control Parking*, 696 S.W.2d 549 (Tex. 1985));
- (5) Post-judgment interest at the highest legally permissible rate until paid; and
- (6) Attorneys' fees.

Further, Plaintiffs request all such other and further relief, both special and general, at law and in equity, to which Plaintiffs may be justly entitled.

Respectfully submitted,

TYLER & DAS, P.C.

By:


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ATTORNEYS FOR PLAINTIFFS.
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TAMARA REED; ROGERS TERRY CALLAHAN;
EMMA L. CALLAHAN; JEFFREY ALAN
CAMPBELL; ROY L. CHOICE; IRMA L. CHOICE;
LEON GALLOWAY; MARIE JETTON, Individually
and as the Representative of the Estate of Vernon Jetton,
Deceased; VERNA SMITH; PATRICIA KASTRIN,
Individually and as the Representative of the Estate of
GEORGE KASTRIN, Deceased; PAMELA KASTRIN
STEPHENS; CECIL EDWARD LIVINGSTON, by his
Next friend, MARY WALKER; and LLOYD D.
STEWART;

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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

MRS. SAMUEL E. ALLGOOD, §
INDIVIDUALLY AND AS §
INDEPENDENT EXECUTRIX OF §
THE ESTATE OF SAMUEL E. §
ALLGOOD, MARCUS ALLGOOD, §
AND MALCOLM ALLGOOD. §
Plaintiffs §

vs.

C. A. No. H-91-0158

R. J. REYNOLDS TOBACCO §
COMPANY, THE AMERICAN §
TOBACCO COMPANY, THE §
TOBACCO INSTITUTE, INC. AND §
THE COUNCIL FOR TOBACCO §
RESEARCH-U.S.A., INC. §
Defendants §

PLAINTIFFS' THIRD AMENDED COMPLAINT

1. Jurisdiction over this case lies in this Court under 28 U.S.C §1332. The amount in controversy exceeds the sum of \$50,000.00, exclusive of interest and costs, and Plaintiffs are citizens of Texas and Defendants are citizens of states other than Texas. Each defendant has appeared and answered. By use of each defendant's name in this complaint is meant that defendant and each and every predecessor entity for whose liabilities that defendant is responsible under law.

2. Samuel Edward Allgood ("Sam Allgood") was born December 1, 1929. From an early age Sam Allgood was continually exposed to, and he continually saw, tobacco industry advertising, including that by defendant The American Tobacco Company ("American Tobacco") for the Bull Durham cigarette tobacco it manufactured, and that by defendant R. J. Reynolds Tobacco Company ("R. J. Reynolds") for the Camel cigarettes it manufactured. This advertising encouraged young people to smoke cigarettes, and

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represented cigarette smoking to be enjoyable, healthy, and socially attractive. At no time before 1966 did any tobacco advertising warn of the severe health hazards or the powerfully addictive nature of cigarette smoking. Sam Allgood began "slipping" cigarettes made of American Tobacco's Bull Durham tobacco when he was about six years old. At some time before his twelfth birthday, Sam Allgood began smoking Camel cigarettes. When Sam Allgood was seventeen, he left home and joined the U.S. Navy. While in the Navy, before 1956, he switched from Camels to the longer Pall Malls, manufactured by American Tobacco. Sam Allgood had seen American Tobacco's advertising for Pall Malls, which also represented cigarette smoking to be healthy, enjoyable, and socially attractive. On December 1, 1956, Sam Allgood married Bonnie Reeve, the plaintiff Mrs. Samuel E. Allgood. From before this time and from this time on, Sam Allgood smoked about 1-1/2 packs of cigarettes per day. By this time, Sam Allgood was well addicted to the nicotine which was readily absorbed from the tobacco smoke in his lungs every time he drew on a cigarette. Although Bonnie did not like Sam Allgood's smoking, she decided she couldn't change it. Still, from time to time Bonnie suggested to Sam Allgood that he stop smoking, to no avail. Before February 16, 1987, Sam Allgood never believed that his cigarette smoking had or would cause any medical problem in him. This belief of Sam Allgood's was caused by his powerful addiction to nicotine; the continuing efforts of the defendants The Tobacco Institute, Inc. and the Council for Tobacco Research-U.S.A., Inc. to attack and minimize the effect of the ever-growing knowledge of the medical truth about tobacco use, as more fully pled in paragraph 6; the tobacco industry's advertising which continued to falsely represent smoking to be healthy, socially attractive, and enjoyable; and his belief that smoking had not caused him any problem in the past. As of 1970, Sam Allgood and Plaintiffs resided in Texas City, Galveston County, Texas, and Sam Allgood was working for Amoco Chemical Company. On February 16, 1987, Sam Allgood was diagnosed with laryngeal cancer. Sam Allgood's laryngeal cancer was caused by his cigarette smoking. Thereafter Sam Allgood never

smoked again. All the cigarettes ever smoked by Sam Allgood were received by Sam Allgood without any substantial change in condition than when sold by their manufacturer. On February 23, 1987, the diagnosis of laryngeal cancer was confirmed by specialists, and on March 2, 1987 Sam Allgood underwent surgery consisting of a total laryngectomy, a right radical neck dissection, and creation of a tracheoesophageal fistula, which left Sam Allgood with a stoma, or hole at the base of his neck through which to breathe. In June, 1988, Sam Allgood was diagnosed with a stoma recurrence of the cancer, and on January 23, 1989, Sam Allgood died of the recurrent cancer weakening his right carotid artery until it burst. Sam Allgood was at home with Bonnie when this occurred, and their son Marcus, a Texas City policeman, was there very shortly upon his mother's call. They both suffered great emotional distress and mental anguish from Sam Allgood's dying in this shocking manner. Marcus, born May 13, 1958, and his brother Malcolm, born May 1, 1968, had always been close to Sam Allgood, even as adults.

3. On August 8, 1989, Bonnie qualified as independent executrix of Sam Allgood's estate. In that capacity Bonnie sues for damages under the Texas Survival Statute. Bonnie in her individual capacity, Marcus, and Malcolm sue for damages under the Texas Wrongful Death Statute. Bonnie and Marcus also sue for damages as bystanders.

4. Cigarette smoking is the major cause in the United States of lung cancer in men and women, of laryngeal cancer in men and women, of chronic bronchitis, and of emphysema. Cigarette smoking is a major cause in the United States of coronary heart disease in men and women, of cancer of the oral cavity (lip, tongue, mouth, pharynx), and of esophageal cancer. Cigarette smoking is a cause of cerebrovascular disease (stroke), a cause and most important risk factor for atherosclerotic peripheral vascular disease, a cause of intrauterine growth retardation, and a cause of disease, including lung cancer, in healthy non-smokers who involuntarily inhale cigarette smoke. Cigarette smoking is a probable cause of unsuccessful pregnancies, and of peptic ulcer disease. Cigarette smoking is associated with many other diseases and adverse effects on health. Cigarette smoking

shortens life span in men and women. Cigarette smoking is, and has been so recognized since 1982, the single most important preventable cause of death in the United States. Cigarette smoking is currently responsible for more than 434,000 (1988 data) premature deaths each year, or more than one of every six deaths, in the United States; it kills approximately one of every three smokers. Cigarette smoking is severely addictive; the pharmacologic and behavioral processes that determine tobacco addiction are similar to those that determine addiction to other mind-altering drugs such as heroin and cocaine. "Addictive" and "disease" and "death", when used in this petition, refer to what is stated above.

5. The tobacco industry, including defendants R. J. Reynolds and American Tobacco, knew (1) probably before, but by 1942 at the latest, that credible scientific evidence linked cigarette smoking to cancer and other disease, (2) by 1950 that credible scientific evidence strongly linked cigarette smoking to lung cancer, (3) in 1957 that a credible national scientific study group concluded that the relationship between cigarette smoking and lung cancer was causal, (4) in 1964 that the first Surgeon General's report revealed further causal relations between smoking and addiction and disease, and (5) by the dates shown in Exhibit A, attached hereto and incorporated herein, that successive Surgeon General's reports revealed further medical truths about the addiction and diseases caused by smoking. The tobacco industry and these defendants also knew probably before, but by 1942 at the latest, that several credible scientific studies had concluded that nicotine was responsible for the compulsive use of tobacco products. In the alternative as to each of these facts, if the defendant R. J. Reynolds or the defendant American Tobacco didn't know such fact at the time indicated above, such defendant or both of them thereby violated the duty each owed to the public, including Sam Allgood, to exercise ordinary care in the operation of its business of manufacturing, and selling for public consumption, cigarettes.

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6. Since at least later 1953, the "Big Six" American cigarette manufacturers, which consist of the defendants R. J. Reynolds and American Tobacco and also Phillip Morris, Incorporated, Brown and Williamson Tobacco Corporation, Lorillard, Inc., and later, Liggett & Myers Tobacco, Co., Inc., have agreed to, and have intentionally engaged in, a course of conduct with the objective, known to each of them, to suppress research and reports of research in the area of tobacco use and health, to eradicate charges and contradict published reports that linked cigarette smoking to disease, and in any case to create and maintain an apparent controversy, to mislead the public into thinking that there is a valid difference of opinion among scientists about whether cigarette smoking causes disease in humans. To effectuate this purpose, these tobacco companies created, in 1954, the Tobacco Industry Research Committee, predecessor to the defendant Council for Tobacco Research-U.S.A., Inc. (the "Council for Tobacco Research"), and in 1958, the defendant The Tobacco Institute, Inc. (the "Tobacco Institute"). To this date, pursuant to the common design of the Big Six which jointly control them, the Tobacco Industry Research Committee, and later the Council for Tobacco Research, and the Tobacco Institute, have continually acted toward the above-stated objective and succeeded in creating the appearance of controversy over the medical truth about cigarette smoking, that it does cause disabling and deadly disease in humans. Further, while having initially advised the Tobacco Industry Research Committee in "A Frank Statement To Cigarette Smokers", a copy of which is attached hereto as Exhibit B and incorporated herein, the Big Six jointly controlled the Tobacco Industry Research Committee, and later the Council for Tobacco Research, to hide from the public research reports it sponsored which supported the causal connection between cigarette smoking and disease and death. Each defendant is liable to Sam Allgood as a civil conspirator for each of the wrongs pled in paragraphs 7, 8, and 9.

7. The following causes of action, pled in the alternative where the facts so indicate, as well as the allegations of gross negligence and malice pled in paragraph 8, lie against each

defendant R. J. Reynolds, American Tobacco, the Council for Tobacco Research, and the Tobacco Institute, both as a result of their individual actions and inactions, and as a legal consequence of the civil conspiracy between them (as pled in paragraph 6). Causation will be pled in paragraph 9.

A. Fraud (Intentional misrepresentation): while knowing that cigarette smoking was addictive and caused disease and death, or at least while knowing that there was credible evidence, as pled in paragraph 5 above, that cigarette smoking was addictive and caused disease and death, or, recklessly and without any knowledge of the truth and as a positive assertion, making these material misrepresentations to the public, including Sam Allgood, with intent to mislead them in deciding and continuing to smoke cigarettes, that cigarette smoking was healthy, socially attractive, and enjoyable, and as pled in paragraph 6, and Sam Allgood relied on these misrepresentations in beginning and continuing to smoke cigarettes.

B. Fraud (Intentional concealment): while knowing that cigarette smoking was addictive and caused disease and death, or at least while knowing that there was credible evidence, as pled in paragraph 5 above, that cigarette smoking was addictive and caused disease and death, and knowing that the public lacked such knowledge and was unable to discover it, concealing such knowledge from the public, including Sam Allgood, including as pled in paragraph 6 above, with the intention of causing them to begin and continue to smoke cigarettes in such ignorance, which Sam Allgood did.

C. Misrepresentation: misrepresenting to the public, including Sam Allgood, that cigarette smoking was healthy and enjoyable, while cigarette smoking fails to possess these characteristics since it is addictive and causes disease and death, and as pled in paragraph 6. The representations that cigarette smoking was enjoyable and healthy, and as pled in paragraph 6, involved material facts concerning

the character and quality of cigarettes, and Sam Allgood relied on these misrepresentations in beginning and continuing to smoke cigarettes.

D. Negligence: before July 1, 1969, failing to exercise ordinary care in the selling and marketing of cigarettes, in failing to know that cigarette smoking is addictive and causes disease and death, or at least to know that there was credible evidence that cigarette smoking is addictive and causes disease and death, and to so warn the public, including Sam. A cigarette manufacturer of ordinary prudence, having the knowledge and skill of an expert in the field, would have so known and warned the public by the late 1950s, and certainly by 1942; and, failing to exercise ordinary care in selling cigarettes in the circumstances pled in paragraph 6 and paragraph 7, subparagraphs C, E, F, G and H.

E. Breach of express warranty: representing to Sam Allgood that cigarette smoking was healthy and enjoyable, and making the representations pled in paragraph 6 to Sam Allgood, which representations were part of the basis of the bargain between Sam Allgood and Defendants for the sale of their cigarettes, while cigarette smoking is neither healthy nor, with the truth known and appreciated, enjoyable, since cigarette smoking is addictive and causes disease and death, and the representations pled in paragraph 6 were and are untrue. All of these warranties explicitly extend to future performance of the goods.

F. Breach of implied warranties of merchantability and fitness for a particular purpose: the cigarettes Sam Allgood smoked were not fit for the ordinary purpose for which cigarettes are used and were required, which was enjoyable and healthy smoking, since they were addictive and caused disease and death, and Sam Allgood was relying on the defendant manufacturer's skill and judgment to furnish suitable cigarettes.

G. Strict liability (marketing defect): before July 1, 1969, the cigarettes Sam Allgood smoked had a marketing defect rendering them unreasonably dangerous due

to the defendant's failure to warn the public, including Sam Allgood, that cigarette smoking was addictive and caused disease and death, or at least that there was credible evidence that cigarette smoking was addictive and caused disease and death, which defendants knew, or, having the knowledge and skill of an expert in the field, reasonably should have known, by the late 1930s, and certainly by 1942.

H. Strict liability (design defect): the cigarettes Sam Allgood smoked had a design defect rendering them unreasonably dangerous taking into consideration the utility of cigarettes and the risks involved in their use, particularly the risk posed by the addictive nature of, and the disease and death caused by, cigarette smoking, and the lack of utility in this product which kills approximately one in every three users and causes disease in many others.

8. Gross negligence: the negligent conduct pled in paragraph 7, sub-paragraph D, was done with such an entire want of care as to establish that the negligent conduct was the result of actual conscious indifference to the rights, welfare, and safety of the public, including Sam.

Malice: the conduct pled in paragraph 6 and each subparagraph of paragraph 7 was done with malice in that it was:

(1) specifically intended by the defendants to cause substantial injury to smokers including Sam; or

(2) carried out by the defendants with a flagrant disregard for the rights of others and with actual awareness on the part of the defendants that the conduct would, in reasonable probability, result in human death and great bodily harm.

9. Before Sam Allgood was addicted and the Big Six conspiracy including the defendants had begun their program of deception (pled in paragraph 6), had the defendants or any of them not represented to Sam Allgood that cigarette smoking was healthy and enjoyable, but had warned Sam Allgood that cigarette smoking was addictive and caused disease and death, or at least that there was credible evidence that cigarette

smoking was addictive and caused disease and death, Sam Allgood would have heeded the warning and not begun smoking or ceased smoking. After Sam Allgood was addicted and the Big Six conspiracy had begun their program of deception, Sam Allgood was unable to stop smoking cigarettes, because of the power of his nicotine addiction, the tobacco industry's advertising which continued to falsely represent cigarette smoking to be healthy, socially attractive, and enjoyable, the efforts of the Tobacco Institute and the Council for Tobacco Research to mislead the public as pled in paragraph 6, and because of his apparently problem-free smoking history. Each defendant's wrong pled in paragraph 6 (civil conspiracy) and in each of paragraph 7, subparagraph 7.A (fraud), 7.B (fraud), 7.C (misrepresentation), 7.G (strict liability), and 7.H (strict liability), was a producing cause of plaintiffs' injuries pled in paragraph 10. Each defendant's wrong pled in paragraph 6 (civil conspiracy) and in each of paragraph 7, subparagraph 7.D (negligence), 7.E (breach of express warranty), and 7.F (breach of implied warranties), was a proximate cause of plaintiffs' injuries pled in paragraph 10.

10. Sam Allgood's cigarette smoking caused cancer to occur in his larynx, and caused him to undergo on March 2, 1987, biopsy surgery and surgery for a total laryngectomy and right radical neck dissection and creation of a tracheoesophageal fistula, to have to breathe through a hole in the base of his neck (or "stoma"), to have to learn to talk with the aid of a mechanical device inserted in his stoma, and to have to live with the deformity and disabilities left by the surgery and the ever-present threat of a recurrence of the cancer. Sam Allgood suffered a stomal recurrence of his cancer, which despite treatment attacked his carotid artery until it burst, causing his death on January 23, 1989. Further, as a result of his cancer and surgery, Sam Allgood, although then only fifty-seven, was involuntarily retired from his work. The shocking manner of Sam Allgood's death caused great emotional distress and mental anguish to Bonnie and Marcus, who were bystanders. Sam Allgood's death further caused expenses related to his funeral, increased expenses to Bonnie, loss by Bonnie of disability and retirement payments, and

further for Bonnie, loss of consortium, continuing mental anguish and emotional distress, increased risk of heart attack and cancer, and loss of support and of inheritance; and for Marcus, loss of companionship and society and continuing emotional distress and mental anguish; and for Malcolm, loss of companionship and society and emotional distress and mental anguish.

WHEREFORE, plaintiffs Mrs. Samuel E. Allgood, individually and as independent executrix of the estate of Samuel E. Allgood, Marcus P. Allgood, and Malcolm P. Allgood, pray for judgment against the defendants R. J. Reynolds Tobacco Company, The American Tobacco Company, The Tobacco Institute, Inc., and The Council for Tobacco Research-U.S.A., Inc., jointly and severally, for compensatory damages in an amount in excess of the minimum jurisdictional limits of the court, for punitive damages, for prejudgment and postjudgment interest as provided by law, costs of court, and for such other and further relief to which plaintiffs are justly entitled.

