



**Report of "Tar," Nicotine, and Carbon Monoxide of the
Smoke of 1262 Varieties of Domestic Cigarettes
For the Year 1996**

This report contains data on the "tar," nicotine, and carbon monoxide yields of 1262 varieties of cigarettes manufactured and sold in the United States in 1996.¹

Limitations of the Cigarette Test Method

Cigarette ratings for "tar," nicotine and carbon monoxide are currently determined by machine testing conducted in accordance with a methodology adopted by the Commission in 1967. The "tar" and nicotine testing program was intended to provide smokers seeking to switch to lower "tar" cigarettes with a single, standardized measurement with which to choose among the then-existing brands.²

¹ This report is another in a series that the Federal Trade Commission (FTC) has prepared since 1967.

² 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).

rely on the ratings it produces as indicators of how much "tar" and nicotine they actually get 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

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³ *Smoking and Tobacco Control Monograph 8: Changes in Cigarette-Related Disease Risk*
(continued...)

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and Their Implications for Prevention and Control, National Institutes of Health, National Cancer Institute (1997).

⁴ 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).

⁵ 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.*

- 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;
- Many cigarettes have ventilation holes that, when blocked, substantially increase exposure to the harmful constituents in smoke;
- There is no such thing as a safe smoke, no matter what the "tar" and nicotine ratings are; and
- People who are concerned about the health effects of smoking should quit.

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 July 1999 "Report to Congress for 1997, Pursuant to the Cigarette Labeling and Advertising Act," the Commission recommended that Congress consider giving authority over cigarette testing to one of the Federal government's science-based, public health agencies.

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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 varieties.⁶ The Commission collected the results of the TITL testing directly from the individual companies under compulsory process. Generic, private label, and other brands not widely available were not tested by TITL. The Commission obtained the information on 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.⁷ Harold Pillsbury, the former director of the FTC laboratory and currently a contractor to the Commission, had unrestricted access to the TITL laboratory to review TITL's testing methodology and protocols and to monitor the actual testing process. 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.

⁶ 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.

⁷ 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.

⁸ 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, 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

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.⁹

TITL reported, and the FTC's contractor confirmed, 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 1996.

"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

⁹ 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;
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.

¹⁰ 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 Tobacco Institute Testing Laboratory 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

¹⁰(...continued)
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 2
VARIETIES WITH THE LOWEST "TAR" YIELD

Brand Name	Description					Tar	Nic	CO
Carlton	King	F	HP	Ultra-Lt			<.5	<.05 <.5
Now	100	F	HP				<.5	<.05 <.5
Now	King	F	HP				<.5	<.05 <.5
Carlton	100	F	HP	Lt			1	0.1 1
Bristol	King	F	SP	Lowest			1	0.1 1
Carlton	100	F	HP	Lt	Menthol		1	0.1 1
Carlton	King	F	SP	Lt			1	0.1 1
Carlton	King	F	SP	Lt	Menthol		1	0.1 2
Now	King	F	SP	Menthol			1	0.1 2
Now	King	F	SP				1	0.1 2
Carlton	King	F	HP	Lt			1	0.1 2
Merit	King	F	SP	Ultima			1	0.1 3
Merit	King	F	HP	Ultima			1	0.1 3
Cambridge	King	F	SP	Lowest			1	0.2 2

NOTE: F - Filter, HP - Hard Pack, SP - Soft Pack, Lt - Light

TABLE 3
VARIETIES WITH THE HIGHEST "TAR" YIELD

Brand Name	Description				Tar	Nic	CO	
Basic	King	NF	SP		27	1.8	15	
Commander	King	NF	SP		27	1.7	15	
Bristol	King	NF	SP		26	1.7	15	
English Ovals	King	NF	HP		25	2.0	15	
Old Gold	King	NF	SP	Straight	25	1.7	18	
Lucky Strike	King	NF	SP		25	1.6	17	
Class A Dlx*	King	NF	SP	FF	25	1.5	17	
Gen/Private Label*	King	NF	SP	FF	25	1.5	17	
Tareyton, Herbert	King	NF	SP		25	1.5	17	
Class A*	King	NF	SP	FF	25	1.5	17	
Camel	Reg	NF	SP		24	1.7	16	
Players	Reg	NF	HP		24	1.7	14	
Shield*	King	NF	SP		Generic	24	1.6	NA
Premium Buy*	King	NF	SP		Generic	24	1.6	NA
Top Choice*	King	NF	SP		Generic	24	1.6	NA
Best Buy*	King	NF	SP		Generic	24	1.6	NA
Genco*	King	NF	SP		Generic	24	1.6	NA
Gridlock*	King	NF	SP		Generic	24	1.6	NA
Shenandoah*	King	NF	SP		Generic	24	1.6	NA
All American Value*	King	NF	SP		24	1.6	NA	
Bronson*	King	NF	SP		Generic	24	1.6	NA
Generals*	King	NF	SP		Generic	24	1.6	NA
Pall Mall*	Reg	NF	SP		24	1.4	16	
Pall Mall	King	NF	SP		24	1.4	16	
Chesterfield	King	NF	SP	FF	24	1.3	18	
Pyramid	King	NF	SP	FF	24	1.3	18	

