



# **Federal Trade Commission**

**"TAR," NICOTINE, AND CARBON MONOXIDE  
OF THE SMOKE OF 1294 VARIETIES  
OF DOMESTIC CIGARETTES  
FOR THE YEAR 1998**

**Issued 2000**

**Report of "Tar," Nicotine, and Carbon Monoxide of the  
Smoke of 1294 Varieties of Domestic Cigarettes  
For the Year 1998**

This report contains data on the "tar," nicotine, and carbon monoxide yields of 1294 varieties of cigarettes manufactured and sold in the United States in 1998.<sup>1</sup>

Limitations of the Test Method

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<sup>1</sup> This report is the most recent in a series that the Federal Trade Commission (FTC) has prepared since 1967.

<sup>2</sup> When the test method was adopted, the public health community believed that "[t]he preponderance of scientific evidence strongly suggests that the lower the "tar" and nicotine content of cigarette smoke, the less harmful would be the effect." U.S. Dep't of Health and Human Services, *The Health Consequences of Smoking: The Changing Cigarette* 1 (1981) (quoting 1966 Public Health Service statement).

from their cigarettes. In fact, the current ratings tend to be relatively poor predictors of "tar" and nicotine exposure. This appears to be due primarily to compensation -- the tendency of smokers of lower rated cigarettes to take bigger or more frequent puffs, or otherwise alter their smoking behavior to get the amount of nicotine they need. Such variations in the way people smoke can have significant effects on the amount of "tar," nicotine, and carbon monoxide they get from any particular cigarette. The Commission is concerned that smokers may incorrectly believe, for example, that they will get three times as much "tar" from a 15 mg. "tar" cigarette as from a 5 mg. "tar" cigarette. In fact, if compensation is sufficiently great, it is possible for smokers to get as much "tar" and nicotine from relatively low rated cigarettes as from higher rated ones. Although these limitations have been present in the system since its initiation in 1967, they have become of substantial concern more recently because of changes in modern cigarette design and a better understanding of the effects of compensatory smoking behavior.

Some public health agencies have also expressed concerns that new studies may question the basic assumption underlying cigarette testing -- that cigarettes with lower machine-measured "tar" and nicotine ratings are less harmful than ones with higher ratings. For example, in 1997, the National Cancer Institute issued a monograph noting that the apparent mortality risk among current smokers has risen in the last forty to fifty years, even though machine-measured "tar" and nicotine yields have fallen during the same period.<sup>3</sup> In attempting to understand this fact, the monograph suggested that the increased mortality risk might be due to increases in current smokers' lifetime exposure to cigarette smoke or that the reduced "tar" levels of modern cigarettes

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<sup>3</sup> *Smoking and Tobacco Control Monograph 8: Changes in Cigarette-Related Disease Risk and Their Implications for Prevention and Control*, National Institutes of Health, National Cancer Institute (1997).

may have less benefit than previously believed. In addition, a number of studies have also found that changes in smoking behavior and cigarette design appear to have resulted in an increase in a type of cancer that occurs deeper in the lung than the lung cancer traditionally associated with smoking.<sup>4</sup>

In light of these concerns, in 1998 the Commission requested that the Department of Health and Human Services ("HHS") conduct a complete review of the FTC's cigarette testing methodology.<sup>5</sup> That review is currently underway.

While that review is underway, the Commission believes that all smokers should know the following facts:

- C "Tar" and nicotine ratings were never intended to reflect what any individual consumer would get from any particular cigarette;
- C How much "tar" and nicotine an individual gets from a cigarette depends on how he or she smokes it – smokers of cigarette brands with lower "tar" and nicotine ratings who take larger or more frequent puffs may get as much "tar" and nicotine as smokers of higher rated brands;
- C Many cigarettes have ventilation holes that, when blocked, substantially increase exposure to the harmful constituents in smoke;

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<sup>4</sup> See Thun, M.J., et al., "Cigarette Smoking and Changes in the Histopathology of Lung Cancer," 89 *J. of the Nat'l Cancer Inst.* 1580 (1997); Ernster, V.L., "The Epidemiology of Lung Cancer in Women," 4 *Annals of Epidemiology* 102 (1994); Levi, F.S., et al., "Lung Carcinoma Trends by Histologic Type in Vaud and Neuchatel, Switzerland, 1974-1994," 79 *Cancer* 906 (1997).