Respectfully submitted,



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(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day a true and correct copy of the foregoing amended complaint has been forwarded by certified mail, return receipt requested to each of the following attorneys in charge:

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Dallas, Texas 75270

MARCH 10, 1993
Date

Alden D. Holford
Alden D. Holford

TABLE 13.—Summary of the principal effects of cigarette smoking

Effect first discussed in Surgeon General's Reports	Year first discussed in a Surgeon General's Report	Current knowledge in 1989
Mortality and morbidity		
Overall mortality, increased in men	1964	Overall mortality increased in men and women
Overall morbidity, increased	1967	Overall morbidity increased
Cardiovascular		
CHD, mortality increased in men	1964	A major cause of coronary heart disease in men and women
Cardiovascular disease (stroke), mortality increased	1964	A cause of cardiovascular disease (stroke)
Atherosclerotic aortic aneurysm, mortality increased	1967	Increased mortality from atherosclerotic aortic aneurysm
Atherosclerotic peripheral vascular disease, risk factor	1971	A cause and most important risk factor for atherosclerotic peripheral vas.
Cancer		
Lung cancer, the major cause in men	1964	The major cause of lung cancer in men and women
Laryngeal cancer, a cause in men	1964	The major cause of laryngeal cancer in men and women
Oral cancer (lip), a cause (passive smoking)	1964	A major cause of cancer of the oral cavity (lip, tongue, mouth, pharynx)
Esophageal cancer, associated with	1964	A major cause of esophageal cancer
Bladder cancer, associated with	1964	A contributory factor for bladder cancer
Prostatic cancer, increased mortality	1967	A contributory factor for prostatic cancer
Renal cancer, increased mortality	1968	A contributory factor for renal cancer
Gastric cancer, associated with	1962	An association with gastric cancer
Cervical cancer, possible association with	1982	An association with cervical cancer

TABLE 13.—Continued

Effect first discussed in Surgeon General's Reports	Year first discussed in a Surgeon General's Report	Current knowledge in 1989
Pulmonary		
Chronic bronchitis, the major cause	1964	The major cause of chronic bronchitis
Emphysema, increased mortality	1964	The major cause of emphysema
Women		
Low-birthweight babies, associated with	1964	A cause of intrauterine growth retardation
Unsuccessful pregnancy, associated with	1970	A probable cause of unsuccessful pregnancies
Other effects		
Tobacco habit, related to psychological and social drives	1964	Cigarette smoking and other forms of tobacco use are addictive
Revoluntary smoking, inverse effect	1972	A cause of disease, including lung cancer, in healthy nonsmokers
Peptic ulcer disease, associated with	1964	A probable cause of peptic ulcer disease
Occupational interactions, adverse	1971	Adverse occupational interactions that increase the risk of cancer
Alcohol interactions, adverse	1971	Adverse interactions with alcohol that increase the risk of cancer
Drug interactions, adverse	1979	Adverse drug interactions
Nonmalignant oral disease, associated with	1969	An association with nonmalignant oral disease
Smokeless tobacco, associated with oral cancer	1979	Smokeless tobacco is a cause of oral cancer

A Frank Statement To Cigarette Smokers

RECENT REPORTS on connections with skin have given our industry a shock that cigarette smoking is a more serious matter than we have realized.

Although conducted by doctors of professional standing, these experiments are not regarded as measures in the field of cancer research. However, we do not believe that any serious medical research, even though its results are immediately obvious to the layman, is to be disregarded.

All the same time, we feel it is in the public interest to call attention to the fact that eminent doctors and research scientists have publicly questioned the claimed significance of these experiments.

Disappointed subscribers point out:

1. That constant reports of recent years indicate many possible causes of lung cancer.

2. That there is no agreement among the authorities regarding just the cause of it.

3. That there is no proof that cigarette smoking is one of the causes.

4. That statistics purporting to link cigarette smoking with the disease cannot apply with equal force to any one of many other aspects of modern life, against the validity of the statistics themselves is questioned by common-sense.

We accept as implicit in people's minds as a basic responsibility, fundamental to every other consideration in our business, that we believe the products we make are not injurious to health.

We always have, and always will cooperate closely with those whose aim it is to safeguard the public health.

For more than 100 years tobacco has given comfort, satisfaction, and enjoyment to millions. At one time or another during these years we have had a reasonable for practically every element of the human body. One by one these charges have been abandoned for lack of evidence.

Regardless of the record of the past, the fact that cigarette smoking today should even be suspected as a cause of a serious disease is a matter of deep concern to us.

Many people have asked us what we are doing to meet the public's concern aroused by the recent reports. Here is the answer:

1. We are studying all our processes to the utmost extent to remove all traces of tar and nicotine. The just finished out of all of these to be studied to what is being being consumed by individual consumers.

2. For the purpose of our conducting a joint laboratory group consisting of the industry. This group will be known as TOBACCO INDUSTRY RESEARCH COMMITTEE.

3. In theory of the research activities of the Committee will be a mixture of commercial laboratory and medical research, to address there will be an Advisory Board of distinguished scientists in the cigarette industry. A group of distinguished men from medicine, surgery, and dentistry will be invited to serve on the Board. These men will all of the Committee on its research activities.

The agreement is being signed because we believe the people are entitled to know what we stand on this matter and what we intend to do about it.

TOBACCO INDUSTRY RESEARCH COMMITTEE 400 EMPIRE STATE BUILDING, NEW YORK 1, N. Y.

SPONSORS:

THE AMERICAN TOBACCO COMPANY, INC.
Paul A. Smith, President

WATSON & SMITH
John F. Watson, Jr., President

SMOKERS' ONLY TOBACCO ASSOCIATION
E. A. Johnson, President

WATSON & WATSON TOBACCO COMPANY
Paul A. Smith, President

SMOKERS' ONLY TOBACCO ASSOCIATION
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WATSON & WATSON TOBACCO COMPANY
Paul A. Smith, President

EXHIBIT B

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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

MRS. SAMUEL E. ALLGOOD,
INDIVIDUALLY AND AS
INDEPENDENT EXECUTRIX OF
THE ESTATE OF SAMUEL E.
ALLGOOD, MARCUS ALLGOOD,
AND MALCOLM ALLGOOD,
Plaintiffs

vs.

R. J. REYNOLDS TOBACCO
COMPANY, THE AMERICAN
TOBACCO COMPANY, THE
TOBACCO INSTITUTE, INC. AND
THE COUNCIL FOR TOBACCO
RESEARCH - U.S.A., INC.
Defendants

C. A. No. H-91-0158

PLAINTIFFS' AMENDED SECOND REQUEST FOR PRODUCTION TO
DEFENDANT THE AMERICAN TOBACCO COMPANY

TO: Defendant The American Tobacco Company by and through its attorney in charge,
Sam W. Cruse, Jr., Andrews & Kurth, 4200 Texas Commerce Tower, Houston,
Texas 77002.

Pursuant to Rule 26 of the Federal Rules of Civil Procedure, Plaintiffs Mrs. Samuel E. Allgood, individually and as independent executrix of the estate of Samuel E. Allgood, Marcus Allgood, and Malcolm Allgood, request that Defendant The American Tobacco Company produce for inspection and copying by Plaintiffs' counsel, or someone acting under Plaintiffs' counsel's direction and control, the following specified items. In the following specification, "CTR" refers to The Council for Tobacco Research-U.S.A., Inc., and to its predecessor, The Tobacco Industry Research Committee, "RJR" refers to the R. J. Reynolds Tobacco Company, "American Tobacco" refers to The American Tobacco Company, and "TI" refers to the Tobacco Institute, Inc. This request for production is

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substituted for and replaces Plaintiffs' Second Request For Production To The Council For Tobacco Research - U. S. A. Inc., which may be disregarded.

Time of production: The specified documents are to be produced at 10:00 a.m. on Tuesday, May 5, 1992, the inspection and copying to begin then and continue until completed.

Place of production: Kinko's Copies at 9894 Southwest Freeway, Houston, Texas 77051.

Specification of Documents to be Produced

1. Each and every document or other item of any description or nature ever received by or involved in the "special projects" division or program mentioned in the February 6, 1992 opinion and order of U.S. District Judge H. Lee Sarokin in Haines v. Liggert Group, Inc., et al, Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached.
2. Each and every document or other item of any description or nature related in any way to the "special projects" division or program mentioned in the February 6, 1992 opinion and order of U.S. District Judge H. Lee Sarokin in Haines v. Liggert Group, Inc., et al, Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached.
3. Each and every document or other item of any description or nature on or in which reference is made to the "special projects" division or program mentioned in the February 6, 1992 opinion and order of U.S. District Judge H. Lee Sarokin in Haines v. Liggert Group, Inc., et al, Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached.
4. Each and every document or other item of any description or nature related to research sponsored by or through the "special projects" division or program mentioned in the February 6, 1992 opinion and order of U.S. District Judge H. Lee Sarokin in Haines v. Liggert Group, Inc., et al, Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached.
5. Each and every document or other item of any description or nature ever received by or involved in the "CTR Special Projects funded through the CTR accounting department" mentioned in the quote on page 30 of the February 6, 1992 of U.S. District Judge H. Lee Sarokin in Haines v. Liggert Group, Inc., et al, Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached.
6. Each and every document or other item of any description or nature related in any way to the "CTR Special Projects funded through the CTR accounting department" mentioned in the quote on page 30 of the February 6, 1992 opinion of U.S. District

Judge H. Lee Sarokin in Haines v. Liggett Group, Inc., et al. Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached.

7. Each and every document or other item of any description or nature on or in which reference is made to the "CTR Special Projects funded through the CTR accounting department" mentioned in the quote on page 30 of the February 6, 1992 opinion of U.S. District Judge H. Lee Sarokin in Haines v. Liggett Group, Inc., et al. Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached.
8. Each and every document or other item of any description or nature related to research sponsored by or through the "CTR Special Projects funded through the CTR accounting department" mentioned in the quote on page 30 of the February 6, 1992 opinion of U.S. District Judge H. Lee Sarokin in Haines v. Liggett Group, Inc., et al. Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached.
9. Each of the items described in subparagraphs a. through m. below, each of which is quoted from or described in the February 6, 1992 opinion of U.S. District Judge H. Lee Sarokin in Haines v. Liggett Group, Inc., et al. Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached, at the stated page. Each of the lettered items below constitutes a separately requested item for production.
 - a. The TI advertisement captioned "A Statement about Tobacco and Health," mentioned on page 10 and quoted from on pages 10-11.
 - b. The TIRC by-laws mentioned and quoted from on page 11.
 - c. The 1970 statement of TI belief that the public is entitled to complete information about cigarette smoking and health, quoted from on page 11.
 - d. The Haines defendants' (including R. J. Reynolds) statement quoted in the carryover paragraph on pages 11-12.
 - e. The 1970 TI advertisement mentioned and quoted from on page 12.
 - f. The 1984 RJR *NY Times* advertisement mentioned and quoted from on page 12.
 - g. The 1966 letter reassigning a CTR research project to the special projects division, mentioned on page 15.
 - h. The letter memorializing reassignment of research project from CTR to special projects in order to continue funding, mentioned on page 16.
 - i. The 1961 memo from Arthur D. Little acknowledging cancer causing elements in cigarette tobacco, mentioned on page 27, in footnote 9.

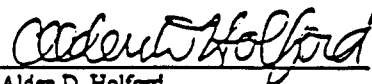
- j. The 1956 Phillip Morris internal memorandum acknowledging potential cancer hazard, mentioned on page 27, in footnote 9.
 - k. Dr. Waksham's 1961 report conceding that smoking may be a cause of cancer and disease, and listing particular compounds in cigarette smoke identified as carcinogens, mentioned on page 27, in footnote 9.
 - l. The 1946 Lorillard letter acknowledging the possibility of the presumption that tobacco contributes to cancer, described on page 27, in footnote 9.
 - m. Each and every document involved in the 1964 establishment of the "special projects" division, referred to on page 27, in footnote 9.
10. Each of the items described in subparagraphs n. through u. below, each of which is quoted from or described in the February 6, 1992 opinion of U.S. District Judge H. Lee Sarokin in Haines v. Ligon Group, Inc., et al., Civ. No. 84-678 in the United States District Court for the District of New Jersey, a copy of which is attached, at the stated page. Each of the lettered items below constitutes a separately requested item for production.
- n. The October 6, 1966 minutes of a September 30, 1966 meeting, mentioned and quoted from on page 32.
 - o. The October 11, 1966 transmittal letter from Shook, Hardy & Bacon, mentioned on page 32.
 - p. The notes of the September 10, 1981 Committee of General Counsel, mentioned and quoted from on page 33.
 - q. The September 18, 1981 transmittal letter from Webster & Sheffield, mentioned on page 33.
 - r. The document captioned "Notes from the September 10, 1981 Meeting of Company Counsel and Ad Hoc Committee Members," mentioned on page 33 and quoted from on page 34.
 - s. All documents and other items of any description or nature relating in any way to "Special Four" mentioned in the first quote on page 34.
 - t. The November 6, 1978 Memorandum from Donald Hoel regarding the Industry Research Committee meeting of October 26, 1978, in Lexington, Kentucky, mentioned on page 34 and quoted from on pages 34-35.

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- u. The November 17, 1978 Memorandum from R. B. Seligman to the CTR file regarding a November 15, 1978 meeting in New York, mentioned on page 35 and quoted from on pages 35-36.

Respectfully submitted,



Alden D. Holford
Federal LD. No. 2153
State Bar No. 09834400
7515 Kensico
Houston, Texas 77036
(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day the original of the foregoing request for production has been forwarded by certified mail, return receipt requested, to the following counsel of record:

Sam W. Cruse, Jr.
Andrews & Kurth
4200 Texas Commerce Tower
Houston, Texas 77002

and a true copy has been forwarded by certified mail, return receipt requested, to each of the following counsel of record:

Lea F. Courington
Gwinn & Roby
4100 Renaissance Tower
1201 Elm Street
Dallas, Texas 75270

Richard H. Caldwell
Mayor, Day & Caldwell
1900 Republic Bank Center
Houston, Texas 77002

William Key Wilde
Bracewell & Patterson
2900 South Tower Pennzoil Place
Houston, Texas 77002

March 27, 1992
Date


Alden D. Holford

1:20 PM

2/6/92

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

	1	728 8 872
	2	AT 1200 - 8-15
	3	WILLIAM H. HALL
	4	Plaintiff,
	5	Civ. No. 81-72 (TJL)
	6	OPINION
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In light of the current controversy surrounding breast implants, one wonders when all countries will recognize their obligation to voluntarily disclose risks from the use of their products. All too often is the choice between the physical health of consumers and the financial well-being of business, government is chosen over disclosure, sales over safety, and money over morality. Who are those persons who knowingly and secretly decide to put the buying public at risk solely for the purpose of making profits and who believe that illness and death of consumers is an appropriate cost of their own prosperity?

As the following facts disclose, despite some risking pretenses, the tobacco industry may be the king of concealment and disinformation.

and documents to begin, and to reassure the public that adverse information would be disclosed.

While the efforts within the CTR chosen to advertise were well publicized, plaintiff learned of a covert division of the CTR, the "special projects" division. Under the auspices of the special projects program, defendants' counsel and other tobacco industry attorneys collaborated in concealing, monitoring, and directing the course of research projects purportedly designed to identify covert witnesses and to develop evidence supporting defendants' positions in existing and anticipated litigation and Congressional hearings. Defendants insist that their "special projects" efforts are entirely distinct from and unrelated to the CTR's advertised "independent" research and thus, "special projects" documents are protected by the attorney-client privilege. However, plaintiff made discovery of the "special projects" documents otherwise subject to the attorney-client privilege on the ground that said documents came within the crime/fraud exception to the privilege.

Plaintiff has produced *ex facie* evidence that defendants' "special projects" program was interrelated and intertwined with the CTR's supposedly "independent" program. The facts presented support plaintiff's overall theory of fraud based on the false claims regarding the independence of CTR-sponsored research and on the likelihood that defendants mounted a public relations campaign designed to discredit the links between smoking and disease which defendants knew existed.

In 1986, the tobacco industry promised to disclose the results of industry-sponsored, independent scientific research for the purpose of answering the question: "Does cigarette smoking cause illness?" Months later, one concrete vein for a "Frank Statement to Cigarette Smokers" from the tobacco industry which purports to answer that question.

Plaintiff alleges that defendants have perpetuated a public relations fraud. Plaintiff has presented evidence from which a reasonable jury could conclude that the tobacco industry in general, and defendants in particular, were aware of the risk of smoking; were concerned about the possibility of those risks by others and the consequent impact upon cigarette sales; and sought to discredit or neutralize the adverse information by proffering an independent research organization, the Council for Tobacco Research (the "CTR"), which purportedly would handle the risks of smoking and report its findings to the public. The evidence presented by plaintiff supports a finding that the industry research which might indicate smoking as a cause of illness was diverted to covert research projects and that the public relations efforts were primarily directed at finding someone other than smoking for the illnesses being attributed to it.

A jury might reasonably conclude that the industry's announcement of proposed independent research into the dangers of smoking and its promise to disclose its findings was nothing but a public relations ploy — a fraud — to deflect the growing evidence against the industry, to encourage smokers to continue

Furthermore, there is evidence supporting the conclusion that research which might tend to prove smoking a cause of such illnesses was diverted into special projects and intentionally shielded by the attorney-client privilege so as to prevent its disclosure.

The court has conducted an *ex facie* review of select special projects documents, and, as presented in the opinion below, the documents read for themselves in a way filled with details for the consuming public and its health. Despite the industry's promise to engage independent researchers to ensure the dangers of cigarette smoking and to publicize their findings, the evidence clearly suggests that the research was not independent; that potentially adverse results were shielded with the caption of "special projects"; that the attorney-client privilege was intentionally employed to guard against such unwanted disclosures; and that the promise of full disclosure was never meant to be honored, and never was. Accordingly, the crime/fraud exception applies and that plaintiff is entitled to discovery of the withheld special projects documents.

PROPOSED DISCOVERY

Before the court is plaintiff's appeal from the letter of Judge Sotomayor May 22, 1991 letter-order holding that certain documents requested by plaintiff of defendants are not subject to

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discovery under the work/product exception to the attorney-client privilege.

Also before the court is Special Master Pisano's Report and Recommendation regarding defendants' assertion of privilege with respect to the over 1500 documents subject to the Registera Judge's work/product ruling.¹

The documents in question pertain to the "Special Projects" program of the Tobacco Institute Research Council ("TIRC"), later called the Council for Tobacco Research ("CTR"). Plaintiff's demand for discovery of CTR documents is limited to "certain" Civ. No. 89-1004 (RJS). As this court recognized in its opinion denying the defendants' motion for a directed verdict, 643 F. Supp. 1487, 1490-93 (D.D.C. 1988), the CTR-sponsored research projects were generally conducted to the core health issues implicated by cigarette smoking. However, during the course of that trial, plaintiff's counsel learned that the CTR had a separate "special projects" program about which defendants had not provided full discovery.² The "special projects" division of the CTR did sponsor research directly relevant to the hazards of smoking.

Plaintiff's counsel also learned that the "special projects" division was specifically designed to sponsor

epidemiological studies which could be of use to cigarette manufacturers in their defense of various current and future public opinion polls based on the hazards of cigarette smoking. Plaintiff's counsel indicated during the discovery trial that those withheld documents might be subject to discovery on the basis of the work/product exception to the attorney-client and work-product privileges, but this issue was neither presented or resolved during the course of the discovery trial.