NOTE: NF - Non-Filter, HP - Hard Pack, SP - Soft Pack, FF - Full Flavor

* indicates brand tested by the manufacturer rather than by TITL.

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Brand Name	Description					Tar	Nic	CO			
All American Value*	100	F	SP	FF			16	1.0	NA		
All American Value*	100	F	SP	Lt			11	0.7	NA		
All American Value*	100	F	SP	Lt	Menthol		11	0.8	NA		
All American Value*	100	F	SP	Ultra-Lt			6	0.5	NA		
All American Value*	King	F	SP	FF			16	1.0	NA		
All American Value*	King	F	SP	Lt			11	0.7	NA		
All American Value*	King	F	SP	Lt	Menthol		11	0.7	NA		
All American Value*	King	F	SP	Ultra-Lt			6	0.5	NA		
All American Value*	King	NF	SP				24	1.6	NA		
Alpine	100	F	SP	Menthol			16	1.1	14		
Alpine	King	F	HP	Menthol			16	1.0	15		
Alpine	King	F	SP	Menthol			16	1.1	15		
Alpine Lights	100	F	SP	Lt	Menthol		9	0.7	11		
Alpine Lights	King	F	HP	Lt	Menthol		9	0.7	10		
Alpine Lights	King	F	SP	Lt	Menthol		9	0.7	10		
American Filters	100	F	SP	FF			16	1.2	15		
American Filters	King	F	SP	FF			17	1.2	15		
American Filters*	King	F	HP	FF			NA	NA	NA		
American Lights	100	F	SP	Lt				12	1.0	13	
American Lights	King	F	SP	Lt				11	0.9	12	
American Lights*	King	F	HP	Lt				NA	NA	NA	
Austin*	100	F	SP	FF			13	0.8	17		
Austin*	100	F	SP	FF	Menthol		13	0.8	17		
Austin*	100	F	SP	Lt			9	0.6	12		
Austin*	100	F	SP	Lt	Menthol		9	0.6	11		
Austin*	100	F	SP	Ultra-Lt			4	0.3	8		
Austin*	King	F	HP	FF			14	0.8	15		
Austin*	King	F	HP	Lt			10	0.6	12		
Austin*	King	F	SP	FF			14	0.8	16		
Austin*	King	F	SP	FF	Menthol		14	0.8	16		
Austin*	King	F	SP	Lt			9	0.6	12		
Austin*	King	F	SP	Lt	Menthol		9	0.6	12		
Austin*	King	F	SP	Ultra-Lt			4	0.3	6		
Austin*	King	NF	SP				21	1.1	17		
Barclay*	100	F	SP				5	0.4	4		
Barclay*	King	F	HP				3	0.2	2		
Barclay*	King	F	SP				3	0.2	2		
Bargain Buy*	100	F	SP	FF			13	0.8	17		
Bargain Buy*	100	F	SP	FF	Menthol		13	0.8	17		
Bargain Buy*	100	F	SP	Lt			9	0.6	12		
Bargain Buy*	100	F	SP	Lt	Menthol		9	0.6	11		

Brand Name

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Brand Name	Description	Tar	Nic	CO

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Brand Name	Description				Tar	Nic	CO
Camel	King	F	SP		17	1.2	19
Camel	King	F	SP	Lt	11	0.9	12
Camel	King	F	SP	Lt	Special		14
Camel	King	F	SP	Ultra-Lt		5	0.5
Camel				5	0.5	7	
	55King	F	14King	85 rent/beHFTD (14)55King	16.0	TD Ee06 0wbeebebebmebebe	F