<sup>5</sup> Among other things, HHS's review is designed to reconcile the findings of recent studies suggesting that cigarettes with lower "tar" ratings may not be less harmful with the findings of other studies suggesting that there may be some risk reduction from the use of lower "tar" cigarettes. See Parish, H., et al., "Cigarette smoking, tar yields, and non-fatal myocardial infarction: 14,000 cases and 32,000 controls in the UK," 311 *Brit. Med. J.*, 471 (1995); Tang, J., et al., "Mortality in relation to tar yield of cigarettes: a prospective study of four cohorts," 311 *Brit. Med. J.* 1530 (1995).

- C There is no such thing as a safe smoke, no matter what the "tar" and nicotine ratings are; and
- C People who are concerned about the health effects of smoking should quit.<sup>6</sup>

The Commission also believes it is vital that there be a mechanism for implementing the recommended changes once the HHS review is completed. Although the Commission brings a strong, market-based expertise to its scrutiny of consumer protection matters, it does not have the specialized scientific expertise needed to design scientific test procedures. Indeed, when evaluating medical or other scientific issues, the Commission often relies on other government agencies and outside experts with more knowledge in the relevant areas. Therefore, in its two most recent reports to Congress pursuant to the Cigarette Labeling and Advertising Act, the Commission has recommended that Congress consider giving authority over cigarette testing to one of the Federal government's science-based, public health agencies.

#### The Source of the Data in This Report

The FTC obtained the test results published in this report from the five largest cigarette manufacturers in the United States. These companies are: Brown & Williamson Tobacco Corporation; Liggett Group, Inc.; Lorillard, Inc.; Philip Morris, Inc.; and R.J. Reynolds Tobacco Company, Inc.

The Tobacco Institute Testing Laboratory (TITL), a private laboratory operated by the cigarette industry, conducted much of the "tar," nicotine, and carbon monoxide testing for these

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<sup>6</sup> In May 2000, the Commission released a Consumer Alert entitled "Up In Smoke: The Truth About Tar and Nicotine Ratings" that provides consumers with important information about "low tar" cigarettes and the limitations of the "tar" and nicotine ratings.

varieties.<sup>7</sup> TITL provided the results to the respective cigarette companies, which then provided TITL's data regarding their own brands to the Commission in response to compulsory process. Generic, private label, and other brands not widely available were tested by the manufacturers themselves, not by TITL. The Commission also obtained the information about these other brands directly from the manufacturers, pursuant to compulsory process. Results of such non-TITL testing are indicated by asterisks. The methodology, processes, and procedures that the five cigarette companies and TITL employ are identical to those the Commission, in its own testing lab, had followed in the past.<sup>8</sup>

#### A Description of the Cigarette Test Method

The cigarettes were tested using the Cambridge Method. The Commission approved this

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<sup>7</sup> In early 1999, the Tobacco Institute was disbanded pursuant to the multi-state tobacco settlement. The Tobacco Institute Testing Laboratory's facilities have continued operation under the name Tobacco Industry Testing Laboratory.

<sup>8</sup> The Commission decided in early 1987 to close its laboratory. The Commission found that closing the laboratory was necessary for several reasons: chiefly, the cost of the laboratory was significant, and the Commission would have had to commit significant additional funds to continue the program. The Commission was also persuaded that the information could be obtained from other sources, and other means were available to verify the accuracy of industry testing results.

<sup>9</sup> On April 13, 1983, the Commission announced it had determined that its testing methodology understated the measured deliveries for Brown & Williamson's Barclay cigarettes. Therefore, Barclay cigarettes were removed from the Commission's reports for "tar," nicotine,

1. Smoke cigarettes to a 23mm. butt length, or to the length of the filter and overwrap plus 3mm. if in excess of 23mm.;
2. Base results on a test of 100 cigarettes per brand, or type;
3. Cigarettes to be tested will be selected on a random basis, as opposed to "weight selection";
4. Determine particulate matter on a "dry" basis employing the gas chromatography method published by C.H. Sloan and B.J. Sublett in Tobacco Science 9, page 70, 1965, as modified by F.J. Schultz' and A.W. Spears' report published in Tobacco Vol. 162, No. 24, page 32, dated June 17, 1966, to determine the moisture content;
5. Determine and report the "tar" yield after subtracting moisture and alkaloids (as nicotine) from particulate matter;
6. Report "tar" yield to the nearest whole milligram and nicotine yield to the nearest 1/10 milligram.<sup>10</sup>

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and carbon monoxide until a new, accurate methodology could be tested and adopted. The Commission found that there was also a significant likelihood that the same problem existed with two other Brown & Williamson varieties -- Kool Ultra and Kool Ultra 100's.