As to the discovery issue, plaintiff seeks to discover those "special projects" documents which were to this point withheld pursuant to the attorney-client and work-product privileges. Plaintiff has already obtained discovery of such "special projects" research proposals, correspondence between researchers, and "special projects" reports and studies, but of other documents, plaintiff has only been provided with a "privilege log" prepared by defense counsel. Defendants represent that the withheld documents relate to defendants' internal communications on strategic issues in cigarette defense litigation consistent with the overall purpose of the "special projects" division of the CTR.³ Defendants have withheld approximately 1500 documents pursuant to their privilege claim

1. Since the time that the aforesaid letter-order and the Report and Recommendation were filed, Special Master Pisano has been appointed the Registera Judge assigned to this Court.

2. 12/4/91 Aff. of Mark Hall, 11 Fed. R. J. Serv. 1000 (D.D.C. 1991).

3. Plaintiff contends that the first impetus of the litigation purpose of the special projects from Special Master Pisano's Report and Recommendation, 12/4/91 Aff. of Mark Hall, 11 Fed. R. J. Serv. 1000 (D.D.C. 1991) was entirely litigation oriented. See Mark Hall, Aff. at 11/10/91 letter from William H. Hall, Esq. to the Court.

The Registera Judge referred the question of whether defendants have properly asserted the attorney-client and work-product privileges to Special Master Pisano. However, defendants objected to having the Special Master determine whether the work/product exception to the privilege applied in this case. Accordingly, the work/product question was to be decided by the Registera Judge.

The Special Master reviewed the 1500 documents in their entirety, and reported certain conclusions in his Report and Recommendation dated May 28, 1991. The Special Master stated:

The documents reflect, in the main, discussions concerning the program CTR projects, the progress of those projects, the possibility of funding additional research issues and the utilization of research results in the legal litigation available in defense of existing and anticipated litigation.

May 28, 1991 at 6 & 7. The Special Master recommended denying defendants' privilege claim with respect to all but six of the 1500 documents. He also "tagged" four files of documents which he considered relevant for purposes of the work/product issue and provided those documents to the Registera Judge. Plaintiff agrees that the four files "tagged" by the Special Master are representative of the documents which support plaintiff's work/product argument.

The Registera Judge considered the written objections of counsel on the work/product issue and proceeded to address the merits of plaintiff's work/product contention without oral argument pursuant to General Rule 78. The Registera

Judge's one paragraph resolution of the "merits" of the work/product issue reads, in its entirety:

I do not believe that plaintiff has made a showing under Rule 78 sufficient to overcome the attorney-client privilege.

May 28, 1991 letter-order, Vol. 88, 4.

The parties dispute whether the Registera Judge conducted an in camera review of the relevant documents tagged to the Special Master. Plaintiff contends that the Registera Judge did conduct an in camera review (Vol. 88 at 27-28), while defendants argue that he did not. See Brief at 5, 7-9, 10-12. On May 22, 1991 Order, the Registera Judge did state:

I have also reviewed documents presented by Mr. Pisano. These documents are identified in Mr. Pisano's affidavit, the original of which was filed under seal on April 15, 1991.

Regardless of whether the Registera Judge did in fact conduct an in camera review of the documents (and based on the above quote it appears that the Registera Judge did review the documents), plaintiff opposes the effective outcome of the Registera Judge's order rejecting application of the work/product exception to certain or all of the 1500 documents.

As for the Special Master's Report and Recommendation the parties dispute whether plaintiff made a timely objection to the Special Master's Report and Recommendation, filed May 29, 1991, and whether such written objections were necessary in order to preserve plaintiff's right to object to the Report and Recommendation at a subsequent hearing. Plaintiff contends that

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no written objections were required pursuant to this court's January 23, 1991 Order reflecting certain discovery issues to the Special Master since, as plaintiff reads the January Order, objections could be raised at a hearing. In addition, plaintiff argues that she has preserved her objections to the Special Master's Report and Recommendation -- her objection being that the crime/fraud exception could apply -- because the identical questions are at issue in her previously filed appeal from the Registrar Judge's order. Plaintiff has proposed that the hearing on the Report and Recommendation occur in conjunction with the July 9, 1991 oral argument on plaintiff's appeal from the Registrar. Defendants objected to such a disposition, since they argue that plaintiff is precluded from objecting to the Special Master's Report.

The court heard oral argument on July 9, 1991 only in regard to plaintiff's appeal from the Registrar Judge's order and not with regard to the Special Master's Report and Recommendation.

FACTUAL BACKGROUND

The factual background relevant to this motion consists of plaintiff's theory of the alleged fraud by defendants and the evidence which plaintiff has marshaled in support of that theory.

summary of this program of research until the facts are known.

...

THE ABILITY TO OBTAIN ALL AVAILABLE INFORMATION IS
THE ABILITY TO OBTAIN ALL AVAILABLE INFORMATION IS
are cooperating with the Public Health Service in its plan to have a control study group review all previously available research

Pl. Exhibit 1, p.1 (emphasis added). Indeed, the current program of the TIME, as stated in its by-laws, is to "make [information] available to the public." Pl. 1/10/91 Brief to Special Master, Ex. 2. Defendants repeatedly contended their commitment to full, public disclosure of CTR sponsored research "is cooperating in efforts to learn and to make known all the facts." Pl. Ex. 1, p.2 (emphasis in original). As late as 1970, the tobacco industry repeated its representation that it prompted the disclosure of relevant facts: "The Tobacco Institute believes that the American public is entitled to complete, unobstructed information about cigarette smoking and health." Pl. Ex. 1, p.4.

At the same time, defendants vividly touted the "independent" and "objective" nature of the CTR, disclaiming any affiliation with or influence of the tobacco industry. These representations amounted to claims of independent decision-making regarding the funding of research proposals.

Since 1964, tobacco growers, smoking manufacturers and manufacturers have been operating the Tobacco Industry Research Council's program of independent research into all aspects of tobacco use and health.

DEFENDANTS' CASE THEORY

Plaintiff's theory of the fraud in this case is the defendants knew of the hazards of cigarette smoking; concealed information which demonstrated the dangers of smoking; and affirmatively misled the public with regard to the risks of smoking. It is this last factor -- defendants' affirmative misrepresentations to the public -- which constitutes the all fraud.

In addition to defendants' direct representations to the public regarding the risks of smoking, a crucial element plaintiff's case is defendants' "concealment" of the CTR as a primary vehicle for misleading the public. Defendants vividly overstated the CTR as an entirely independent and objective scientific research body which was investigating the assumed hazards of cigarette smoking and the results of those cigarette studies to the public. Plaintiffs have provided just a few of the many overstatements by defendants which are admitted in this appeal.

For example, defendants provided full public disclosure of relevant research in The Tobacco Institute advertisement captioned "A Statement About Tobacco and Health":

It is our responsibility to have a special scientific advisory board . . . to help scientists determine the facts about tobacco and health, and come to plain decisions that have been established with tobacco use.

We accepted this responsibility in 1964 by establishing the Tobacco Industry Research Council, with previous research grants to independent scientists. We pledge unflinching

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Research policy and program is determined by a scientific advisory board These men develop the research policy, determine areas of research interest and award grants for research.

Pl. Ex. 1, p.3. In 1970, the Tobacco Institute presented independence of the CTR in its editorial-styled advertisement "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.

...

Completely autonomous, CTR's research is directed by a board of ten scientists and physicians This board has full autonomy and responsibility for policy, development and direction of the research effort.

Pl. Ex. 1, p.3. As late as 1984, the case just in this suit was filed, defendant L.J. Beyrout advertised in the New York Times: "Times which conclude that smoking causes cancer have regularly ignored significant evidence to the contrary. These scientific findings came from research completely independent of the tobacco industry." Pl. Ex. 1, p.3.

Plaintiff contends that in fact, the publication of the tobacco industry to research the issues and to the results to the public were a public relations hoax -- the scientific research was conducted and that it was never the industry's intention to disclose or publish the truth to

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fields of smoking. In contrast to defendants' promotion of the CTR's "independence" and "objectivity," plaintiff alleges that defendants misled the CTR to sponsor research funding to prove that other causes existed for the illnesses being attributed to smoking, in an effort to perpetuate doubts about links between smoking and disease rather than to uncover the truth. If true, such manipulation of the CTR would be directly contrary to defendants' advertised representations regarding the industry-sponsored CTR. This "concealment" with respect to the CTR is a major element of plaintiff's larger fraud theory, i.e., that defendants affirmatively misled its members as to the true hazards of smoking. The court specifically concludes that plaintiff presents a viable theory of fraud, of which the role of the CTR is an integral part.⁴

4. Defendants' Manipulation of the CTR's Research Program

It now appears that there were a number of research grants designated as "special projects" which were developed in a manner so as to receive the protection of the attorney-client privilege. The "special projects" division was under the

4. Defendants' potential interest in the allowed fraud is obvious. As have plaintiffs testified in deposition before the court, the tobacco industry representatives who led the CTR as an independent scientific body that had pur to limit cigarette funds to counter efforts to restrict smoking like have eliminated a connection to cigarette smoking, despite contrary scientific findings coming to court. In *Clinton*, 683 F. Supp. at 1000-01 ("This [conspiracy] allegedly serves to create doubt in the minds of the consumer as to smoking and its hazards, and places on the shoulders of those who were either addicted and/or dependent").

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Research program. These are just examples of the kind of research that would perhaps be a special project.

11/4/91 Aff. of Dr. G. Hall, § 317 (1984-1985), 8th Cir. of Fed. Supplemental Jurisdiction.

In addition, plaintiff has presented concrete evidence of concealment and cooperation between the CTR and the special projects division. For instance, plaintiff has discovered a 1986 letter reassigning a CTR research project to the special projects division. *Vit. Reply Brief* 8th Cir. Plaintiff has also discovered that scientific writing in conjunction with defendants' litigation efforts were simultaneously mailed to independent CTR-sponsored scientists. *Vit. Reply Brief* at 4-17 and *Exh. D-C* (proving that Drs. Salner, Wolf, and Friberg were sponsored by both the CTR and the special projects division). Special Master Pinnas has also suggested that there was substantial overlapping between the "special projects" division and the regularly sponsored CTR projects:

As a demonstration of the fact that the CTR had obtained a dual purpose, Dr. F.S. Gray characterized himself as "a person carrying two hats. Number one, [he] was in charge of R & D information coming to, [he] was responsible to the legal department." (Deposition of Gray, 9/1/90, Plaintiff Exhibit 8.) Dr. Gray's lawyer disputed his "hat to cover [questions at his deposition] can be served as an advisory opinion to lawyers re pending litigation or threat of litigation, was he communicated to the summary, to the R & D department." (Deposition of Gray, 12/2)

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operations of the CTR, although defendants insist that the "special projects" division was managed entirely separately from the CTR. *Brief* at 2. The stated purpose of the "special projects" division was to sponsor research relevant to the links between smoking and disease in order to develop a field of expert witnesses for defensive litigation in tort suits. Consistent with this purpose, defendants' counsel were substantially involved in strategy and specific decision-making within the "special projects" division.

Although defendants represented to the public that research conducted under the auspices of the CTR would be non-partisan, the "special projects" research was not publicized, or was the existence of the "special projects" division disclosed. In addition to this causal connection between the CTR and tobacco industry, the channeling of scientific research away from either the CTR or the "special projects" division and the shared research between the two bodies defendants' public representations and expert depositions that the CTR was an independent, objective body. Indeed, plaintiff's counsel first learned about the existence of the special projects division in the following testimony of Dr. Sheldon Samuels, R.D., Scientific Research Director of the CTR from 1969 to 1972, during cross-examination at the *Clinton* trial:

Q: What are CTR special projects?

A: From time to time a proposal will reach the council, which is of a type that doesn't fit into the Scientific Advisory Board's

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Reply 18, 1991 R & E at 2. The Gray testimony supports plaintiff's contention that the CTR's scientific efforts were commingled with defendants' legal concerns.

The possibility that research was selectively channelled and disclosed based on a determination of whether to tobacco industry defensive litigation concerns defendants' specific representations that assistance on project funding was made by completely independent scientific advisors without connections to the tobacco industry, as well as defendants' promise to disclose all relevant information to the public. Furthermore, the possibility that epidemiological studies relevant to the links between smoking and disease were directed into the "special projects" division again supports plaintiff's contention that the CTR research made available to the public was not relevant to the issues which the CTR had promised to investigate.

According to defendants' claim before this court, it withheld documents concerning defense counsel's input regarding which projects should be continued or discontinued based on its helplessness to defendants' defense strategy. *See Vit. Reply* 8th Cir. C (letter concerning reassignment of research project to CTR to special projects in order to continue funding). CTR projects were created between CTR and the "special projects" division, such involvement of defendants' litigation strategy in these specific funding assignments could amount to tobacco industry manipulation of the CTR. Thus, a key portion of

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plaintiff's fraud theory is supported by the very existence and explicit purpose of the CTE "special projects" division. On this basis, plaintiff argues that she has established "prima facie" evidence of fraud sufficient to remove the crime/fraud exception to the attorney-client and work-product privileges. If given discovery of the withheld documents, plaintiff expects to uncover documentation that decisively refutes "special projects" and CTE projects further emphasizing defendants' legal and public relations interests with supposedly "objective" scientists.

Discussion

For the reasons articulated below, the court finds that there is sufficient *AMAZON* *Callis* evidence of fraud in connection with the public occurrence seen by defendants to declare that the crime/fraud exception shall apply in this matter. The court further concludes that any holding to the contrary by the Register Judge was clearly erroneous. In addition to the evidence and factual inferences already put forward by plaintiff, which is certainly sufficient to warrant a *Callis* inspection of selected documents, this court's own *Callis* review of the documents supports plaintiff's recitations of the explicit and pervasive nature of the alleged fraud by defendants and defendants' abuse of the attorney-client privilege as a means of effectuating that fraud.

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"Independent evidence" (*Callis*) without reference to the content of the contacted communications themselves, or, alternatively, whether the applicability of that exception can be resolved by an *Callis* inspection of the allegedly privileged material." *Id.* at 134. *Callis* held that a *Callis* inspection *could* be used when the party challenging the privilege 1) requests a *Callis* inspection, and 2) "present[s] evidence sufficient to support a reasonable belief that a *Callis* review may yield evidence that establishes the exception's applicability." 491 U.S. at 134-35.

Once that showing is made, the decision whether to engage in a *Callis* review rests in the sound discretion of the district court. The court should make that decision in light of the facts and circumstances of the particular case, including, among other things, the nature of materials the district court has been asked to review, the relevance inferences to the case of the alleged privileged information, and the likelihood that the evidence proffered through a *Callis* review, together with other available evidence known before the court, will establish that the crime/fraud exception does apply.

491 U.S. at 132. Understandably, the decision to engage in a *Callis* review implicates a much more lenient standard of proof than the determination to apply the crime/fraud exception, as the intrusion on the asserted privilege is minimal. *Id.* ("[t]he threshold on set, in other words, does not lie a straggling one"); see also *In re American Bar Endorsement*, 679 F.2d 1211, 1216 (10th Cir. 1981).

Although the Register's reference to *Callis* clearly raises questions as to whether the Register concluded that

This court can only reverse the Register's ruling this non-dispositive discovery matter if the ruling is either clearly erroneous or contrary to law. Fed. R. Civ. P. 121(a). Plaintiff contends that the ruling was both. "A finding 'clearly erroneous' does not require the court to reverse it, the reviewing court is left with the definite and firm conviction that a mistake has been committed." *Miller v. Miller*, 338 U.S. 324, 328 (1949). Under the clearly erroneous standard, mere disagreement between two permissible views of the evidence does not entitle the reviewing court to reverse the lower court. *AMERICAN BAR ENDORSEMENT*, 679 U.S. 1214, 1217-18 (2021).

In this appeal, there are two questions: (1) whether this court can and should overturn an *Callis* inspection of disputed documents; and (2) whether the Register Judge's own handling of defendants' claim of privilege was clearly erroneous.

In *Callis* Review by the Register and This Court is *Callis*

The crime/fraud exception to the attorney-client and work-product privileges was most recently discussed in *Miller v. Miller*, 338 U.S. 324 (1949).¹ In that case, the Court specifically addressed the narrow question of "whether the applicability of the crime/fraud exception must be established

1. The court noted that both the attorney-client privilege and the work-product privilege are subject to the same crime/fraud exception. *In re American Bar Endorsement*, 679 F.2d 1211, 1216 (10th Cir. 1981).

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plaintiff had made a showing insufficient to justify a *Callis* review, the court relied on the Register's explicit statement that he reviewed the documents furnished by the special master based on the strong evidence offered by plaintiff (which is reviewed *Callis*). This court concurs with the Register's implicit determination that plaintiff has made a sufficient showing of interlocking between the CTE and the "special projects" division to justify a *Callis* inspection of the documents. Plaintiff's evidence and the fair inferences arise from the purpose and role of the "special projects" division undercuts defendants' public representations concerning the CTE independence and leads this court to conclude, as did the Register Judge, that a *Callis* inspection of the disclosed documents is likely to yield evidence of the exception's applicability.

Moreover, defendants insist that the Register did not review the documents *Callis* (Def. Brief at 10 n.2), and defendants do not appeal from the Register Judge's order, a necessary consequence the implicit conclusion that a *Callis* review is warranted. In addition to the court's own conviction that a *Callis* review is justified, a *Callis* review by this court would seem to be required if the court is to properly address whether the Register's error, which was based on his own *Callis* inspection, was clearly erroneous. Accordingly, this court did review selected documents *Callis*. The remaining question is whether the Register's conclusion that the

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crime/fraud exception could not be applied in this case and clearly affirmed or contrary to law.

The Legal Standard for Application of the Crime/Fraud Exception

The Supreme Court specifically clarified that this only concerned the type of evidence which could be used to prove the applicability of the crime/fraud exception and not the amount of evidence necessary to justify the exception. 491 U.S. at 323-24. Nevertheless, the Court did note by way of background:

The attorney-client privilege must necessarily protect the confidentiality of communications, not the reasons for that protection or the confidentiality of one client and attorney communication to the former functioning of our adversary system of justice. . . . [The] goal of adversary litigation is to identify and resolve disputes and direct them not to the commission of a fraud or crime. CHICKLE & SULLIVAN, 117 S.Ct. 1211, 1214 (1997).

Id. at 323-24. The case law is clear as to when the crime/fraud exception applies:

In deciding whether the crime/fraud exception applies to a communication between a lawyer and his client, courts apply a two part test. First, there must be a crime (a felony or misdemeanor) which the client was engaged in criminal or fraudulent conduct to support the advice

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the Third Circuit has yet to address the quantum of proof issues directly, the court has used strong language suggestive of its support of our belief in the crime/fraud exception.

