Cigarette Content & Design

In a sense, the tobacco industry may be thought of as being a specialized, highly ritualized and stylized segment of the pharmaceutical industry. Tobacco products, uniquely, contain and deliver nicotine, a potent drug with a variety of physiological effects.
(R.J. Reynolds executive Claude Teague Jr., *"RJR Confidential Research Planning Memorandum on the Nature of the Tobacco Business and the Crucial Role of Nicotine Therein,"* 14 April 1972[1])

Moreover, nicotine is addictive. We are, then, in the business of selling nicotine, an addictive drug effective in the release of stress mechanisms.
(July 17, 1963 report by then Brown & Williamson general counsel/vice-president Addison Yeaman[2])

The cigarette should not be construed as a product but a package. The product is nicotine. Think of a puff of smoke as the vehicle for nicotine….Think of the cigarette as the dispenser for a dose unit of nicotine….Smoke is beyond question the most optimised vehicle of nicotine and the cigarette the most optimised dispenser of smoke.
(William L. Dunn Jr., Philip Morris researcher, 1972[3])

Although health authorities around the world know that tobacco products appeal to children, are highly addictive, and cause the premature death of one-third to one-half of all long-term users, tobacco products are among the least regulated of consumer products. In many countries, no strong government agency has regulatory authority over tobacco products. In the United States, for example, the tobacco industry successfully challenged the Food and Drug Administration's authority to regulate cigarettes as drug delivery devices.[4] In other countries, adequate regulatory authority exists but has not yet been exercised, or has been used only in attempts to limit "tar" and nicotine yields.

What's in a Cigarette?

The modern cigarette consists of much more than tobacco. Nicotine, a highly addictive drug found naturally in the tobacco plant, is manipulated with precision to enhance addiction and hundreds of additives, ranging from sweeteners to ammonia, are blended in, usually with no prior government testing, disclosure or oversight. Although tobacco companies often claim that many of the additives they use are approved for human consumption, they fail to mention that burning changes the chemical properties of these additives, potentially making them toxic and/or pharmacologically active.

- Additives such as ammonia raise the pH levels in the smoke, creating high levels of "free nicotine" which can be absorbed by the body more quickly than "bound" nicotine.
- Flavorings and sweeteners are added to mask the harsh taste of tobacco smoke, making them more palatable to children and other first-time users. Some of these additives also mask the smell and visibility of second-hand smoke, further endangering non-smokers and undercutting arguments for clean indoor air laws.
- Menthol and other additives are used to numb the throat so the user does not feel the smoke's irritating effects.[5]

Disclosing Tobacco Product Ingredients

In most nations, manufacturers are required to disclose the ingredients, including flavorings and other additives, of any product intended for human consumption. Exceptions are made only for those ingredients that are accepted as harmless. Very few governments have applied these same rules to tobacco companies.

Recently disclosed tobacco industry documents show that tobacco companies use hundreds of additives with little regard for the safety of smokers. These additives are in

addition to scores of toxic and carcinogenic substances that occur naturally when tobacco is burned. Additives and smoke constituents of concern to health authorities include:

Acetaldehyde (an additive believed to work synergistically with nicotine to enhance addiction)

Acetone (toxic solvent)

Ammonia (added to boost absorption of nicotine)

Arsenic

Cadmium (known human carcinogen)

Carbon monoxide (highly toxic)

Cocoa (one of many sweeteners added to mask the taste of tobacco; also acts as a bronchodilator allowing smokers to inhale smoke more deeply into lungs)

Formaldehyde (probable human carcinogen; best known as an embalming fluid)

Mercury

Nitrosamines (probable human carcinogens)

Polonium-210 (radioactive element, known human carcinogen)

Consumers have a fundamental right to know which compounds they are inhaling. Disclosure is also essential for government regulators to fulfill their public duty. Several governments have taken the lead in requiring tobacco companies to disclose ingredients on a brand-by-brand basis:

Thailand: Thailand passed legislation requiring brand-specific ingredient disclosure in 1992. Tobacco companies did not comply with the law until 1998, after securing agreements from the Thai government that certain ingredients would remain secret.