On July 25, 1986, the Commission informed Brown & Williamson that as a result of a review of data presented by Brown & Williamson regarding "tar" and nicotine rating for two varieties of Barclay cigarettes with a new filter, the Commission would authorize, under certain conditions, the following legends for advertising purposes:

1. For Barclay King size:  
3 mg. "tar," .2 mg. nicotine avg. per cigarette as authorized by FTC.
2. For Barclay 100's:  
5 mg. "tar," .4 mg. nicotine avg. per cigarette as authorized by FTC.

<sup>10</sup> The Commission's 1980 announcement, 45 Fed. Reg. 46,483 (1980), adopted a new testing methodology to determine cigarettes' carbon monoxide (CO) yields, and modified the existing specifications for determining nicotine yields:

1. Determine CO concentration using a 20-port smoking machine described by H.C. Pillsbury and G. Merfeld at the 32nd Tobacco Chemists Research Conference, October 1978;

TITL reported that an independent company under contract to TITL obtained the tested cigarette samples. Under its contract, this company purchased two packages of every variety of cigarettes in 50 geographical locations throughout the United States. If not all varieties were available in every location, one or more additional packages of cigarettes were purchased in the areas where the respective varieties were available. Cigarettes used in the test represented cigarettes sold in the U.S. at the time of purchase in 1998.

"Tar" and carbon monoxide ratings are rounded to the nearest milligram (mg.); those with 0.5 mg. or greater are rounded up, while those with 0.4 mg. or less are rounded down. The nicotine figures are rounded to the nearest tenth of a milligram. Those with 0.05 mg. or greater are rounded up; those with 0.04 mg. or less are rounded down.

Cigarette varieties with assay results for "tar" or carbon monoxide below 0.5 mg. per cigarette or for nicotine below 0.05 mg. are recorded in the table as <0.5, and <0.05, respectively. The table does not differentiate, nor are actual ratings provided for these cigarettes, because the currently approved testing methodology is not sufficiently sensitive to report these components at lower levels.

Table 1 of this report displays the average "tar" and nicotine values, calculated on a sales-

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2. The concentration of CO will be reported as milligrams per cigarette;
  3. The present method for "tar" and nicotine determination will be modified to use the method described in an article entitled, "Gas Chromatographic Determination of Nicotine Contained on Cambridge Filter Pads," by John R. Wagner, et al., as presented at the annual meeting of the Association of Official Analytical Chemists, October 1978.



weighted basis, from 1968 through 1998.<sup>11</sup>

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<sup>11</sup> Several issues should be noted with regard to the collection and tabulation of the data in Table 1. First, the underlying "tar" and nicotine ratings were obtained using smoking machine parameters (puff frequency, puff volume, etc.) that have not changed since they were first adopted in 1967. Although this consistency allows for comparison of the data over time, it also means that the test has not been modified to reflect possible changes in the way people smoke. For example, research indicates that smokers of lower rated cigarettes may tend to smoke them more intensively than they smoke cigarettes with higher ratings. Thus, while Table 1 suggests a decline in average "tar" and nicotine yields of cigarettes, this might not correspond to a similar reduction in "tar" and nicotine ingestion by smokers.

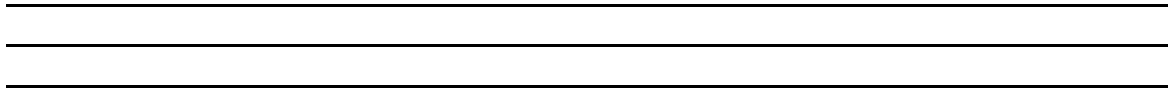
Second, the source of the data in Table 1 has changed over time. From 1967 through 1985, the Commission's laboratory provided practically all of the "tar" and nicotine ratings reported by the Commission. As noted supra, the Commission decided in 1987 to close its cigarette testing laboratory. Since then, the TITL has continued to test most branded cigarettes; the companies report the results to the Commission pursuant to compulsory process and the Commission publishes the results. The companies test their own generic and private label cigarettes -- which today represent a significant part of the overall cigarette market -- brands not widely available, and new brands.