[I]nasmuch as the privilege protects the search for truth and justice, its benefits are, at best, "limited and qualitative." It must be strictly confined within the narrowest possible limits consistent with the logic of its principles.

604 F.2d at 482-83 (citations omitted). In cases such as In re Estate of [redacted], 679 F.2d 1211, 1216 (2d Cir. 1982), the Third Circuit has referred to and incorporated the requirement that the party seeking discovery seek a "prima facie" showing of crime or fraud, but the circuit has not depended on what a "prima facie" showing actually means. The Third Circuit has cited on Eighth Circuit crime/fraud cases with approval, but the Eighth Circuit has also failed to provide any more evidence other than requiring "prima facie" evidence, without further elaboration. See In re Estate of [redacted], 604 F.2d at 802, citing In re [redacted], 560 F.2d 326, 329 (8th Cir. 1977).

Other Courts of Appeals have attempted to elaborate on the standard of prima facie evidence in the crime/fraud context. For instance, the court of appeals for the District of Columbia has described prima facie evidence as evidence which, if believed, would establish fraud. In re Estate of [redacted] (II), 704 F.2d 203, 209 (D.C. Cir. 1983). The Fifth Circuit adopted the definition of prima facie evidence contained in Black's Law Dictionary: "[evidence] such as will prevail until contradicted

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of counsel, that he was planning such conduct when he consulted the lawyer of counsel, or that he committed a crime or fraud in reliance on the lawyer's advice. . . . [I]n such cases, there must be a showing that the attorney's assistance was obtained in furtherance of the criminal or fraudulent activity of one directly related to the

In re Estate of [redacted], 642 F.2d 1221, 1224 (11th Cir. 1980) (citations omitted); See also In re Estate of [redacted], 847 F.2d 1222, 1224, 1225 (9th Cir. 1988) (11th Cir. 1987), 743 F.2d 1222, 1224, 1225 (9th Cir. 1984) (11th Cir. 1987), 743 F.2d 1222, 1224, 1225 (9th Cir. 1984).

However, Supreme Court case law provides little indication of the quantum of proof necessary to defeat the privilege, other than Chickie & Sullivan's minimal, ambiguous statement: "To drive the privilege away, there must be 'some' evidence that it has been founded in fact." Chickie & Sullivan, 117 S.Ct. 1211, 1214 (1997). Nevertheless, it is firmly established that "[i]n determining whether the exception is applicable, the attorney-client privilege and the privilege may be waived even if the lawyer is otherwise innocent." In re Estate of [redacted], 604 F.2d 796, 802 (2d Cir. 1979) (citing Chickie & Sullivan, 117 S.Ct. 1211, 1214 (1997)).

Aside from Chickie & Sullivan, the court must look to various Courts of Appeals for further application of the quantum of proof necessary to apply the crime/fraud exception. Although

U. S. 117 S.Ct. 1211, 1214 (1997) (citing Chickie & Sullivan, 117 S.Ct. 1211, 1214 (1997)).

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and overruled by other evidence In re [redacted], 679 F.2d 1211, 1216 (2d Cir. 1982). In In re [redacted], 679 F.2d 1211, 1216 (2d Cir. 1982), the Sixth Circuit disagreed with the Fifth Circuit and followed the Second Circuit's standard, which is that prima facie evidence of crime/fraud must prove "probable cause that local department has used . . . for purposes other than would and providing legal advice." In re [redacted], 679 F.2d 441-42 (2d Cir. 1982). However, the Second Circuit has also clarified its use of the term "probable cause" and stated that there is no difference between "probable cause" and the "prima facie showing" required by other circuit courts: "Both require that a prudent person have a reasonable basis to suspect the perpetration or attempted perpetration of a crime or fraud, a test the communications were in furtherance thereof." In re [redacted], 679 F.2d 1211, 1216 (2d Cir. 1982). See also Id. ("The frequent nature of the subjective test as established definitively; there need only be presented a reasonable basis for believing that the objective was [fraudulent]").

None of these proposed variations are binding on court. However, all of these proposed standards amount to the same basic proposition — the party seeking discovery presented evidence which, if believed by the factfinder, supports plaintiff's theory of fraud? [Plaintiff need not prove the fraud itself at this point, since the evidence in support

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the theory, as well as defendants' conduct, have yet to be evaluated by the trier-of-fact. The court is uncomfortable applying the general *Daubert* standard as explained by the various courts of appeal, since the court concludes that the evidence overwhelmingly favors applying the *Daubert* exception in this case, so much so that the court must find the Register's Judge's omission to the contrary clearly erroneous.

The Register's Omission to the Contrary is Not

Plaintiff argues that Register's Judge's ruling was "contrary to law" because of the Register's simple citation to *Daubert*. Because *Daubert* specifically concerned another court's decision, the disputed document is *Daubert* (as opposed to how much evidence is required to apply the *Daubert* exception), plaintiff argues that the Register's citation was not on point and that therefore, the Register must have applied an incorrect legal standard in his review of the evidence. However, *Daubert* is the only major recent case to discuss the general parameters and purpose of the *Daubert* exception, and it is clear to the court that the Register referred to *Daubert* generally. The court concludes that the Register's ruling was

7. Defendants correctly contend that plaintiff cannot invoke the *Daubert* exception to the Register's ruling because the Register's failure to consider all the evidence or the possibility that his ruling was clearly erroneous, since the letter-writer did state that the Register had "reviewed and considered" all of the parties' submissions.

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Defendants' contention that plaintiff cannot invoke the *Daubert* exception to the Register's ruling because the Register's failure to consider all the evidence or the possibility that his ruling was clearly erroneous, since the letter-writer did state that the Register had "reviewed and considered" all of the parties' submissions.

Pil. Brief at 20-21 (emphasis in original).

In support of this theory, plaintiff relies upon the evidence presented at the *Daubert* trial (which this court examined in its opinion denying the Register's motion for a directed verdict) and upon various CTR documents which plaintiff has already reviewed in discovery. Specifically, plaintiff contends that there is ample and overwhelmingly persuasive evidence that: (1) the cigarette manufacturers concealed and knew of the serious health risks arising from cigarette smoking; (2) despite the tobacco industry's knowledge

8. Some of defendants' own documents which plaintiff seeks in support of this point are those which the court considers persuasive evidence over a 1981 memo from Arthur S. Little concerning the "special projects" in cigarette smoking (Pil. Ex. 611) & a 1984 public relations internal memorandum concerning potential "special projects" (Pil. Ex. 612) & defendant's 1984 report concerning the "special projects" in cigarette smoking and disease, and listing particular emphasis in cigarette smoke identification as carcinogens (Pil. Ex. 613) & a 1984 letter-writer letter concerning the possibility of the "special projects" in cigarette smoking (Pil. Ex. 614).

Contrary to defendants' contention, documents which provide the 1984 establishment of the "special projects" division are relevant to plaintiff's *Daubert* allegations (continued....)

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not contrary to law on the basis of the citation to *Daubert*. Therefore, the only question disputed on this appeal is a factual one: Has plaintiff made a sufficient evidentiary showing that justified application of the *Daubert* exception to the disputed CTR "special projects" documents, and was the Register's omission to the contrary clearly erroneous?

The Register's Omission to the Contrary is Not

As described at length *infra*, plaintiff's theory is the application of the *Daubert* exception is grounded on a undisputed fact that the cigarette industry overrode the CTR as "independent" research only in order to gain the public's confidence that CTR-sponsored research was not manipulated, or at the same time, defendants coordinated research between the CTR and the "special projects" program. Plaintiff contends that existence and purpose of CTR's "special projects" is *Daubert* evidence that the tobacco industry used the CTR and the "special projects" program in order to protect the industry's trust as public. Plaintiff argues that

9. Apparently, defendants argued to the Register that plaintiff was prejudiced from the disputed discovery by virtue of the promotion decision. However, defendants have not shown that argument on this appeal, especially in connection to plaintiff's argument that the promotion decision was not off or far but that plaintiff's discovery and attempt to discover what the CTR did at 7th. In addition, plaintiff argues — and defendants do not dispute — that as to *Daubert*, the promoter decision does not preclude discovery of certain documents that might be obtainable as evidence on the *Daubert* question. *Id.* at 11.

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to the contrary, defendants mounted a major public relations effort to create doubt in the public's mind as to the honest cigarette smoking; and (3) the CTR "special projects" program sponsored research supportive of the manufacturers' litigation strategies which was used in conjunction with the manufacturers' public relations campaign, thereby limiting the corrected independence and objectivity of the CTR. Thus, in addition to the fraudulent presentation of the CTR (the "cover-up"), plaintiff further argues that the cigarette manufacturers' use of the CTR "special projects" program for purposes of their litigation strategies was intimately inter-connected with the manufacturers' public relations campaign to perpetuate the alleged public fraud that cigarette smoking was not harmful.

The first two propositions — that cigarette manufacturers knew of the dangers of smoking but sought to create public doubt as to that fact — were previously at issue in the *Daubert* trial. However, plaintiff's current application to

9. (continued) involving "special projects." Plaintiff must establish defendants' general concealment of the CTR in order to lay the foundation for her theory of fraud with respect to the "special projects" division.

10. See evidence cited at Pil. Brief, 16-18, 19-23 and Pil. Exs. 617-618 regarding public statements by the CTR and by defendants' public relations (Pil. Ex. 619). Plaintiff argues that the "special projects" in cigarette smoking and disease, and listing particular emphasis in cigarette smoke identification as carcinogens (Pil. Ex. 613) & a 1984 letter-writer letter concerning the possibility of the "special projects" in cigarette smoking (Pil. Ex. 614).

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Exhibit 1 - (Continued) at 22, and 1 - (Continued) at 23.
Plaintiff's claim of CTR manipulation through the planning of relevant projects is further supported by the notes of the September 18, 1971 Committee of General Counsel, transmitted via a September 18, 1971 letter from Webster & Sheffield, which states:

Stevens: "I need to know what the historical reasons were for the difference between the criteria for lawyers' special projects and CTR special projects." . . .

Jones: "When we started the CTR special projects, the idea was that the scientific director of CTR would review a project. If he liked it, it was a CTR special project. If he did not like it, then it became a lawyer's special project."

Stevens: "Is that offense to scientific advancement to go, but not to CTR?"

Jones: "With Soloborger, we were afraid of discovery for FTC and Avisa, so wanted to protect it under the lawyers. We did not want it out in the open."

In this court's opinion, an omission could be more damning. These omissions explicitly acknowledge that the supposedly "Independent" scientific director of CTR concealed research into "special projects" for defendants' litigation efforts. But even more disturbing is defendants' announced practice of using the "special projects" division in order to shield damaging research results from the public and the FTC. A document captioned "Notes from the September 18, 1971 Meeting of Company Counsel and Ad Hoc Committee Members" is even more explicit. Page one of the "Notes" states as follows:

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operational scientists. . . . The staff at CTR also seemed to be more lax about being with a skeptical view.

This comment pertains not only to the special projects division but also to defendants' intentional manipulation of the CTR as a whole.

Exhibit 1 - (Continued) at 24.
The court is further convinced that the crime/fraud exception applies in this case given certain comments which could be construed as "admissions" by defendants of the fraudulent use of the CTR. A December 17, 1970 memorandum from E.S. Sullivan to the CTR file regarding a November 18, 1970 meeting in New York contains the following comments:

As a means of information, Bill Shinn described the history, particularly in relation to the CTR. CTR began as an organization called ~~Public Interest Research Group (PIRG)~~ in 1964. That was the first statistical comparison (which) leading to discovery were found at the industry attention began and the symposium reports were issued. ~~CTR has become the legal arm of the industry and the only organization which has access to such information. CTR has become the legal arm of the industry and the only organization which has access to such information. The public interest research group is a legal arm of the industry and the only organization which has access to such information.~~

Bill Shinn feels that "special projects" are the best way that money are spent. ~~SHINN BELIEVES THAT SPECIAL PROJECTS ARE THE BEST WAY THAT MONEY ARE SPENT.~~ However, there are times when CTR has been reluctant to serve in that capacity. . . .

Getting away from the historical story, Bill Shinn mentioned that the "public relations" view of CTR must be considered and mentioned. . . . A very interesting point, made by Bill Shinn, is the opposition's, "the

E.S. Difference between CTR and Special Four (lawyers' projects). Director of CTR reviews special projects - if project was broken for CTR, use Special Four. Also, if there are very serious cases, send the lawyers' presentation. Also, CTR's past director, Bill Soloborger, didn't think more of him's work; Special Four financed his and he is now published. Also, mentioned research that was done during the FTC investigation was done through Special Four because of possibility that CTR would be embarrassed. Also, Joe Jones' current chief of counsel effect Jones gave in 1970-1971 is a full CTR project - Special Four gave initial support.

It is omissions such as this which cause this court to find the Register's error below clearly erroneous. Such clear intentional abuse of the attorney-client and work-product privileges cannot be tolerated and certainly cannot withstand plaintiff's crime/fraud contention in this case.

Exhibit 1 - (Continued) at 25.
However, the documents as to which defendants' privileges reveal defendants' influence over the CTR support plaintiff's claim of fraudulent overrepresentation of the CTR as Independent and objective body. The withheld documents include reports such as the November 4, 1970 memorandum from Donald J. regarding the Industry Research Committee meeting of October 1970, in Washington, Kentucky, which states:

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After some further discussion, Janet and Arnie became convinced American Tobacco Company's view that CTR must be maintained but needed new people. It must be more institutionally oriented. They felt that CTR must look at what is happening and what others are doing to see what questions can be raised, etc. The program must be steady, slow and conservative. They must find

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means to proceed with regard to smoking and disease. . . . It is extremely important that the industry continue to fund CTR. ~~SHINN BELIEVES THAT SPECIAL PROJECTS ARE THE BEST WAY THAT MONEY ARE SPENT.~~ It is interesting that this proposal by Shinn is consistent in line with the thinking on how planned to present to the Committee later on in the day. (Documents omitted).

Aside from the omissions and intentional manipulation by defendants of the CTR as a public relations tool rather than an independent scientific research body, defendants' use "omissions" that to CTR is an industry "shield" and a "front" for "special project" challenges defendants' correct representations that the two are indeed separate.

Given plaintiff's theories of fraud, which, if held by a jury based on the evidence presented, would give rise to liability, often on an *in rem* review of these selected documents the court is convinced that the only possible conclusion is on the crime/fraud exception applies to these documents. The court finds that there is *clear and convincing* evidence that defendants were engaged in an ongoing fraud, and that defendants obtained attorney assistance in furtherance of that fraud through the use of the special projects division. Accordingly, the court finds that the Register's Judge's omission to the contrary was clearly erroneous.

apply the crime/fraud exception under the third federal proposition - i.e., that the "special projects" program was and is an integral part of the CTR public relations front, which is in turn a part of defendants' larger fraud to deceive consumers about the link between smoking and disease.¹¹

With respect to the first two factors - whether defendants knew of the hazards of smoking and used the CTR for fraud - defendants argue that plaintiff cannot rely on this court's *Climoline* directed verdict opinion because in that context, the court did not review the evidence under the stricter standard necessary for purposes of proving the applicability of the crime/fraud exception.

Defendants are correct. This court's directed verdict opinion in *Climoline* does not on its face contain the conclusion that the same facts support application of the crime/fraud exception. However, as a matter of fact, the court finds for purposes of this appeal that plaintiff has presented strong evidence that defendants knew of the health risks implicated by cigarettes, yet funded the CTR for the express purpose of placing smog in the public's mind as to those health risks. The court bases this conclusion on this court's own familiarity with the evidence adduced at the *Climoline* trial discussed in the directed verdict opinion. See 443 F. Supp. at

11. Indeed, the jury in *Climoline* might well have found otherwise on plaintiff's fraud and conspiracy claims had it known of these added facts regarding the use of the CTR.

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"disguised off" into "special projects" promoted against disclosure and the claims of privilege. Strongly implies that the CTR "special projects" division was an integral part of the CTR's general program of sponsoring and reporting scientific research. However, during the special projects litigation oriented research with the CTR directly counters defendants' representations that CTR published research was independently selected and analyzed. According to defendants themselves, the attorney involvement in the special projects program included promoting and monitoring research consistent with defendants' litigation interests. Such consistency of special projects with CTR research directly implicates the special projects program in the alleged ongoing public fraud for which this court has found *prima facie* evidence.

But in addition to the evidence and factual inferences already proffered by plaintiff, the most persuasive evidence prompting this court to apply the crime/fraud exception and to reverse the magistrate's order as clearly erroneous comes from the disputed documents themselves. This court's own *in situ* inspection of selected documents has provided the most explicit evidence that defendants used the special projects program to further the alleged ongoing fraud and deception surrounding the advertised function and operation of the CTR. Even more disturbing, the documents indicate that defendants specifically aimed the attorney-client privilege in their efforts to

1000-02," as well as all of the evidence presented by plaintiff on this appeal. However, on this appeal, the key issue before this court involves not claim and evidence underlined in *Climoline*; whether plaintiff has made a *prima facie* showing, linking the "special projects" program to the alleged public relations front on the public. Defendants contend:

It is not enough for plaintiff merely to allege that CTR was used for fraudulent purposes, and then conclude without more that "some" attorney involvement in CTR was in furtherance of that fraud and not subject to the privilege. Fed. R. Civ. P. 37(b)(2)(D) is explicit. Plaintiff must provide evidence that *these* communications - communications, not the *any* great program but those concrete and distinct communications - CTR special projects funded through the CTR communications department, or CTR in furtherance of the alleged crime or fraud.

Plaintiff adduced no evidence at all to show that *these* communications concerning CTR Special Projects were in furtherance of any improper activity.

Def. Brief at 11-13.

In the court's opinion, the formal inferences arise from the appropriation of the "special projects" program and its avowed purpose of generating research for use in defendants' litigation is highly suggestive of the public fraud which plaintiff alleges. The fact that objective research was

12. The court previously relied on the evidence adduced during course of the *Climoline* trial. The court did not conduct a separate crime/fraud hearing in the *Climoline* case because our hearing would have required essentially the same process as a subpoena of the trial itself. *Trans. at 7, 9, 11, 12, 13, 14*. The court has since heard the evidence presented in *Climoline*, and that this court is in the unique position of being able to evaluate the full scope of evidence concerning plaintiff's crime/fraud contention in the instant case.

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affordate their allegedly fraudulent claims. The court runs none of the most damaging evidence before, particularly the sensitive task of fulfilling the court's duty to support and justify its holding while temporarily preserving the confidentiality of otherwise privileged documents.

In re: American F. S. - 1000000 et al.

The October 6, 1984 minutes of a September 30, 1984 meeting, transmitted via an October 12, 1984 letter from Shook, Barry & Brown, states:

Program reports on special projects by Ad and committee. The special projects identified at 80-100 and 80-100 under the CTR and the TR the responsibility of jurisdiction: 1) "Special projects" of litigation statements regarding cigarette smoking causally responsible to carcinogenic processes;" and 2) "Identification of 'predilections' which have not come true."