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Brand Name	Description					Tar	Nic	CO
Carlton	100	F	SP	Lt	Menthol	2	0.2	2
Carlton	120	F	SP	Lt		5	0.5	4
Carlton	120	F	SP	Lt	Menthol	5	0.5	4
Carlton*	King	F	HP		Menthol	5	0.5	6
Carolina Gold	King	F	SP			16	1.2	15
Carolina Gold	King	F	SP		Menthol	17	1.3	17
Carolina Gold	King	F	SP	Lt		11	0.9	13
Cavalier*	King	NF	SP			21	1.1	17
Cavalier*	King	F	SP	Ultra-Lt		4	0.3	6
Cavalier*	King	F	SP	Lt	Menthol	9	0.6	12
Cavalier*	King	F	SP	Lt		9	0.6	12
Cavalier*	100	F	SP	FF		13	0.8 (SP) Tj36 05o7733 36 0	
Cavalier*	100	F	SP	Eavalier*	Menthol	100	1E100	0.8
Cavalier*	100	F	SP					17

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Brand Name	Description					Tar	Nic	CO				
Cimarron*	King	F	SP	Ultra			4	0.3	6			
Cimarron*	King	F	SP	Lt	Menthol		9	0.6	12			
Cimarron*	King	F	SP	Lt				9	0.6	12		
Cimarron*	100	F	SP	FF				13	0.8	17		
Cimarron*	100	F	SP	FF	Menthol				13	0.8	17	
Cimarron*	100	F	SP	Lt				9	0.6	12		
Cimarron*	100	F	SP	Lt	Menthol				9	0.6	11	
Cimarron*	100	F	SP	Ultra					4	0.3	8	
Cimarron*	King	F	HP	FF				14	0.8	15		
Cimarron*	King	F	HP	Lt				10	0.6	12		
Cimarron*	King	F	SP	FF				14	0.8	16		
Cimarron*	King	F	SP	FF	Menthol				14	0.8	16	
Citation*	King	NF	SP				21	1.1	17			
Citation*	King	F	SP	Ultra					4	0.3	6	
Citation*	King	F	SP	Lt	Menthol				9	0.6	12	
Citation*	King	F	SP	Lt				9	0.6	12		
Citation*	100	F	SP	FF				13	0.8	17		
Citation*	100	F	SP	FF	Menthol				13	0.8	17	
Citation*	100	F	SP	Lt				9	0.6	12		
Citation*	100	F	SP	Lt	Menthol				9	0.6	11	
Citation*	100	F	SP	Ultra					4	0.3	8	
Citation*	King	F	SP	FF				14	0.8	16		
Citation*	King	F	SP	FF	Menthol				14	0.8	16	
City*	100	F	HP	Lt				11	0.9	13		
City*	100	F	HP				16	1.3	16			
Class A Dlx*	King	NF	SP	FF				25	1.5	17		
Class A Dlx*	King	F	SP	Ultra-Lt					5	0.4	6	
Class A Dlx*	King	F	SP	Lt	Menthol				11	0.7	14	
Class A Dlx*	King	F	SP	Lt				11	0.7	14		
Class A*	100	F	SP	FF				16	0.9	23		
Class A*	100	F	SP	FF	Menthol				16	0.9	23	
Class A*	100	F	SP	Lt				10	0.7	16		
Class A*	100	F	SP	Lt	Menthol				10	0.7	16	
Class A*	100	F	SP	Ultra-Lt					6	0.4	8	
Class A*	100	F	SP	Ultra-Lt		Menthol				6	0.4	8
Class A*	King	F	SP	FF				15	0.8	19		
Class A*	King	F	SP	FF	Menthol				15	0.8	19	
Class A*	King	F	SP	Lt				11	0.7	14		
Class A*	King	F	SP	Lt	Menthol				11	0.7	14	
Class A*	King	F	SP	Ultra-Lt					5	0.4	6	
Class A*	King	F	SP	Ultra-Lt		Menthol				5	0.4	6