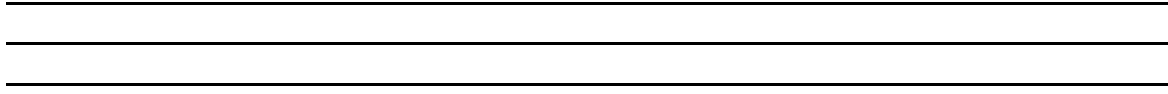
Third, although the Commission did not publish "tar" and nicotine reports during some of the years covered by Table 1, reliable data for those years are still available. Beginning with cigarettes sold in calendar year 1985, the Commission required the major cigarette companies to report annually the "tar", nicotine, and carbon monoxide ratings of all cigarettes they sold in the United States. These data were incorporated as needed into the database that was used to compute the sales-weighted "tar" and nicotine figures in Table 1.

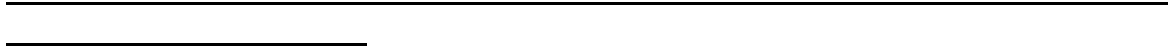
Finally, when the FTC created its computerized database for "tar" and nicotine figures in 1982, various problems resulted in missing observations for between four and eight percent of the data for the years 1982 through 1984. Although these missing observations do not appear to generate systemic biases in the data, they suggest that the data in Table 1 may be more useful for gauging long term trends than for evaluating changes over very short time spans.

**TABLE 1**  
**SALES WEIGHTED "TAR" AND NICOTINE YIELDS**  
**1968-1998**

<u>YEAR</u>	<u>"TAR" (mg.)</u>	<u>NICOTINE (mg.)</u>
1968	21.6	1.35
1969	20.7	1.38
1970	20.0	1.31
1971	20.2	1.32
1972	19.9	1.39
1973	19.3	1.32
1974	18.4	1.24
1975	18.6	1.21
1976	18.1	1.16
1977	16.8	1.12
1978	16.1	1.11
1979	15.1	1.07
1980	14.1	1.04
1981	13.2	0.92
1982	13.5	0.89
1983	13.4	0.88
1984	13.0	0.89
1985	13.0	0.95
1986	13.4	0.93
1987	13.3	0.94
1988	13.3	0.94
1989	13.1	0.96
1990	12.5	0.93
1991		







# "Tar," Nicotine & Carbon Monoxide Report

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Brand Name	Description	Tar	Nic	CO
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# "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description	Tar	Nic	CO
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# "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description	Tar	Nic	CO







## "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description				Tar	Nic	CO	
Covington	100	F	SP	Ultra-Lt	6	0.4	8	
Covington	King	F	SP	FF	14	0.7	18	
Covington	King	F	SP	FF	Menthol	14	0.7	18
Covington	King	F	SP	Lt	10	0.6	14	
Daves	King	F	HP		16	1.0	17	
Daves	King	F	HP	Lt	10	0.7	13	
Director's Choice	100	F	SP	Lt	9	0.7	12	
Director's Choice*	100	F	SP	FF	13	0.8	18	
Director's Choice*	100	F	SP	FF	Menthol	13	0.8	17
Director's Choice*	100	F	SP	Lt	Menthol	10	0.7	12
Director's Choice*	100	F	SP	Ultra-Lt	4	0.3	8	
Director's Choice*	King	F	HP	FF	15	0.9	16	
Director's Choice*	King	F	HP	Lt	9	0.6	12	
Director's Choice*	King	F	SP	FF	14	0.8	16	
Director's Choice*	King	F	SP	FF	Menthol	14	0.8	17
Director's Choice*	King	F	SP	Lt	10	0.7	13	
Director's Choice*	King	F	SP	Lt	Menthol	9	0.6	12
Director's Choice*	King	F	SP	Ultra-Lt	4	0.3	6	
Director's Choice*	King	NF	SP		20	1.1	16	
Doral*	100	F	HP	FF	12	0.8	14	
Doral*	100	F	HP	Lt	11	0.8	13	
Doral	100	F	SP	FF	12	0.8	16	
Doral	100	F	SP	FF	Menthol	12	0.8	15
Doral	100	F	SP	Lt	10	0.7	14	
Doral	100	F	SP	Lt	Menthol	10	0.7	14
Doral	100	F	SP	Ultra-Lt	4	0.3	7	
Doral	King	F	HP	FF	13	0.8	14	
Doral*	King	F	HP	FF	Menthol	13	0.8	14
Doral	King	F	HP	Lt	8	0.5	11	
Doral	King	F	SP	FF	13	0.8	15	
Doral	King	F	SP	FF	Menthol	14	0.8	14
Doral	King	F	SP	Lt	8	0.5	12	
Doral	King	F	SP	Lt	Menthol	8	0.5	12
Doral	King	F	SP	Ultra-Lt	4	0.3	6	
Doral	King	NF	SP		20	1.0	16	
Eclipse*	King	F	HP		4	0.2	9	
Eclipse*	King	F	HP		Menthol	4	0.1	9
Eclipse*	King	F	HP	Mild	3	0.1	8	
Eclipse*	King	F	HP	Mild	Menthol	3	0.1	8
English Ovals	King	NF	HP		26	2.0	15	