This statement supports plaintiff's hypothesis that "special projects" and the CTR in general, as well as the Tobacco Institute, coordinated and concealed their efforts in defendants' public relations campaign to create doubt about the link between smoking and disease. This is exactly the type of evidence which defense counsel cannot avoid the "special projects" activities to plaintiff's fraud claim, giving rise to the crime/fraud exception. The same quote supports plaintiff's theory that the CTR was not an independent research body but rather was (and is) defendants' agent, since research is guided by defendants' in coordination with defendants' litigation and public relations efforts.

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Conclusion

The scope of Special Master Plesco's Report and Recommendation extends to whether documents properly asserted their claim of privilege, including the possibility that the Registering Judge might conclude that the crime/fraud exception applies to those documents. Thus, any possible objections by plaintiff based on plaintiff's claim of crime/fraud are irrelevant with respect to the Report and Recommendation. Neither party has presented any other objections to the Report and Recommendation, which advised that only 4 of the 1000 documents were not subject to privilege claims. Accordingly, the court adopts Special Master Plesco's Report and Recommendation as the order of this court; the six identified documents shall be turned over to plaintiff.

An additional note, the court finds the Registering Judge's order rejecting application of the crime/fraud exception to the remaining documents clearly erroneous. That order is reversed. This court specifically finds that the 5 withheld documents quoted in this opinion are not privileged in their entirety, and that at least those quoted portions of those documents shall be turned over to plaintiff. Having concluded that plaintiff's theory of fraud is supported by clear and convincing evidence, the court has sufficient reason to turn over all of the remaining "potential projector" documents to plaintiff. However, neither the Special Master, the Registering Judge, or

37

William S. Pender, Esq.
OFFICE, Case & Hill
Two Penn Plaza East
Newark, N.J. 07102

Michael J. Vercellotti, Esq.
LAW & COMPANY
100 Hudson Avenue
P.O. Box 229
Newark, N.J. 07104

Donald L. Davis, Esq.
DORR & HENRY
114 South Orange
Newark, N.J. 07102

38

This court has reviewed those documents in order to determine whether the scope of such an order would be too broad and may require defendants to turn over documents which are truly unrelated to plaintiff's claim and which only concern defendants' litigation strategies, etc. Therefore, this court has decided to name a new Special Master, whose task shall be review the remaining documents in order to determine whether documents in subject to the crime/fraud exception. This Special Master shall be named at a later date.

The court shall issue the appropriate orders.

Robert L. ...
D. ...

Date: February 6, 1991

Original to: Clerk, U.S. District Court

Copies to: Joel A. Plesco, U.S. Registering Judge

SYDNEY A. ...
150 ...
Newark, N.J. 07102

Alan S. ...
P.O. Box 2400
Newark, N.J. 07102

Alan L. ...
Newark, N.J. 07102-1003

39

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

FILED
SHARON HAYES, as Administrator
of Probate and Letters
of the Estate of PHILIP P.
HAYES, Plaintiff,
vs.
LITTELL GROUP, INC.,
a Delaware Corporation,
et alia
Defendants.

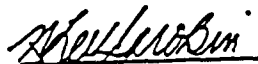
This matter having come before the court upon the plaintiff's appeal from the May 22, 1991 order of Registering Judge Douglas denying plaintiff's argument that the crime/fraud exception to the attorney-client and work-product privileges should be applied to the 1000 documents determined by Special Master Joel Plesco to be privileged; and the court having considered the submissions of the parties and the arguments presented and for the reasons expressed in the accompanying opinion and for good cause shown:

IT IS this 6 day of February, 1991, hereby
ORDERED that Registering Judge Douglas' May 22, 1991
order denying application of the crime/fraud exception to or
thereby is reversed as clearly erroneous; and it is further
ORDERED that the 5 documents referred to on pages
through 26 of the accompanying opinion shall be turned over
to plaintiff; and it is further

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ORDERED that the remaining 1000 documents shall be referred to a Special Master to be named by this court for review of the applicability of the crime/fraud exception to each of the remaining documents; and it is further

ORDERED that the fees of such Special Master shall be paid by the defendants within 10 days of the presentation of a bill for such services.



E. LEE SACKS, U.S.D.J.

402176077

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

MRS. SAMUEL E. ALLGOOD,	§	
INDIVIDUALLY AND AS	§	
INDEPENDENT EXECUTRIX OF	§	
THE ESTATE OF SAMUEL E.	§	
ALLGOOD, MARCUS ALLGOOD,	§	
AND MALCOLM ALLGOOD,	§	
Plaintiffs	§	
vs.	§	C. A. No. H-91-0158
R. J. REYNOLDS TOBACCO	§	
COMPANY, THE AMERICAN	§	
TOBACCO COMPANY, THE	§	
TOBACCO INSTITUTE, INC., AND	§	
THE COUNCIL FOR TOBACCO	§	
RESEARCH - U.S.A., INC.	§	
Defendants	§	

PLAINTIFFS' THIRD REQUEST FOR PRODUCTION TO DEFENDANT
THE AMERICAN TOBACCO COMPANY

TO: Defendant The American Tobacco Company by and through its attorney in charge,
Sam W. Cruse, Jr., Andrews & Kurth, 4200 Texas Commerce Tower, Houston,
Texas 77002.

Pursuant to Rule 26 of the Federal Rules of Civil Procedure, Plaintiffs Mrs. Samuel E. Allgood, individually and as independent executrix of the estate of Samuel E. Allgood, Marcus Allgood, and Malcolm Allgood, request that Defendant The American Tobacco Company produce for inspection and copying by Plaintiffs' counsel, or someone acting under Plaintiffs' counsel's direction and control, the following specified documents.

Time of production: The specified documents are to be produced at 10:00 a.m. on Thursday, May 14, 1992, the inspection and copying to begin then and continue until completed.

Place of production: Kinko's Copies at 9894 Southwest Freeway, Houston, Texas 77051.

402176078

Specification of Documents to be Produced

1. Each and every advertisement for Pall Mall cigarettes that was published or otherwise appeared before the public at any time between December 1, 1947 and February 17, 1987.

Respectfully submitted,

Alden D. Holford

Alden D. Holford
Federal LD. No. 2153
State Bar No. 09834400
7515 Kensico
Houston, Texas 77036
(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day the original of the foregoing request for production was forwarded by certified mail, return receipt requested, to the following counsel of record:

Sam W. Cruse, Jr.
Andrews & Kurth
4200 Texas Commerce Tower
Houston, Texas 77002

and a true copy was forwarded by first class mail to each of the following counsel of record:

Lea F. Courington
Gwinn & Roby
4100 Renaissance Tower
1201 Elm Street
Dallas, Texas 75270

Richard H. Caldwell
Mayor, Day & Caldwell
1900 Republic Bank Center
Houston, Texas 77002

William Key Wilde
Bracewell & Patterson
2900 South Tower Pennzoil Place
Houston, Texas 77002

April 1, 1992

Date

Alden D. Holford

Alden D. Holford

402176080

Specification of Documents to be Produced

1. Each and every record of each and every communication which was transmitted orally, electronically, telephonically, or by hard copy between any defendant herein and any newspaper, magazine, or other publication for public consumption, and which communication concerned the opinion of the United States Supreme Court in Cipollone v. Liggett Group, Inc., et al (No. 90-1038, Decided June 24, 1992).
2. Each and every record of each and every communication which was transmitted orally, electronically, telephonically, or by hard copy between any defendant herein and The Houston Chronicle, which communication concerned the opinion of the United States Supreme Court in Cipollone v. Liggett Group, Inc., et al (No. 90-1038, Decided June 24, 1992).
3. Each and every record of each and every communication which was transmitted orally, electronically, telephonically, or by hard copy between any defendant herein and The Houston Post, which communication concerned the opinion of the United States Supreme Court in Cipollone v. Liggett Group, Inc., et al (No. 90-1038, Decided June 24, 1992).
4. Each and every record of each and every communication which was transmitted orally, electronically, telephonically, or by hard copy between any defendant herein and any publication for public consumption which is distributed in any part of Austin, Brazos, Colorado, Fayette, Ft. Bend, Grimes, Harris, Madison, Montgomery, San Jacinto, Walker, Waller, or Wharton Counties, Texas, and which communication concerned the opinion of the United States Supreme Court in Cipollone v. Liggett Group, Inc., et al (No. 90-1038, Decided June 24, 1992).

Respectfully submitted,

Alden D. Holford

Alden D. Holford
Federal ID. No. 2153
State Bar No. 09834400
7515 Kensico
Houston, Texas 77036
(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day an original of the foregoing request for production was forwarded by certified mail, return receipt requested, to each of the following counsel of record:

Sam W. Cruse, Jr.
Cruse, Scott, Henderson & Allen
Two Houston Center, Suite 1850
909 Fannin
Houston, Texas 77010

CERTIFICATE OF SERVICE

I hereby certify that on this day an original of the foregoing request for production was forwarded by certified mail, return receipt requested, to each of the following counsel of record:

Lea F. Courington
Gwinn & Roby
4100 Renaissance Tower
1201 Elm Street
Dallas, Texas 75270

Sam W. Cruse, Jr.
Cruse, Scott, Henderson & Allen
Two Houston Center, Suite 1850
909 Fannin
Houston, Texas 77010

Richard H. Caldwell
Mayor, Day & Caldwell
1900 Republic Bank Center
Houston, Texas 77002

William Key Wilde
Bracewell & Patterson
2900 South Tower Pennzoil Place
Houston, Texas 77002

July 14, 1992

Date

Alden D. Holford

Alden D. Holford ✓

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RECEIVED
JAN 20 1993

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

MRS. SAMUEL E. ALLGOOD,
INDIVIDUALLY AND AS
INDEPENDENT EXECUTRIX OF
THE ESTATE OF SAMUEL E.
ALLGOOD, MARCUS ALLGOOD,
AND MALCOLM ALLGOOD,
Plaintiffs

vs.

C. A. No. H-91-0158

R. J. REYNOLDS TOBACCO
COMPANY, THE AMERICAN
TOBACCO COMPANY, THE
TOBACCO INSTITUTE, INC., AND
THE COUNCIL FOR TOBACCO
RESEARCH - U.S.A., INC.
Defendants

PLAINTIFFS' FIFTH REQUEST FOR PRODUCTION TO
DEFENDANT THE AMERICAN TOBACCO COMPANY

TO: Defendant The American Tobacco Company by and through its attorney in charge,
Sam W. Cruse, Jr., Cruse, Scott, Henderson & Allen L.L.P., Two Houston Center,
Suite 1850, 909 Fannin, Houston, Texas 77010.

Pursuant to Rule 26 of the Federal Rules of Civil Procedure, Plaintiffs Mrs. Samuel
E. Allgood, individually and as independent executrix of the estate of Samuel E. Allgood,
Marcus Allgood, and Malcolm Allgood, request that Defendant The American Tobacco
Company produce for inspection and copying by Plaintiffs' counsel, or someone acting
under Plaintiffs' counsel's direction and control, the following specified items. In the
following specification, "American Tobacco" refers to The American Tobacco Company.

Time of production: The specified documents are to be produced at 10:00 a.m. on
Thursday, March 4, 1993, the inspection and copying to begin then and continue until
completed.

402176085

Place of production: Kinko's Copies at 9894 Southwest Freeway, Houston, Texas
77051.

Specification of Documents to be Produced

1. Each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, that came into the possession of American Tobacco before January 1, 1935.
2. Each record, memo or other tangible item concerning each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, the substance of which American Tobacco knew about before January 1, 1935.
3. Each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, that came into the possession of American Tobacco after January 1, 1935 and before January 1, 1939.
4. Each record, memo or other tangible item concerning each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, the substance of which American Tobacco knew about after January 1, 1935 and before January 1, 1939.
5. Each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, that came into the possession of American Tobacco after January 1, 1939 and before January 1, 1943.
6. Each record, memo or other tangible item concerning each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, the substance of which American Tobacco knew about after January 1, 1935 and before January 1, 1943.

7. Each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, that came into the possession of American Tobacco after January 1, 1943 and before January 1, 1948.
8. Each record, memo or other tangible item concerning each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, the substance of which American Tobacco knew about after January 1, 1943 and before January 1, 1948.
9. Each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, that came into the possession of American Tobacco after January 1, 1948 and before January 1, 1951.
10. Each record, memo or other tangible item concerning each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, the substance of which American Tobacco knew about after January 1, 1948 and before January 1, 1951.
11. Each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, that came into the possession of American Tobacco after January 1, 1951 and before January 1, 1954.
12. Each record, memo or other tangible item concerning each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, the substance of which American Tobacco knew about after January 1, 1951 and before January 1, 1954.
13. Each medical or scientific research report concerning cigarette smoking and any disease or death, published or unpublished, that came into the possession of American Tobacco after January 1, 1954.
14. Each record, memo or other tangible item concerning each medical or scientific research report concerning cigarette smoking and any disease or death, published

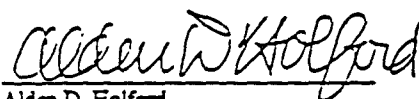
or unpublished, the substance of which American Tobacco knew about after January 1, 1954.

15. Each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, that came into the possession of American Tobacco before January 1, 1935.
16. Each record, memo or other tangible item concerning each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, the substance of which American Tobacco knew about before January 1, 1935.
17. Each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, that came into the possession of American Tobacco after January 1, 1935 and before January 1, 1939.
18. Each record, memo or other tangible item concerning each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, the substance of which American Tobacco knew about after January 1, 1935 and before January 1, 1939.
19. Each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, that came into the possession of American Tobacco after January 1, 1939 and before January 1, 1943.
20. Each record, memo or other tangible item concerning each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, the substance of which American Tobacco knew about after January 1, 1935 and before January 1, 1943.
21. Each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, that came into the possession of American Tobacco after January 1, 1943 and before January 1, 1948.

22. Each record, memo or other tangible item concerning each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, the substance of which American Tobacco knew about after January 1, 1943 and before January 1, 1948.
23. Each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, that came into the possession of American Tobacco after January 1, 1948 and before January 1, 1951.
24. Each record, memo or other tangible item concerning each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, the substance of which American Tobacco knew about after January 1, 1948 and before January 1, 1951.
25. Each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, that came into the possession of American Tobacco after January 1, 1951 and before January 1, 1954.
26. Each record, memo or other tangible item concerning each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, the substance of which American Tobacco knew about after January 1, 1951 and before January 1, 1954.
27. Each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, that came into the possession of American Tobacco after January 1, 1954.
28. Each record, memo or other tangible item concerning each medical or scientific research report concerning the effect of nicotine contained in tobacco smoke, published or unpublished, the substance of which American Tobacco knew about after January 1, 1954.
29. Each medical or scientific research report purportedly evidencing that there is no causal connection between cigarette smoking and all or any disease.

30. Each record, memo or other tangible item concerning each medical or scientific research report purportedly evidencing that there is no causal connection between cigarette smoking and all or any disease, the substance of which American Tobacco ever knew about.
31. Each medical or scientific research report purportedly evidencing that cigarette smoking, or nicotine in cigarette smoke, is not addictive.
32. Each record, memo or other tangible item concerning each medical or scientific research report purportedly evidencing that cigarette smoking, or nicotine in cigarette smoke, is not addictive, the substance of which American Tobacco ever knew about.

Respectfully submitted,



Alden D. Holford
Federal ID. No. 2153
State Bar No. 09834400
7515 Kensico
Houston, Texas 77036
(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day the original of the foregoing request for production has been forwarded by certified mail, return receipt requested, to the following counsel of record:

Sam W. Cruse, Jr.
Cruse, Scott, Henderson & Allen
Two Houston Center, Suite 1850
909 Fannin
Houston, Texas 77010

and a true copy has been forwarded by certified mail, return receipt requested, to each of the following counsel of record:

Lea F. Courington
Gwinn & Roby
4100 Renaissance Tower

Richard H. Caldwell
Mayor, Day & Caldwell
1900 Republic Bank Center
Houston, Texas 77002

William Key Wilde
Bracewell & Patterson
2900 South Tower Pannozil Place
Houston, Texas 77002

JAN. 19, 1993

Date

Alden D. Holford

Alden D. Holford

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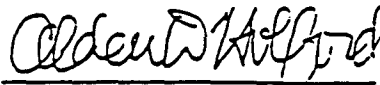
Place of production: Kinko's Copies at 9894 Southwest Freeway, Houston, Texas
77051.

Specification of Documents to be Produced

1. Each and every publication authored by American Tobacco employes(s) or contractor(s) which concerns the effect or purported non-effect of cigarette smoking on human health, or the addictiveness or purported non-addictiveness of nicotine in cigarette smoke.
2. Each and every publication authored by American Tobacco employes(s) or contractor(s) which concerns a cigarette design which is purportedly safer than the cigarettes then on sale.
3. Records of American Tobacco's contributions to The Council for Tobacco Research - U.S.A., Inc., and any of its predecessors, since their inception.
4. Records of American Tobacco's contributions to The Tobacco Institute, Inc., and any of its predecessors, since their inception.
5. All minutes, notes, and any other record of each meeting of American Tobacco's Board of Directors from December 1, 1929, to the present.
6. All minutes, notes, and any other record of each meeting of American Tobacco's Executive Committee from December 1, 1929, to the present.
7. All minutes, notes, and any other record of each meeting of each American Tobacco board, committee, or other group of persons which had management decision power in any area concerning tobacco, from December 1, 1929, to the present.
8. All minutes, notes, or other records of each and every meeting which concerned the origin, creation or publication of "A Frank Statement to Cigarette Smokers."

9. All letters, memos, notes of talks, or other communications concerning the origin, creation, or publication of "A Frank Statement To Cigarette Smokers."

Respectfully submitted,



Alden D. Holford
Federal LD. No. 2153
State Bar No. 09834400
7515 Kensico
Houston, Texas 77036
(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day the original of the foregoing request for production has been forwarded by certified mail, return receipt requested, to the following counsel of record:

Sam W. Cruse, Jr.
Cruse, Scott, Henderson & Allen
Two Houston Center, Suite 1850
909 Fannin
Houston, Texas 77010

and a true copy has been forwarded by certified mail, return receipt requested, to each of the following counsel of record:

Lea F. Cowington
Gwinn & Roby
4100 Renaissance Tower
1201 Elm Street
Dallas, Texas 75270

Richard H. Caldwell
Mayor, Day & Caldwell
1900 Republic Bank Center
Houston, Texas 77002

William Key Wilde
Bracewell & Patterson
2900 South Tower Pennzoil Place
Houston, Texas 77002

JAN. 19, 1993
Date



Alden D. Holford

مفتوحة

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

RECEIVED
APR 8 1993
CRUSE SCOTT HENDERSON
& ALLEN, L.L.P.