British Columbia, Canada: The province of British Columbia passed strict ingredient disclosure requirements in 1998, and empowered the Minister of Health to make this information public which she has already done via the World Wide Web.[6]

Massachusetts, United States: The state of Massachusetts passed strict ingredient disclosure regulations that are now being challenged by the tobacco industry in federal court. No information has yet been disclosed.[7]

There are dozens of toxic and carcinogenic compounds in tobacco products and tobacco smoke. Regulating the content of tobacco products, including the use of nicotine, offers a direct way to reduce or eliminate the harm caused by these ingredients. Government oversight could also prevent manufacturers from designing tobacco products that use sweeteners and other methods designed to increase the appeal of tobacco to children and other new users. Unfortunately, tobacco companies have strongly resisted regulation of the manufacturing process through legal and political challenges and have exploited any perceived loopholes in existing regulations.

Other Issues

- Many researchers have focused on the role of nicotine as the substance that creates and sustains the epidemic of tobacco-caused disease. Some have urged governments to gradually reduce nicotine content in cigarettes to a non-addictive level, while simultaneously making nicotine available in less harmful forms for those who are already addicted. This approach has been recommended by the American Medical Association and others, but has not yet been adopted by any government.[8]

- Other researchers have focused on the ability of cigarette manufacturers to reduce the toxic and carcinogenic constituents in their products. Manufacturers have developed several cigarette brands intended to reduce harm, including Premier and Eclipse from R.J. Reynolds and Accord from Philip Morris. So far, manufacturers' efforts have failed to substantially reduce risk for cardiovascular disease, and have failed to win consumer acceptance.

- Recently disclosed industry documents make clear that the tobacco industry has developed technologies and processes that reduce the presence of toxins in tobacco smoke. Yet few of these inventions have actually been used by the industry. While it is impossible that a "safe" cigarette could be made that involved the burning of tobacco, regulators could insist that manufacturers take every possible step to reduce the harm to current

users.[9] Instead, many countries have focused on regulating machine-measured tar and nicotine yields which provide consumers with misleading information on the relative dangers of different tobacco products.[10]

Resources on the World Wide Web

Clive Bates, Martin Jarvis and Greg Connolly, "Tobacco Additives: Cigarette Engineering & Addiction," ASH-UK and the Imperial Cancer Research Fund, 1999
http://www.ash.org.uk/papers/additives.html

John Slade and Jack Henningfield, "Tobacco Product Regulation: Context and Issues," *Food & Drug Law Journal*, Special Supplement on Tobacco, Vol. 53, 1998
http://www.fdli.org/pubs/Journal%20Online/tobsupp_1998/art3.pdf

Campaign for Tobacco Free Kids "Series of Industry Quotes on Nicotine"
http://tobaccofreekids.org/research/factsheets/pdf/0009.pdf

[1]See http://www.rjrtdocs.com/pdfs/500915630-5638.pdf

[2]See http://galen.library.ucsf.edu/tobacco/docs/html/1802.05/1802.05.4.html

[3]See http://www.pmdocs.com/getallimg.asp?DOCID=2056121547/1564

[4]See http://tobaccofreekids.org/reports/fda/ for background information on the recent ruling by the U.S. Supreme Court against the Food & Drug Administration's authority to regulate tobacco products.

[5]Clive Bates, Martin Jarvis and Greg Connolly, "Tobacco Additives: Cigarette Engineering & Addiction," ASH-UK and the Imperial Cancer Research Fund, 1999; http://www.ash.org.uk/papers/additives.html

[6]For latest information on the implementation of British Columbia's ingredient disclosure regulations, see http://http://www.hlth.gov.bc.ca/ttdr/index.html

[7]For the text of the proposed regulation, see: http://www.magnet.state.ma.us/dph/mtcp/report/ingreg.htm

[8]J.E. Henningfield et al., "Reducing the Addictiveness of Cigarettes," *Tobacco Control*, Vol. 7, No. 3, Autumn 1998.

[9]See: ASH-UK and the Imperial Cancer Research Fund, "The Safer Cigarette: What the Tobacco Industry Could Do...and Why it Hasn't Done It," March 1999; http://www.ash.org.uk/papers/patent.html

[10]See Martin Jarvis and Clive Bates, "Why Low Tar Cigarettes Don't Work and How the Tobacco Industry Has Fooled the Smoking Public," 1999; http://www.ash.org.uk/papers/big-one.html