## "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description						Tar	Nic	CO
Focus*	100	F	SP	FF			13	0.8	18
Focus*	100	F	SP	FF	Menthol		13	0.8	17
Focus*	100	F	SP	Lt			9	0.7	12
Focus*	100	F	SP	Lt	Menthol		10	0.7	12
Focus*	100	F	SP	Ultra-Lt			4	0.3	8
Focus*	King	F	HP	FF			15	0.9	16
Focus*	King	F	HP	Lt			9	0.6	12
Focus*	King	F	SP	FF			14	0.8	16
Focus*	King	F	SP	FF	Menthol		14	0.8	17
Focus*	King	F	SP	Lt			10	0.7	13
Focus*	King	F	SP	Lt	Menthol		9	0.6	12
Focus*	King	F	SP	Ultra-Lt			4	0.3	6
Focus*	King	NF	SP				20	1.1	16
Gen/Private Label*	100	F	HP	Lt			10	0.6	15
Gen/Private Label*	100	F	HP	Lt	Menthol		10	0.6	15
Gen/Private Label*	100	F	HP	Ultra-Lt			6	0.4	8
Gen/Private Label*	100	F	SP	FF			15	0.8	20
Gen/Private Label*	100	F	SP	FF	Menthol		15	0.8	20
Gen/Private Label*	100	F	SP	Lt			10	0.6	15
Gen/Private Label*	100	F	SP	Lt	Menthol		10	0.6	15
Gen/Private Label*	100	F	SP	Ultra-Lt			6	0.4	8
Gen/Private Label*	King	F	HP	FF			14	0.7	18
Gen/Private Label*	King	F	HP	Lt			10	0.6	14
Gen/Private Label*	King	F	SP	FF			14	0.7	18
Gen/Private Label*	King	F	SP	FF	Menthol		14	0.7	18
Gen/Private Label*	King	F	SP	Lt			10	0.6	14
Gen/Private Label*	King	F	SP	Lt	Menthol		10	0.6	14
Gen/Private Label*	King	F	SP	Ultra-Lt			6	0.4	6
Gen/Private Label*	King	NF	SP	FF			23	1.4	15
Genco*	100	F	SP			Generic	16	1.0	NA
Genco*	100	F	SP	FF	Menthol	Generic	16	1.0	NA
Genco*	100	F	SP	Lt		Generic	11	0.8	NA
Genco*	100	F	SP	Lt	Menthol	Generic	11	0.8	NA
Genco*	100	F	SP	Ultra-Lt		Generic	6	0.5	NA
Genco*	King	F	SP			Generic	15	0.9	NA
Genco*	King	F	SP	FF	Menthol	Generic	15	0.9	NA
Genco*	King	F	SP	Lt		Generic	11	0.7	NA
Genco*	King	F	SP	Lt	Menthol	Generic	11	0.7	NA
Genco*	King	F	SP	Ultra-Lt		Generic	6	0.5	NA
Genco*	King	NF	SP			Generic	25	1.8	NA