MRS. SAMUEL E. ALLGOOD,
INDIVIDUALLY AND AS
INDEPENDENT EXECUTRIX OF
THE ESTATE OF SAMUEL E.
ALLGOOD, MARCUS ALLGOOD,
AND MALCOLM ALLGOOD,
Plaintiffs

vs.

R. J. REYNOLDS TOBACCO
COMPANY, THE AMERICAN
TOBACCO COMPANY, THE
TOBACCO INSTITUTE, INC., AND
THE COUNCIL FOR TOBACCO
RESEARCH - U.S.A., INC.
Defendants

C. A. No. H-91-0158

PLAINTIFFS' SEVENTH REQUEST FOR PRODUCTION TO
DEFENDANT THE AMERICAN TOBACCO COMPANY

TO: Defendant The American Tobacco Company by and through its attorney in charge, Sam W. Cruse, Jr., Cruse, Scott, Henderson & Allen L.L.P., Two Houston Center, Suite 1850, 909 Fannin, Houston, Texas 77010.

Pursuant to Rule 26 of the Federal Rules of Civil Procedure, Plaintiffs Mrs. Samuel E. Allgood, individually and as independent executrix of the estate of Samuel E. Allgood, Marcus Allgood, and Malcolm Allgood, request that Defendant The American Tobacco Company produce for inspection and copying by Plaintiffs' counsel, or someone acting under Plaintiffs' counsel's direction and control, the following specified items.

Time of production: The specified documents are to be produced at 10:00 a.m. on Thursday, May 20, 1993, the inspection and copying to begin then and continue until completed.

Place of production: Plaintiffs' counsel's office at 7515 Kensico, 77036.

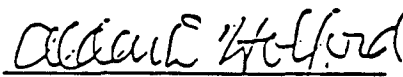
402176096

Specification of Documents to be Produced

1. a. Each and every statement for fees and/or disbursements received by The American Tobacco Company from its attorneys in this case, and
- b. each and every check and other means of payment paid by The American Tobacco Company to its attorneys in this case,

which statements and checks and other means of payment support The American Tobacco Company's claim for attorneys' fees in this case.

Respectfully submitted,



Alden D. Holford
Federal I.D. No. 2153
State Bar No. 09834400
7515 Kessico
Houston, Texas 77036
(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day the original of the foregoing request for production has been forwarded by certified mail, return receipt requested, to the following counsel of record:

Sam W. Cruse, Jr.
Cruse, Scott, Henderson & Allen
Two Houston Center, Suite 1850
909 Fannin
Houston, Texas 77010

and a true copy has been forwarded by first class mail to each of the following counsel of record:

Lea F. Courington
Gwinn & Roby
4100 Renaissance Tower
1201 Elm Street
Dallas, Texas 75270

Richard H. Caldwell
Mayor, Day & Caldwell
1900 Republic Bank Center
Houston, Texas 77002

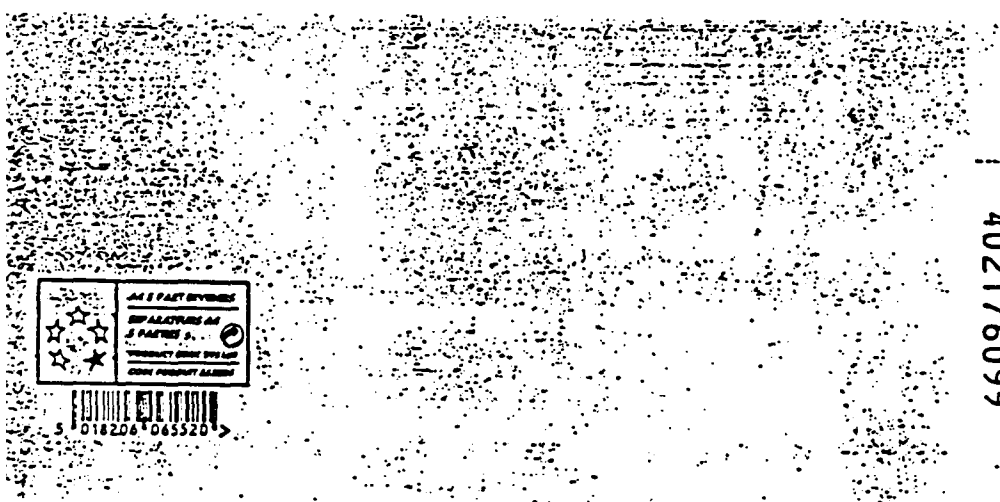
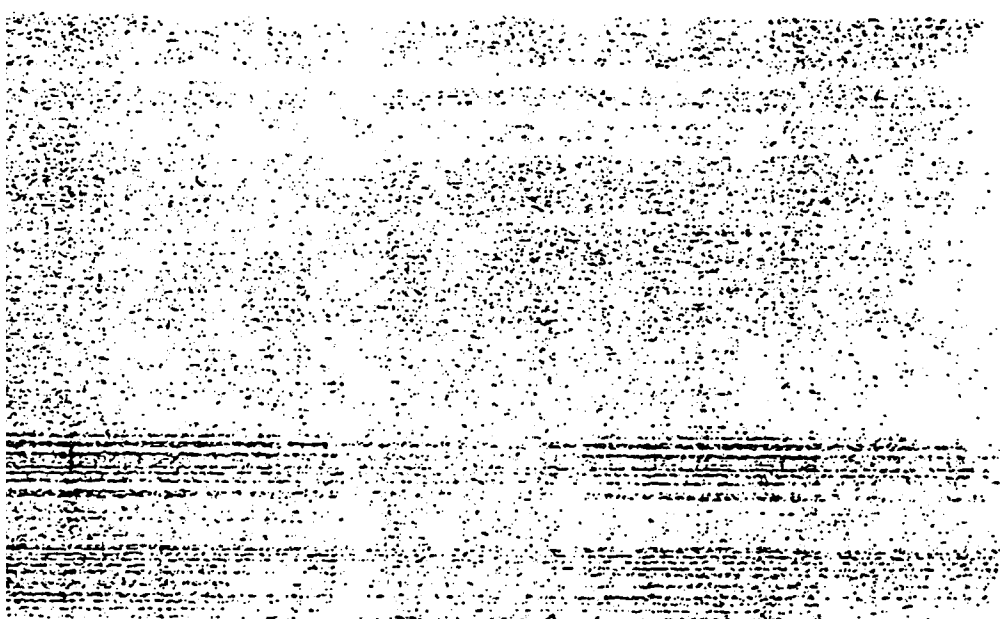
William Key Wilde
Bracewell & Pamerson
2900 South Tower Pennzoil Place
Houston, Texas 77002

APRIL 7, 1993

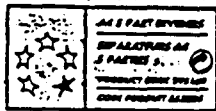
Date

Alden D. Holford

Alden D. Holford



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Specification of Documents to be Produced

1. All volumes of the deposition of Jeffrey E. Harris, M.D., Ph.D., and all exhibits thereto, taken in *Dewey v. R. J. Reynolds et al*, Docket No. L071733-81 in the Superior Court for Bergen County, New Jersey.

2. Report of Jeffrey E. Harris, M.D., Ph.D., dated January 17, 1986 and titled Expert's Report on Risk-Utility Analysis, and served and/or filed in *Dewey v. R. J. Reynolds et al*, Docket No. L071733-81 in the Superior Court for Bergen County, New Jersey.

3. All volumes of the deposition of Jeffrey E. Harris, M.D., Ph.D., and all exhibits thereto, taken in *Cipollone v. Liggett Group, Inc., et al*, Civil Action No. 83-2864 SA in the United States District Court for the District of New Jersey.

4. All volumes of the trial transcript in *Cipollone v. Liggett Group, Inc., et al*, Civil Action No. 83-2864 SA in the United States District Court for the District of New Jersey, which contain all of the trial testimony of Jeffrey E. Harris, M.D., Ph.D., and all trial exhibits admitted on the basis of Dr. Harris' testimony.

5. Report of Jeffrey E. Harris, M.D., Ph.D., dated August 1, 1985 and titled Expert's Report on the State of the Art, and served and/or filed in *Cipollone v. Liggett Group, Inc., et al*, Civil Action No. 83-2864 SA in the United States District Court for the District of New Jersey.

6. Report of Jeffrey E. Harris, M.D., Ph.D., dated July 28, 1987 and titled Expert's Response to Request for Additional Information by Defendant Philip Morris Incorporated.

and served and/or filed in *Cipollone v. Liggett Group, Inc., et al*, Civil Action No. 83-2364
SA in the United States District Court for the District of New Jersey.

Respectfully submitted,



Alden D. Holford
Federal ID. No. 2153
State Bar No. 09834400
7515 Kenosco
Houston, Texas 77036
(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day a true copy of the foregoing request for production
has been forwarded by hand delivery to the following counsel of record:

Sam W. Cruse, Jr.
Cruse, Scott, Henderson & Allen
Two Houston Center, Suite 1850
909 Fannin
Houston, Texas 77010

Richard H. Caldwell
Mayor, Day & Caldwell
1900 Republic Bank Center
Houston, Texas 77002

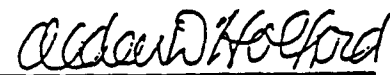
William Key Wilde
Bracewell & Patterson
2900 South Tower Peanzoil Place
Houston, Texas 77002

and a true copy forwarded to the following counsel of record by certified mail, return
receipt requested:

Lea F. Courington
Gwinn & Roby
4100 Renaissance Tower
1201 Elm Street
Dallas, Texas 75270

June 1, 1993

Date



Alden D. Holford

June 1, 1993

Carol Berryman
KING & SPALDING
191 Peachtree Street
Atlanta, GA 30303-1763

RE: Allgood v. The American Tobacco Company

Dear Carol,

Enclosed please find a copy of Plaintiffs' Designation of Expert Witnesses and Plaintiffs' Eighth Request for Production to Defendant-American Tobacco.

Very truly yours,

Monica Decker, CLA
Certified Legal Assistant

Enclosures

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AUG 24 1993

IN THE UNITED STATES DISTRICT COURT
 FOR THE SOUTHERN DISTRICT OF TEXAS
 HOUSTON DIVISION

CRUSE SCOTT HENDERSON
 & ALLEN, L.L.P.

MRS. SAMUEL E. ALLGOOD,
 INDIVIDUALLY AND AS
 INDEPENDENT EXECUTRIX OF
 THE ESTATE OF SAMUEL E.
 ALLGOOD, MARCUS ALLGOOD,
 AND MALCOLM ALLGOOD,
 Plaintiffs

vs:

C. A. No. H-91-0158

R. J. REYNOLDS TOBACCO
 COMPANY, THE AMERICAN
 TOBACCO COMPANY, THE
 TOBACCO INSTITUTE, INC., AND
 THE COUNCIL FOR TOBACCO
 RESEARCH - U.S.A., INC.
 Defendants

PLAINTIFFS' NINTH REQUEST FOR PRODUCTION TO
 DEFENDANT THE AMERICAN TOBACCO COMPANY

TO: Defendant The American Tobacco Company by and through its attorney in charge,
 Sam W. Cruse, Jr., Cruse, Scott, Henderson & Allen L.L.P., Two Houston Center,
 Suite 1850, 909 Fannin, Houston, Texas 77010.

Pursuant to Rule 26 of the Federal Rules of Civil Procedure, Plaintiffs Mrs. Samuel E. Allgood, individually and as independent executrix of the estate of Samuel E. Allgood, Marcus Allgood, and Malcolm Allgood, request that Defendant The American Tobacco Company produce for inspection and copying by Plaintiffs' counsel, or someone acting under Plaintiffs' counsel's direction and control, the following specified items.

Time of production: The specified documents are to be produced at 10:00 a.m. on Wednesday, September 29, 1993, the inspection and copying to begin then and continue until completed.

Place of production: Kinko's on the Southwest Freeway, or, if Defendant's Counsel permits and copying can be done at Kinko's rates, Defendant's counsel's offices.

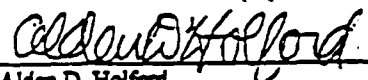
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Specification of Documents to be Produced

1. Each and every document and tangible thing related to R. J. Reynolds' Medical Relations Division referenced in the A. G. Clarke October 27, 1942 letter attached hereto as Exhibit A, whether created or generated before, during, or after the existence of the Medical Relations Division.
2. Each and every document and tangible thing related to each division, committee, or other-named working group of each tobacco company, a function of which group was to gather scientific or medical information relating to smoking and health, and which group functioned on or at any time before December 31, 1950.
3. Records showing the name and the present, or if not known, the last known, location information for each person who was the Director or other-titled leader of any group of the type mentioned in paragraph 2, such location information to include residence address and telephone number, employment address and telephone number, and whether living or deceased.
4. Records showing the name and the present, or if not known, the last known, location information for each person who worked in any group of the type mentioned in paragraph 2, such location information to include residence address and telephone number, employment address and telephone number, and whether living or deceased.
5. Each and every document, whenever created, reflecting a review and/or evaluation of the medical and/or scientific literature existing before December 31, 1950.
6. Each and every survey on the public perception of risks to health of smoking.

Respectfully submitted,



Alden D. Holford
Federal I.D. No. 2153
State Bar No. 09834400
7515 Kensico
Houston, Texas 77036
(713) 772-0977
Attorney-In-Charge for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this day a true copy of the foregoing request for production has been forwarded by certified mail, return receipt requested to the following counsel of record:

Sam W. Cruse, Jr.
Cruse, Scott, Henderson & Allen
Two Houston Center, Suite 1850
909 Fannin
Houston, Texas 77010

Richard H. Caldwell
Mayor, Day & Caldwell
1900 Republic Bank Center
Houston, Texas 77002

and a true copy forwarded to the following counsel of record by first class mail:

Les F. Comington
Gwinn & Roby
4100 Renaissance Tower
1201 Elm Street
Dallas, Texas 75270

William Key Wilde
Bracewell & Patterson
2900 South Tower Pennzoil Place
Houston, Texas 77002

AUGUST 23, 1993
Date

Alden D. Halford
Alden D. Halford

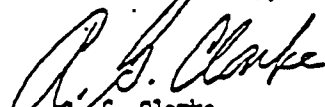
CAMEL CIGARETTES

*Medical Relations Division*ONE PEARSON SQUARE
NEW YORK CITY
October 27, 1942Mr. M. I. Braswell
LAW Department
R. J. Reynolds Tobacco Company
Winston-Salem, North Carolina

Dear Mr. Braswell:

For your information, we are attaching copy of our
letter to Mr. Raymond N. Deebe, dated October 27, 1942.We are also attaching to this letter copy of Dr. Noah
Fabricant's report.

Yours very truly,


G. Clarke
Director

CALLED 3-1010

EXHIBIT A

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Produced by RALPH
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Inc.

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BLA p. 11

NO. 92-CV-0725

RAYE N. BLANCHARD, ET AL. § IN THE DISTRICT COURT OF
 §
V. § GALVESTON COUNTY, TEXAS
 §
BROWN AND WILLIAMSON TOBACCO §
CORPORATION; ET AL § 212TH JUDICIAL DISTRICT

PLAINTIFF'S FIRST SET OF INTERROGATORIES,
REQUESTS FOR ADMISSION,
AND FIRST REQUEST FOR PRODUCTION OF DOCUMENTS

- TO: BROWN AND WILLIAMSON TOBACCO, Defendant, by and through its attorney of record, Russell Serafin, Vinson & Elkins, 2500 First City Tower, 1001 Fannin, Houston, Texas 77002-6760
- TO: LIGGETT GROUP, F/E/A LIGGETT AND MYERS TOBACCO COMPANY, Defendant, by and through its attorney of record, Patrick Reilly, 622 - Third Street, Suite 208, Galveston, Texas 77550
- TO: LORILLARD TOBACCO COMPANY, Defendant, by and through its attorney of record, Defendant, Gordon E. Davenport, Jr., Davenport Law Firm, 1480 East Highway Six, Alvin, Texas 77551
- TO: PHILLIP MORRIS, INC., Defendant, by and through its attorney of record, S. R. Lewis, Jr., Mills, Shirely, Eckel & Bassett, P. O. Box 1943, 2228 Mechanic, 400 Washing
- TO: R. J. REYNOLDS TOBACCO COMPANY, Defendant, by and through its attorney of record, Norma Venso, 2102 Avenue N, Galveston, Texas 77550
- TO: THE AMERICAN TOBACCO COMPANY, Defendant, by and through its attorney of record, Roger Ezel, P. O. Box 2321, Galveston, Texas 77553
- TO: THE COUNCIL OF TOBACCO RESEARCH, U.S.A. INC. (CTR), Defendant, by and through its attorney of record William Key Wilde, Bracewell & Patterson, South Tower, Pennzoil Place, 711 Louisiana, Suite 2900, Houston, Texas 77002-2781
- TO: THE TOBACCO INSTITUTE, INC. (TI), Defendant, by and through its attorney of record, Gordon E. Davenport, Jr., Davenport Law Firm, 1480 East Highway Six, Alvin, Texas 77551

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RAYE N. BLANCHARD, Plaintiff, in accordance with the terms and provisions of Rules 166b, 167, 168, and 169 of the Texas Rules of Civil Procedure, files Plaintiff's First Set of Interrogatories, Requests for Admission, and First Request for Production of Documents. Defendants are requested to make responses to the requests for admission, first set of interrogatories, and produce the requested documents. Responses and documents requested should be made and delivered to the law firm of Tyler & Das, P.C., within thirty (30) days after service of these requests.

I
Requests for Admissions of Fact
and Genuineness of Documents

Please take notice that included are numerous 'Requests for Admissions of Fact and Genuineness of Documents' which are served upon you pursuant to Texas Rule of Civil Procedure 169. The facts and genuineness of documents, of which admission of fact are requested, are for purposes of the pending action only, are within the scope of Rule 166b, and relate to statements or opinions of fact or the application of law to fact, including the genuineness of any documents described in request.

Copies of the documents are being served with request, unless they have been or are otherwise furnished or made available for inspection and copying. If the entity to whom this request is directed is represented by an attorney of record, service of these requests is made on the attorney unless service on the party is ordered by the Court.

A true copy of these Requests for Admission will be filed promptly in the Clerk's office by the party making requests.

In addition, each matter of which an admission is requested is separately set forth. Those matters are admitted without the necessity of a Court order, unless, within the time specified in the Rules of Civil Procedure, the entity to whom this request is directed serves

upon the party requesting the admission a written answer or objection addressed to the matter, and signed by the party or her/his attorney. Any such answer must specifically deny the matter or set forth in detail the reason that the answering party cannot truthfully admit or deny the matter. (NOTE: Verification of your response may be required, and if such is the case, the proponent of these requests insists upon the same. *Reyes v. International Metals & Supply Co.*, 777 S.W.2d 622, 624 (Tex. App.-Houston [1st Dist.] 1984, no writ).) A denial shall fairly meet the substance of the requested admission, and when good faith requires that a party qualify her/his answer or deny only a part of the matter in which an admission is requested, s/he shall specify so much of it as is true and qualify or deny the remainder.

An answering party may not give lack of information or knowledge as a reason for failure to admit or deny unless s/he states that s/he has made reasonable inquiry and that the information known or easily obtainable by her/him is insufficient to enable her/him to deny. Any matter admitted under this Rule is conclusively established as to the party making the admission.

II Interrogatories

Please take notice that included are numerous interrogatories. Such Interrogatories are propounded upon you pursuant to Texas Rule of Civil Procedure 168. Service of the Interrogatories is being made on the Defendants pursuant to Rule 168(4).

The party upon whom the following interrogatories are served must serve a copy of the answers on the party submitting the interrogatories within the time specified by the party serving the interrogatories, unless the Court, on motion and notice for good cause shown, enlarges or shortens the time. The time designated by the party propounding these

interrogatories for the filing of an answer thereto is thirty (30) days after service, unless an agreement to the contrary, in compliance with Rule 11 of the Texas Rules of Civil Procedure is entered into by the parties to this request, or their attorneys. These interrogatories must be answered separately and fully in writing under oath. Answers to interrogatories must be preceded by the questions or interrogatory to which the answer pertains. The answer must be signed and verified by the person making them and the provisions of Texas Rules of Civil Procedure 14 do not apply to such answers.

True copies of these are being served on all parties or their attorneys and a true copy will be promptly filed in the Clerk's office together with proof of service.

III

Request for Discovery and Production of Documents and Things for Inspection

Pursuant to Rule 167, you are requested to produce and permit the party making the request, or someone acting on her/his behalf, to inspect, sample, test, photograph, and/or copy any designated documents or tangible things which constitute or contain matters within the scope of Rule 165b which are in the possession, custody or control of the party upon whom the request is served.

The request describes the items to be inspected, either by individual item or by category, with reasonable particularity. An agreement in compliance with Texas Rule of Civil Procedure 11 is anticipated with regard to the time, place and manner for making the inspection and performing of related acts. Failing such agreement, the time, place, and manner for making the inspection and performing the related acts is as follows: The offices of Taylor & Cire, P.C., Penthouse, One Allen Center, Houston, Texas 77002, thirty (30) days after service at 10:00 a.m. and continuing thereafter until completed.

The party upon whom this request is served must serve a written response which must state, with respect to each item or category of items, that inspection or other requested action will be permitted as requested, and s/he must thereafter comply with the request, except only to the extent that s/he makes objections in writing to particular items, or categories of items, stating specific reasons why such discovery should not be allowed. All parties to this action (or their attorney) are being served with copies of this request.

IV.
General Terms and Definitions

The following definitions apply to Plaintiff's Request for Admissions, Interrogatories, and Request for Production.

A. **Scope of procedure:** The following discovery requests extend to all discoverable information allowed by the Texas Rules of Civil Procedure or Civil Evidence.

B. **Exemptions:** The scope of procedure does not extend to any information privileged by law or made exempt from discovery by the Rules of Civil Procedure or Civil Evidence.

C. **"Documents and tangible things"** includes papers, books, models, data compilations, accounts, drawings, charts, photographs, electronic or videotape recordings, and any other data compilations from which information can be obtained and translated, if necessary, into reasonably usable form, and any other tangible things which constitute or contain matters relevant to any claim or defense of Plaintiff, Respondent, or any other party.

D. **"Identity and location,"** as such phrase relates to a person, entity, or party, means the name, address, and telephone number of such person, entity, or party.

E. **"Identity and location,"** as such phrase relates to documents and tangible things, means the identity and location of the person, entity or party which has possession,

custody or control thereof, and a declaration of the description, nature, condition, and contents thereof.

F. "Description," as such term relates to a lawsuit, means to describe the month and year such lawsuit began; the county or city, and state in which such proceeding took place; the cause number; the name of at least one party of record in such proceeding adverse to the position taken by you or by the party with whom you were associated; the nature thereof, such as "personal injury"; the outcome of such proceeding; and the character of your participation therein, such as "plaintiff" or "witness."

G. "Statement" means (a) a written statement signed or otherwise adopted or approved by the person making it, and (b) a stenographic, mechanical, electrical or other type of recording, or any transcription thereof which is a substantially verbatim recital of a statement made by the person and contemporaneously recorded.

H. "Possession, custody, or control" of a document or tangible thing includes constructive possession such that the person need not have actual physical possession. As long as the person has a superior right to compel the production of a document or tangible thing from a third party (including an agency, authority, or representative), the person has possession, custody, or control.

I. "Plaintiffs," as referenced in the following discovery requests, refers to RAYE N. BLANCHARD, Individually, and as the Representative of the Estate of THOMAS H. BLANCHARD, Deceased; TAMARA REED; ROGERS TERRY CALLAHAN; EMMA L. CALLAHAN; JEFFREY ALAN CAMPBELL; ROY L. CHOICE; IRMA J. CHOICE; LEON GALLOWAY; MARIE JETTON, Individually, and as the Representative of the Estate of VERNON JETTON, Deceased; VERNA SMITH; PATRICIA KASTRIN, Individually, and as the Representative of the Estate of GEORGE C. KASTRIN, DECEASED; PAMELA KASTRIN

- a. Name, address, telephone number and social security number of each person providing any information in response to these requests.
- b. The office, position, or employment status which such person holds with this defendant and the length of time served in such capacity, the job title, description and length this person has held such position.

RESPONSE:

INTERROGATORY NO. 2:

If you are a corporation, please state:

- a. The full and complete corporate name;
- b. The date of and state in which you were incorporated or obtained charter;
- c. The address of your principal office and the address of your principal place of business;
- d. The name, address and title of each corporate officer and length of time each has served in such capacity, and
- e. Describe your corporate structure, i.e., operations, divisions, departments, etc.

RESPONSE:

INTERROGATORY NO. 3:

Please provide a description of each and every lawsuit for personal injuries in which you have been a defendant at any time.

RESPONSE:

INTERROGATORY NO. 4:

Do you contend that you have not been properly named or properly served herein? If so, please state fully all such contentions.

RESPONSE:

INTERROGATORY NO. 5:

Please provide the following information as to each product:

- a. The generic and trade name of each such product you manufacture and/or market;
- b. The components and/or composition of each product you manufacture and/or market;
- c. The name, address, and telephone number of any other manufacturer of such products;
- d. The name, address, and telephone number of your employee(s) and/or agent(s) most knowledgeable about each product you manufacture and/or market;
- e. The intended purpose or effect of the product; and
- f. All known "side effects," conditions or adverse reactions from use of the product.

RESPONSE:

a.

b.

c.

d.

e.

f.

INTERROGATORY NO. 6:

Please state the following information as to each witness, including expert witnesses, whom you may call to give opinion testimony at trial, and state the same information as to each expert used for consultation only, but whose work product has been reviewed by or forms a basis, either as a whole or as a part, of the opinions of an expert who may be called as a witness: the identity and location (name, address and telephone number) of each witness or expert, the subject matter on which the witness or testifying expert is expected to testify, the subject matter on which the consulting expert has been consulted, the mental impressions, opinions held by the witness or experts and the facts known to the witness or expert (regardless of when acquired) that relate to or form the basis of the mental impressions or opinions of the expert or witness.

RESPONSE:

INTERROGATORY NO. 7:

Identify each document which you have in your possession or control which relates to any statements, whether written, recorded, transcribed, or in any other way preserved, of Plaintiffs.

RESPONSE:

INTERROGATORY NO. 8:

State the identity and location (name, address and telephone number) of each potential party or witness and of each person, whether or not an expert, who has any knowledge of facts or discoverable matters, whether or not admissible, that may be relevant to any issues in this lawsuit, and a description of the specific knowledge each such person has.

RESPONSE:

INTERROGATORY NO. 9:

Please state the following:

- a. The policy number, limits and name of the insurance company with regard to any insurance agreement, whether primary or excess coverage, under which any person carrying on an insurance business may be liable to satisfy part or all of any judgment rendered in this lawsuit against you or to indemnify or reimburse for payments made to satisfy any such judgment; and
- b. Whether such insurance agreements were in force and effect on or about the date of the incident in question referred to above.

RESPONSE:

a.

b.

INTERROGATORY NO. 10:

Please state whether any "non-waiver agreement" has been entered into between you and any insurance company referred to above concerning the defense of the above-entitled and numbered cause; and, if so, please attach a copy of such agreement to your answers.

RESPONSE:

INTERROGATORY NO. 11:

Do you contend that the act or failure to act by any other person, company, corporation or entity caused or contributed to the Plaintiffs' injuries in question, whether such person, company, corporation or entity is a party to this lawsuit or not? If so, please state the following:

- a. Identify each such person, company, corporation or entity, and
- b. As to each such person, company, corporation or entity named, state in detail each act or failure to act you contend caused or contributed to the incident in question.

RESPONSE:

a.

b.

INTERROGATORY NO. 12:

Please identify each and every person or entity whose action or inaction was the proximate cause of the injuries suffered by the Plaintiffs in this action.

RESPONSE:

INTERROGATORY NO. 13:

Please state in detail the manufacturing process whereby you manufacture each product. (This request seeks as much detail as necessary and requests defendant to detail from the point the tobacco is grown to the point of distribution.)

RESPONSE:

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INTERROGATORY NO. 14:

[For the purpose of this interrogatory, the term "tests" includes tests, examinations, studies, or inspections.] If you, anyone acting on your behalf, or anyone acting independently, has performed any tests upon the products at issue or any part thereof in any form, please identify the date of such tests; the identity of the person performing such tests; the results of such tests; and the identity of all documents or reports reflecting such tests.

ANSWER:

INTERROGATORY NO. 15:

Please detail all monies (including subsidies), tax incentives, investment credits, or other preferential treatment you have received as a result of manufacturing, distributing, marketing, or growing the components of the products.

ANSWER:

INTERROGATORY NO. 16:

Describe the terms of each and every settlement, agreement, deal, or understanding of any kind with any other person, firm, corporation, or party whatsoever with respect to this lawsuit (verbal, written, or otherwise), including but not limited to "Mary Carter" agreements; and identify the parties to such settlement, agreement, deal, or understanding. This interrogatory seeks, but it is not limited to, information concerning agreements or understandings of any kind whatsoever, including past, present, and future settlements, deals, agreements, understandings, and conduct by or between you or your attorneys, witnesses, and any other person or entity and their attorneys or witnesses whatsoever.

ANSWER:

INTERROGATORY NO. 17:

State all facts which establish or tend to establish that each of the products at issue were not manufactured by you.

ANSWER:

REQUEST FOR ADMISSION NO. 1:

Admit that you manufactured Benson & Hedges cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 2:

Admit that you currently manufacture Benson & Hedges cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 3:

Admit that you manufactured Winston cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 4:

Admit that you currently manufacture Winston cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 5:

Admit that you manufactured Salem cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 6:

Admit that you currently manufacture Salem cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 7:

Admit that you manufactured Pall Mall cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 8:

Admit that you currently manufacture Pall Mall cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 9:

Admit that you manufactured Camel cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 10:

Admit that you currently manufacture Camel cigarettes.

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ANSWER:

REQUEST FOR ADMISSION NO. 11:

Admit that you manufactured Marlboro cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 12:

Admit that you currently manufacture Marlboro cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 13:

Admit that you manufactured Cool 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 14:

Admit that you currently manufacture Cool 100s cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 15:

Admit that you manufactured Kent 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 16:

Admit that you currently manufacture Kent 100s cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 17:

Admit that you manufactured Kent cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 18:

Admit that you currently manufacture Kent cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 19:

Admit that you manufactured Kent III 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 20:

Admit that you currently manufacture Kent III 100s cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 21:

Admit that you manufactured Viceroy cigarettes during the period in question.

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REQUEST FOR ADMISSION NO. 32:

Admit that you currently manufacture Bull Durham cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 33:

Admit that you manufactured Pyramid cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 34:

Admit that you currently manufacture Pyramid cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 35:

Admit that you sold Benson & Hedges cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 36:

Admit that you currently sell Benson & Hedges cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 37:

Admit that you sold Winston cigarettes during the period in question.

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ANSWER:

REQUEST FOR ADMISSION NO. 38:

Admit that you currently sell Winston cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 39:

Admit that you sold Salem cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 40:

Admit that you currently sell Salem cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 41:

Admit that you sold Pall Mall cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 42:

Admit that you currently sell Pall Mall cigarettes.

ANSWER:

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REQUEST FOR ADMISSION NO. 43:

Admit that you sold Camel cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 44:

Admit that you currently sell Camel cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 45:

Admit that you sold Marlboro cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 46:

Admit that you currently sell Marlboro cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 47:

Admit that you sold Cool 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 48:

Admit that you currently sell Cool 100s cigarettes.

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ANSWER:

REQUEST FOR ADMISSION NO. 49:

Admit that you sold Kent 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 50:

Admit that you currently sell Kent 100s cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 51:

Admit that you sold Kent cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 52:

Admit that you currently sell Kent cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 53:

Admit that you sold Kent III 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 54:

Admit that you currently sell Kent III 100s cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 55:

Admit that you sold Viceroy cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 56:

Admit that you currently sell Viceroy cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 57:

Admit that you sold Lucky Strike cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 58:

Admit that you currently sell Lucky Strike cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 59:

Admit that you sold Chesterfield cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 60:

Admit that you currently sell Chesterfield cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 61:

Admit that you sold Kite cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 62:

Admit that you currently sell Kite cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 63:

Admit that you sold Prince Albert cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 64:

Admit that you currently sell Prince Albert cigarettes.

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REQUEST FOR ADMISSION NO. 70:

Admit that you currently distribute Benson & Hedges cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 71:

Admit that you distributed Winston cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 72:

Admit that you currently distribute Winston cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 73:

Admit that you distributed Salem cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 74:

Admit that you currently distribute Salem cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 75:

Admit that you distributed Pall Mall cigarettes during the period in question.

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ANSWER:

REQUEST FOR ADMISSION NO. 76:

Admit that you currently distribute Pall Mall cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 77:

Admit that you distributed Camel cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 78:

Admit that you currently distribute Camel cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 79:

Admit that you distributed Marlboro cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 80:

Admit that you currently distribute Marlboro cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 81:

Admit that you distributed Cool 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 82:

Admit that you currently distribute Cool 100s cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 83:

Admit that you distributed Kent 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 84:

Admit that you currently distribute Kent 100s cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 85:

Admit that you distributed Kent cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 86:

Admit that you currently distribute Kent cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 87:

Admit that you distributed Kent III 100s cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 88:

Admit that you currently distribute Kent III 100s cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 89:

Admit that you distributed Viceroy cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 90:

Admit that you currently distribute Viceroy cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 91:

Admit that you distributed Lucky Strike cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 92:

Admit that you currently distribute Lucky Strike cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 93:

Admit that you distributed Chesterfield cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 94:

Admit that you currently distribute Chesterfield cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 95:

Admit that you distributed Kite cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 96:

Admit that you currently distribute Kite cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 97:

Admit that you distributed Prince Albert cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 98:

Admit that you currently distribute Prince Albert cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 98:

Admit that you distributed Bull Durham cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 100:

Admit that you currently distribute Bull Durham cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 101:

Admit that you distributed Pyramid cigarettes during the period in question.

ANSWER:

REQUEST FOR ADMISSION NO. 102:

Admit that you currently distribute Pyramid cigarettes.

ANSWER:

REQUEST FOR ADMISSION NO. 103:

Admit that you have received all proper and required notices for all of plaintiffs' allegations in this action.

ANSWER:

INTERROGATORY NO. 18:

If you have denied any of the requests for admission above, in whole or in part, specifically describe the facts supporting each such denial.

ANSWER:

REQUEST FOR PRODUCTION NO. 1:

All documents that are relevant to any of the allegations made the basis of this lawsuit, and set out in Plaintiff's Petitions on file herein.

RESPONSE:

REQUEST FOR PRODUCTION NO. 2:

Any and all documents that in any way support any allegation by you that you are without fault or responsibility with respect to the allegations and claims made in this lawsuit.

RESPONSE:

REQUEST FOR PRODUCTION NO. 3:

Any and all documents relating in any way or referring to the course of treatment or care received by Plaintiffs.

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RESPONSE:

REQUEST FOR PRODUCTION NO. 4:

Copies of any and all insurance policies under the terms of which you may be covered with respect to the claims made in this suit, or under which you may secure indemnity or reimbursement with respect to such claims or a judgment rendered herein.

RESPONSE:

REQUEST FOR PRODUCTION NO. 5:

Any and all documents presented to or prepared by or on the behalf of any expert or other opinion witness whom you may call to give opinion testimony at trial, including any written reports of such expert or opinion witness.

RESPONSE:

REQUEST FOR PRODUCTION NO. 6:

Any and all documents or treatises that form the basis of or were relied upon or reviewed by any expert or any other opinion witness whom you may call to give opinion testimony at trial.

RESPONSE:

REQUEST FOR PRODUCTION NO. 7:

Any and all statements, whether written, recorded, transcribed or in any other way preserved of Plaintiffs.

RESPONSE:

REQUEST FOR PRODUCTION NO. 8:

All depositions of experts and your employees in which cigarette smoke (passive or direct) was alleged as a cause of injury.

RESPONSE:

REQUEST FOR PRODUCTION NO. 9:

Any and all documents prepared in any investigation of the incidents made the basis of this action.

RESPONSE:

REQUEST FOR PRODUCTION NO. 10:

All documents reflecting, referring to, or relating to any claim, lawsuit, and/or legal proceeding made against your company for any personal injuries.

RESPONSE:

REQUEST FOR PRODUCTION NO. 11:

All documents and written reports prepared by or reviewed by: (a) any expert witness you expect to call at the trial of this case, and (b) any other person, if such person's documents or reports were reviewed by an expert who is expected to testify at trial.

RESPONSE:

REQUEST FOR PRODUCTION NO. 12:

All documents or other written materials in your possession which pertain to the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 13:

All documents reflecting, referring to, or relating to any test, inspection, study, or examination performed by you, anyone acting on your behalf, or anyone acting independently on the products, or any part thereof, including the products which caused the injury and damages alleged.