## "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description						Tar	Nic	CO
Generals*	100	F	SP	FF		Generic	16	1.0	NA
Generals*	100	F	SP	FF	Menthol	Generic	16	1.0	NA
Generals*	100	F	SP	Lt		Generic	11	0.8	NA
Generals*	100	F	SP	Lt	Menthol	Generic	11	0.8	NA
Generals*	100	F	SP	Ultra-Lt		Generic	6	0.5	NA
Generals*	King	F	SP	FF		Generic	15	0.9	NA
Generals*	King	F	SP	FF	Menthol	Generic	15	0.9	NA
Generals*	King	F	SP	Lt		Generic	11	0.7	NA
Generals*	King	F	SP	Lt	Menthol	Generic	11	0.7	NA
Generals*	King	F	SP	Ultra-Lt		Generic	6	0.5	NA
Generals*	King	NF	SP			Generic	25	1.8	NA
Gold Coast*	100	F	SP	FF			13	0.8	18
Gold Coast*	100	F	SP	Lt			9	0.7	12
Gold Coast*	100	F	SP	Lt	Menthol		10	0.7	12
Gold Coast*	100	F	SP	Ultra-Lt			4	0.3	8
Gold Coast*	King	F	SP	FF			14	0.8	16
Gold Coast*	King	F	SP	Lt			10	0.7	13
Gold Coast*	King	F	SP	Lt	Menthol		9	0.6	12
Gold Coast*	King	F	SP	Ultra-Lt			4	0.3	6
GPC*	100	F	HP				12	0.8	12
GPC	100	F	HP	FF			15	0.9	16
GPC	100	F	HP	Lt			10	0.7	13
GPC	100	F	SP	FF			14	0.9	16
GPC	100	F	SP	FF	Menthol		14	0.9	15
GPC	100	F	SP	Lt			11	0.7	14
GPC	100	F	SP	Lt	Menthol		9	0.7	9
GPC	100	F	SP	Ultra-Lt			5	0.4	7
GPC	100	F	SP	Ultra-Lt			5	0.4	7
GPC	100	F	SP	Ultra-Lt	Menthol		5	0.4	5
GPC*	King	F	HP				11	0.7	11
GPC	King	F	HP	FF			15	0.9	15
GPC	King	F	HP	Lt			9	0.6	11
GPC	King	F	SP	FF			16	0.9	16
GPC*	King	F	SP	FF			15	1.2	13
GPC	King	F	SP	FF	Menthol		15	1.0	14
GPC	King	F	SP	Lt			9	0.6	11
GPC*	King	F	SP	Lt			9	0.8	10
GPC	King	F	SP	Lt	Menthol		9	0.7	9
GPC	King	F	SP	Ultra-Lt			5	0.4	7
GPC	King	F	SP	Ultra-Lt	Menthol		5	0.4	6





## "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description					Tar	Nic	CO
Lark*	King	F	SP		Charcoal	12	0.9	NA
Lark	King	F	SP	FF		14	1.0	16
Lark	King	F	SP	Lt		11	0.8	11
Lark*	King	F	SP	Lt	Super	4	0.3	NA
Lark*	King	F	SP	Mild	Charcoal	9	0.7	NA
Legend*	100	F	SP	FF		13	0.8	18
Legend*	100	F	SP	FF	Menthol	13	0.8	17
Legend*	100	F	SP	Lt		9	0.7	12
Legend*	100	F	SP	Lt	Menthol	10	0.7	12
Legend*	100	F	SP	Ultra-Lt		4	0.3	8
Legend*	King	F	SP	FF		14	0.8	16
Legend*	King	F	SP	FF	Menthol	14	0.8	17
Legend*	King	F	SP	Lt		10	0.7	13
Legend*	King	F	SP	Lt	Menthol	9	0.6	12
Legend*	King	F	SP	Ultra-Lt		4	0.3	6
Legend*	King	NF	SP			20	1.1	16
Lucky Strike	Reg	NF	SP			24	1.5	17
Lucky Strike*	King	F	HP			7	0.5	7
Lucky Strike*	King	F	HP	Lt		10	0.8	11
Lucky Strike*	King	F	SP	FF		15	1.1	13
Magna	King	F	HP			14	0.8	16
Magna	King	F	HP	Lt		10	0.7	13
Magna	King	F	SP			14	0.8	16
Magna	King	F	SP	Lt		10	0.6	12
Marker*	100	F	SP	FF		13	0.8	18
Marker*	100	F	SP	FF	Menthol	13	0.8	17
Marker*	100	F	SP	Lt		9	0.7	12
Marker*	100	F	SP	Lt	Menthol	10	0.7	12
Marker*	100	F	SP	Ultra-Lt		4	0.3	8
Marker*	King	F	SP	FF		14	0.8	16
Marker*	King	F	SP	FF	Menthol	14	0.8	17
Marker*	King	F	SP	Lt		10	0.7	13
Marker*	King	F	SP	Lt	Menthol	9	0.6	12
Marker*	King	F	SP	Ultra-Lt		4	0.3	6
Marker*	King	NF	SP			20	1.1	16
Marlboro	100	F	HP		Gold Pkg	15	1.1	15
Marlboro	100	F	HP		Gold Pkg	15	1.1	15
Marlboro*	100	F	HP		Red	15	1.1	NA
Marlboro	100	F	HP		Red Pkg	15	1.1	14
Marlboro*	100	F	HP		Menthol	15	1.1	NA