RESPONSE:

REQUEST FOR PRODUCTION NO. 14:

All materials, memoranda, letters, correspondence, written communications of any kind, or documents, including advertisements from Defendant, its employees and its agents to anyone else (including other employees or agents of defendant) which relate to the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 15:

All documents, correspondence, federal or state governmental agency documents, reports, studies, analyses, or internal memoranda or documents, regarding the safety, effects, benefits, suitability and fitness of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 16:

All documents reflecting any written standard, regulation, or procedure (including, but not limited to, regulations or standards prepared by any governmental agency, regulations or standards prepared by you, or any independent safety or testing organization, regulations or standards prepared by any industrial or insuring organization) regarding the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 17:

All documents establishing, reflecting, or indicating that the products were and/or are currently manufactured by you.

RESPONSE:

REQUEST FOR PRODUCTION NO. 18:

Any and all documents, drawings, photographs, videotapes, films, transcriptions or tape recordings, tape recordings, or any other documentary evidence relevant to any testing performed by or reviewed by you or your experts expected to testify at trial upon the products their component parts, or any other sample or lot of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 19:

All documents, reports, studies, analyses, or any other written documentation with respect to alternative designs, formulations, marketing, or manufacturing proposals for the products or any alternative design, formulation, marketing technique, or method of manufacturing currently in use in other similar products, if any.

RESPONSE:

REQUEST FOR PRODUCTION NO. 20:

Any contract or document evidencing an agreement or compromise, settlement, release, covenant not to sue, "Mary Carter" agreement, or any other kind of settlement, agreement, understanding, or deal which any party or potential party to this lawsuit has with any other person, firm, corporation, party, or potential party with respect to the subject matter of this lawsuit. This includes any past, present, and future settlements, deals, agreements, arrangements, understandings, or conduct by or between plaintiff, plaintiff's attorney, agents, witnesses, or representatives and any other person, entity, or such person's or entity's attorneys, agents, witnesses, or representatives whatsoever.

RESPONSE:

REQUEST FOR PRODUCTION NO. 21:

The package, box, wrapper, bottle, or container containing the products which are sold by you, and any written documentation accompanying such package, box, wrapper, bottle, or container.

RESPONSE:

REQUEST FOR PRODUCTION NO. 22:

All information you have received, including scientific studies, unpublished reports, and reports by physicians in the field concerning the products that have been provided to any and all government agencies including, but not limited to, the Food and Product Administration, the Surgeon General, FTC, and the Federal Government.

RESPONSE:

REQUEST FOR PRODUCTION NO. 23:

All documents reflecting the major constituents of the vapor phase of main stream smoke of nonfilter cigarettes.

RESPONSE:

REQUEST FOR PRODUCTION NO. 24:

All documents reflecting the major constituents of the particular matter of the main stream smoke of nonfilter cigarettes.

RESPONSE:

REQUEST FOR PRODUCTION NO. 25:

All documents reflecting the tumorigenic agents in tobacco and tobacco smoke.

RESPONSE:

REQUEST FOR PRODUCTION NO. 26:

All documents reflecting and/or describing the additives that you put into the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 27:

All documents reflecting the speed at which tobacco smoke is inhaled into the system and how quickly it affects the brain.

RESPONSE:

REQUEST FOR PRODUCTION NO. 28:

All documents reflecting addiction caused by nicotine and/or other additives in the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 29:

All documents reflecting representation by way of any type of advertisement made by you that your product: (1) helps you deal with stress; (2) helps you calm down when you are feeling stress; (3) helps pep you up when you are feeling lethargic; (4) helps you concentrate more effectively; (5) makes it easier to control unpleasant feelings; and (6) produces a mild state of euphoria.

RESPONSE:

REQUEST FOR PRODUCTION NO. 30:

All documents reflecting the level of benzene in your product.

RESPONSE:

REQUEST FOR PRODUCTION NO. 31:

All documents reflecting the makeup of the Kent filter. (This request seeks, but is not limited to, all documents in which asbestos was used in the filterization system.)

RESPONSE:

REQUEST FOR PRODUCTION NO. 32:

All documents reflecting the states in which the tobacco for the products is grown.

RESPONSE:

REQUEST FOR PRODUCTION NO. 33:

All documents reflecting the crop value of tobacco for the years 1980 to the present.

RESPONSE:

REQUEST FOR PRODUCTION NO. 34:

All adverse reaction reports regarding the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 35:

All warnings and all instructions you have provided to any health care provider for any period regarding said products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 36:

All epidemiological studies regarding said products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 37:

All written or verbal recall notices by you regarding said products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 38:

Any and all documents or tangible things, including, but not limited to, contracts of any nature, providing indemnity or protection of any nature, by you to anyone arising out of their sales and/or distribution of the product.

RESPONSE:

REQUEST FOR PRODUCTION NO. 40:

Any and all documents indicating your procedures whereby physicians and/or health care providers would have been informed of the risks and hazards of any of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 41:

Any and all documents indicating the sales representative(s) of the defendant assigned to Galveston County.

RESPONSE:

REQUEST FOR PRODUCTION NO. 42:

All documents involving any clinical studies either carried out by Defendant or of which Defendant at any time became aware showing any adverse reactions, contraindications, or side effects of usage of the products, including but not limited to the following:

1. Heart Disease
2. Buerger Disease
3. Anxiety,
4. Nervousness;
5. Confusion;
6. Coordination disorders;
7. Psychotic depression;
8. Cardiovascular disease;
9. Lung cancer;
10. Heart attack;
11. Stroke;
12. Coronary heart disease;
13. Pain in legs;
14. Gangrene;
15. Atherosclerosis;
16. Emphysema;
17. Chronic bronchitis;
18. Mouth cancer;
19. Larynx cancer;
20. Esophageal cancer;
21. Pancreatic cancer;
22. Kidney cancer;
23. Bladder cancer;
24. Leukemia;
25. Cervix cancer;
26. Myeloma;
27. Cataracts;
28. Gum disease;
29. Ulcers;
30. Colds;
31. Tuberculosis;
32. Leukoplakia; and
33. Caries

RESPONSE:

REQUEST FOR PRODUCTION NO. 43:

Documents showing that withdrawal symptoms similar in character to those noted with barbiturates and alcohol (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating, dysphoria, perceptual disturbances and insomnia) have occurred following the abrupt discontinuance of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 44:

All reports, memoranda, or other documents showing the profitability to Defendant, its subsidiaries, affiliates, divisions, or other related entities, anywhere in the world, of manufacturing and/or selling the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 45:

Documents showing the net worth of Defendant, its subsidiaries, affiliates, divisions, or other related entities anywhere in the world for the period 1985 to present.

RESPONSE:

REQUEST FOR PRODUCTION NO. 46:

Documents showing the annual amounts spent on the following by Defendant and its subsidiaries, divisions, affiliates, or other related entities anywhere in the world, with regard to the products:

1. Research and development of the products;
2. Clinical studies;
3. Advertising and marketing studies for the products;
4. Post-marketing studies of the products;
5. All "protocols" or other human studies;
6. All attempts to dissuade publications from publishing scientific or other articles critical of Defendant or the products;
7. All applications to market and/or sell the products;

8. Governmental filings with any government in the world;
9. Attorneys' fees for defending claims of adverse reactions or injuries caused by the products by consumers of the products; and
10. All payments for settlements of claims of adverse reactions to the products by Defendant.

RESPONSE:

REQUEST FOR PRODUCTION NO. 47:

Any and all insurance policies under which Defendant, its subsidiaries, affiliates, divisions, or other related entities anywhere in the world, are provided coverage or costs of defense for the claims asserted by plaintiffs in this lawsuit.

RESPONSE:

REQUEST FOR PRODUCTION NO. 48:

Any correspondence, reports, or memoranda from or to Defendant, its subsidiaries, affiliates, divisions, or other related entities and any insurer regarding this and any other claims or suits arising out of the use of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 49:

All requests for production to Defendant, its subsidiaries, affiliates, divisions, or related entities, anywhere in the world, and all documents, items, and things produced in response thereto by Defendant, its subsidiaries, affiliates, divisions, or related entities, anywhere in the world, in any suits involving the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 50:

All interrogatories served upon Defendant, its subsidiaries, affiliates, divisions, or related entities, anywhere in the world, in any other suits involving claims arising from the use of the products; and the answers of Defendant, its subsidiaries, affiliates, divisions, or related entities, anywhere in the world, filed in response thereto.

RESPONSE:

REQUEST FOR PRODUCTION NO. 51:

All requests for admissions served upon Defendant, its subsidiaries, affiliates, divisions, or related entities, anywhere in the world, in any suits containing claims arising from the use of the products, and the responses thereto filed by Defendant, its subsidiaries, affiliates, divisions, or related entities, anywhere in the world.

RESPONSE:

REQUEST FOR PRODUCTION NO. 52:

Any and all other pleadings, other discovery, briefing, depositions, trial testimony, transcripts, statements of fact, and appellate briefs filed or generated by any party, plaintiff or defendant, including, but not limited to, this Defendant, its subsidiaries, affiliates, divisions, or related entities, anywhere in the world, in any suits involving claims arising from the use of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 53:

Any and all documents, items, and things produced in any other litigation brought against Defendant alleging adverse effects and/or injuries of any nature as a result of using, or discontinuing the use of, the products. (Please only respond for the last ten (10) years.)

RESPONSE:

REQUEST FOR PRODUCTION NO. 54:

Any and all filings regarding suspected adverse reactions to the use of the products filed by or known to exist by Defendant, its subsidiaries, affiliates, divisions, or other related entities anywhere in the world, with any governmental entities of any nation in the world.

RESPONSE:

REQUEST FOR PRODUCTION NO. 55:

All post-marketing spontaneous reports received by or filed by Defendant regarding the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 58:

Any and all quantitative databases to which Defendant has access, ownership, custody, or control. (This request seeks not only inspection of any internal database, computer programs, models or hard disk data regarding the products but also seeks a listing of all databases to which Defendant has subscribed paid to generate (whether for purposes of organization, litigation, or marketing, and/or has access to.)

RESPONSE:

REQUEST FOR PRODUCTION NO. 57:

All domestic medical event reports made by or communicated to Defendants at any time on the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 58:

Any and all reports, documents, and filings submitted to the Federal Product Administration of the government of the United States of America, including but not limited to, those on Form 1639, regarding the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 59:

Any and all voluntary medical event reports involving the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 60:

Any and all spontaneous reports associated with use of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 61:

Any and all Product Abuse Warning Network ("DAWN") information or documents regarding the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 62:

Any analyses conducted by or for the FDA, FTC, Surgeon General, or any other federal or governmental agency of medical events associated with use of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 63:

Any reports based on data received through or from the FDA's Spontaneous Reporting System ("SRS"), or the FDA's Adverse Reactions Reporting System ("ARRS") regarding the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 64:

Any and all correspondence, applications for licenses to sell, studies, protocols, or any other documents, applications, correspondence or things of any type regarding the products sent or filed by Defendant, and any of its subsidiaries and affiliates, to or with any governmental body of any nation in the world, including, but not limited, to the following:

1. United States of America;
2. United Kingdom;
3. France;
4. Spain;
5. Germany;
6. Italy;
7. Norway;
8. Finland;
9. The Netherlands;
10. Belgium;
11. The World Health Organization;
12. The United Nations or any committee, agency, or entity connected with United Nations;
13. Argentina;

14. Jamaica;
15. Lebanon;
16. Canada;
17. Japan;
18. The Philippines;
19. Hong Kong;
20. Saudi Arabia;
21. Taiwan; and
22. Singapore.

RESPONSE:

REQUEST FOR PRODUCTION NO. 65:

All laboratory analyses performed on all patients participating in any clinical program for the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 66:

All results of such laboratory analyses, including all raw data, drafts of reports, and reports.

RESPONSE:

REQUEST FOR PRODUCTION NO. 67:

Any and all epidemiologic studies of users of the products carried out by Defendant, its subsidiaries or affiliates, or associated companies, or those hired by such companies for such purposes in any country, including, but not limited to, the United States, United Kingdom, Canada, Japan, Asia, South America, and The Philippines.

RESPONSE:

employee of the United States government, including, but not limited to, the FDA, FTC, the Department of Health and Human Services, The Center for Products and Biologics, the Surgeon General, The Office of Epidemiology and Biometrics, Office of Compliance and Surveillance, any Psychopharmacological Products Advisory Committee, or any other agency involving the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 73:

All reports, or filings, or other communications to the Department of Health & Human Services, or any of its departments or subdepartments, involving the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 74:

Any and all drafts, revisions, or final forms of any technical reports involving the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 75:

Any and all documents, memoranda, etc., regarding organizational structure of defendant's:

- (1) health and safety department;
- (2) research and development department;
- (3) marketing, advertising, and distributing department;
- (4) accounting and/or sales department; and
- (5) management.

RESPONSE:

REQUEST FOR PRODUCTION NO. 76:

Copies of all depositions, sworn affidavits and/or testimony, involving expert(s) and this Defendant's employees and/or representatives taken in all litigation involving the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 77:

Copies of all transcripts of trial testimony involving this Defendant and the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 78:

Any and all documents sent to, or received from, any agency of any government in the world discussing in any way any possible or actual restrictions or limitations of the sale or use of the products by Defendant, its subsidiaries, affiliates, divisions, or related entities.

RESPONSE:

REQUEST FOR PRODUCTION NO. 79:

Any and all correspondence or other communications with distributors, agents, or marketers, regarding package inserts, warnings, PIPs, and labels of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 80:

All documents, items, and things showing Defendant's involvement, if any, in physician education in the discontinued use of the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 81:

All studies sponsored by Defendant to examine the effect of the publicity regarding the products upon physicians.

RESPONSE:

REQUEST FOR PRODUCTION NO. 82:

Defendant's annual report to shareholders for the last five (5) years.

RESPONSE:

REQUEST FOR PRODUCTION NO. 83:

Defendant's 10K report for the last five (5) years.

RESPONSE:

REQUEST FOR PRODUCTION NO. 84:

All drafts and final forms of all advertisements regarding the products. (This request seeks all billboards, newspaper and magazine advertisements, television, or other forms of advertisement with regard to the products.)

RESPONSE:

REQUEST FOR PRODUCTION NO. 85:

All documents regarding the reasons for any changes in any of the items named in the immediately preceding request for production.

RESPONSE:

REQUEST FOR PRODUCTION NO. 86:

All drafts and final forms of all warnings regarding the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 87:

All documents regarding the reasons for any change in any of the items named in the immediately preceding request for production.

RESPONSE:

REQUEST FOR PRODUCTION NO. 88:

All drafts and final forms of all package inserts and/or labels distributed with the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 89:

All document regarding the reason for any changes in any of the items named in the immediately preceding request for production.

RESPONSE:

REQUEST FOR PRODUCTION NO. 90:

All documents, including studies, preliminary reports, and/or investigations done regarding the effects of second-hand (passive) smoke.

RESPONSE:

REQUEST FOR PRODUCTION NO. 91:

All documents reflecting or relating to increased chances of intrauterine growth retardation in fetuses as a result of smoking and/or being exposed to passive smoke.

RESPONSE:

REQUEST FOR PRODUCTION NO. 92:

All documents and/or orders entered by Judge H. Lee Sarokin including orders which were not complied with or later withdrawn, in the *Cipolone* case.

RESPONSE:

REQUEST FOR PRODUCTION NO. 93:

All documents regarding price-fixing and/or collusion by this defendant regarding the price of its product.

RESPONSE:

REQUEST FOR PRODUCTION NO. 94:

All documents reflecting and/or orders entered by Judge H. Lee Sarokin, including orders which were not complied with or later withdrawn in the *Heines v. Liggett Group, Inc.* case.

RESPONSE:

REQUEST FOR PRODUCTION NO. 95:

All documents reflecting alternative designs in manufacturing the products that would result in decreased fires.

RESPONSE:

REQUEST FOR PRODUCTION NO. 96:

All documents reflecting amounts paid to lobbyists and/or other groups to pass state legislation that would bar and/or stop cigarette litigation in the State of Texas.

RESPONSE:

REQUEST FOR PRODUCTION NO. 97:

All documents reflecting advertisement by this defendant to promote sales of the products. (This request seeks, but is not limited to, advertisements such as the "Play safe, smoke Chesterfield", "Marlboro Man"; and "Joe Camel.")

RESPONSE:

REQUEST FOR PRODUCTION NO. 98:

All documents reflecting advertisers, advertising agencies, publications, or other third parties used by this defendant to promote the products.

RESPONSE:

REQUEST FOR PRODUCTION NO. 99:

All documents, including, but not limited to, the studies regarding the Joe Camel advertising campaign on children. Please produce those studies and/or any testimonial evidence in your possession by Paul Fischer, M.D., John Pierce, Ph.D., Joseph R. DiFranza, M.D., as well as all documents produced and/or requested in the case of *Magnini v. R. J. Reynolds*.

RESPONSE:

REQUEST FOR PRODUCTION NO. 100:

Any and all studies and/or documentation regarding adverse health effects as a result of using said products that were provided or made available to the following organizations: American Cancer Society, American Heart Association, American Lung Association, and the Federal Trade Commission (FTC).

special projects in The Council for Tobacco Research (also referred to as Document No. RC-6033468, *et seq.*, and No. 1005122, *et seq.*)

RESPONSE:

REQUEST FOR PRODUCTION NO. 106:

All documents, including, but not limited, to papers such as the November 6, 1978, memorandum from Donald Hoel regarding the industry research committee meeting of October 26, 1978, in Lexington, Kentucky, indicating that The Council for Tobacco Research needed to be more tobacco oriented with a skeptical view. (Also referred to as Document No. 013472303, *et seq.*)

RESPONSE:

REQUEST FOR PRODUCTION NO. 107:

All documents regarding a November 17, 1978, memorandum from R. V. Seligman to The Council for Tobacco Research file regarding a November 15, 1978, meeting in New York that contains but is not limited to the history of The Council for Tobacco Research. (This document has also been referred to in litigation as No. 1003718428 *et seq.*)

RESPONSE:

REQUEST FOR PRODUCTION NO. 108:

All documents regarding creation and participation by the defendant in the Council for Tobacco Research, U.S.A., Inc, and/or involvement in The Tobacco Institute and/or its predecessors.

RESPONSE:

REQUEST FOR PRODUCTION NO. 109:

All documents reflecting meetings attended, organized, and/or sponsored by this defendant that relate to the tobacco industry research committee in any manner.

RESPONSE:

REQUEST FOR PRODUCTION NO. 110:

All documents reflecting membership dues and/or monies and/or agreements of this defendant and The Council of Tobacco Research U.S.A., Inc., The Tobacco Institute, Inc.; and/or its predecessors.

RESPONSE:

Respectfully submitted,

TAYLOR & CIRE

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the Representative of the Estate of
THOMAS E. BLANCHARD, Deceased; ET AL

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the Plaintiff's First Set of Interrogatories, Requests for Admission, and First Request for Production of Documents was served upon all counsel of record by certified mail, return receipt requested, fax or by hand delivery on this March 8, 1993.

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PROJECT
DISCOVERY

Para-Legal Briefing
Package

VOLUME II

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