## "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description				Tar	Nic	CO	
Marlboro	100	F	HP	Lt	10	0.8	13	
Marlboro	100	F	HP	Lt	Menthol	10	0.8	12
Marlboro	100	F	HP	Medium		13	1.0	14
Marlboro	100	F	HP	Ultra-Lt		6	0.5	8
Marlboro	100	F	SP		Gold Pkg	16	1.2	16
Marlboro	100	F	SP		Gold Pkg	16	1.2	16
Marlboro*	100	F	SP		Red	15	1.1	NA
Marlboro	100	F	SP		Red Pkg	16	1.2	16
Marlboro	100	F	SP		Red Pkg	16	1.2	16
Marlboro	100	F	SP	Lt		11	0.8	13
Marlboro	100	F	SP	Lt		11	0.8	13
Marlboro	100	F	SP	Lt	Menthol	9	0.7	12
Marlboro	100	F	SP	Medium		13	1.0	13
Marlboro*	King	F	HP			16	1.1	NA
Marlboro	King	F	HP			15	1.1	14
Marlboro	King	F	HP			15	1.1	14
Marlboro*	King	F	HP		10-pk	16	1.1	NA
Marlboro	King	F	HP		Menthol	16	1.1	15
Marlboro	King	F	HP		Menthol	16	1.1	15
Marlboro*	King	F	HP	Lt		11	0.8	NA
Marlboro	King	F	HP	Lt		11	0.8	12
Marlboro	King	F	HP	Lt		11	0.8	12
Marlboro	King	F	HP	Lt	Menthol	10	0.8	10
Marlboro	King	F	HP	Lt	Menthol	10	0.8	10
Marlboro	King	F	HP	Medium		12	0.9	12
Marlboro	King	F	HP	Medium		12	0.9	12
Marlboro	King	F	HP	Ultra-Lt		6	0.5	7
Marlboro	King	F	SP			15	1.1	15
Marlboro	King	F	SP			15	1.1	15
Marlboro	King	F	SP			16	1.1	15
Marlboro	King	F	SP		Menthol	16	1.1	15
Marlboro	King	F	SP		Menthol	16	1.1	15
Marlboro	King	F	SP	Lt		11	0.8	12
Marlboro	King	F	SP	Lt		10	0.8	12
Marlboro	King	F	SP	Lt		11	0.8	12
Marlboro	King	F	SP	Lt	Menthol	10	0.8	10
Marlboro	King	F	SP	Lt	Menthol	10	0.8	10
Marlboro	King	F	SP	Medium		11	0.8	12
Marlboro	King	F	SP	Medium		11	0.8	12
Maverick	100	F	HP		Menthol	18	1.3	18















# "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description	Tar	Nic	CO
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Brand Name	Description	Tar	Nic	CO
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# "Tar," Nicotine & Carbon Monoxide Report

Brand Name	Description	Tar	Nic	CO
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**"Tar," Nicotine & Carbon Monoxide Report**

<b>Brand Name</b>	<b>Description</b>				<b>Tar</b>	<b>Nic</b>	<b>CO</b>	
Winston	King	F	SP	Ultra-Lt	5	0.5	8	
Worth*	100	F	SP	FF	13	0.8	18	
Worth*	100	F	SP	FF	Menthol	13	0.8	17
Worth*	100	F	SP	Lt	9	0.7	12	
Worth*	100	F	SP	Lt	Menthol	10	0.7	12
Worth*	100	F	SP	Ultra-Lt	4	0.3	8	
Worth*	King	F	HP	FF	15	0.9	16	
Worth*	King	F	HP	Lt	9	0.6	12	
Worth*	King	F	SP	FF	14	0.8	16	
Worth*	King	F	SP	FF	Menthol	14	0.8	17
Worth*	King	F	SP	Lt	10	0.7	13	
Worth*	King	F	SP					