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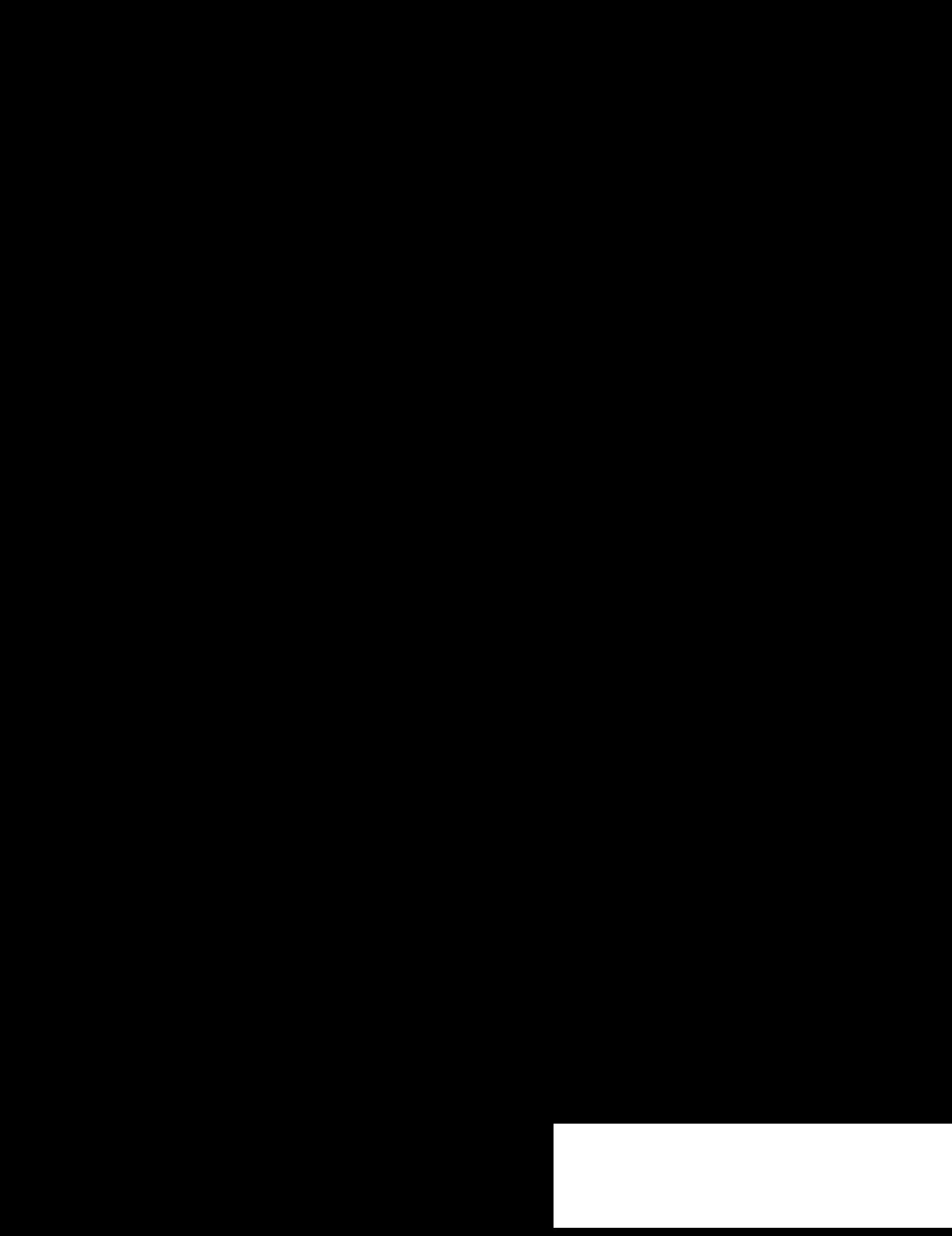
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Tar Nic CO

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Brand Name	Description					Tar	Nic	CO
Director's Choice*	100	F	SP	FF	Menthol	13	0.8	17
Director's Choice*	100	F	SP	Lt		9	0.6	12
Director's Choice*	100	F	SP	Lt	Menthol	9	0.6	11
Director's Choice*	100	F	SP	Ultra-Lt		4	0.3	8
Director's Choice*	King	F	HP	FF		14	0.8	15
Director's Choice*	King	F	HP	Lt		10	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	16
Doral	100	F	HP	Lt		11	0.7	14
Doral	100	F	HP	FF		13	0.8	16
Doral	King	NF	SP			19	1.0	16
Doral	King	F	SP	Ultra-Lt		4	0.3	6
Doral	100	F	SP	FF		12	0.8	17
Doral	100	F	SP	FF	Menthol	12	0.8	16
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	0.4	8
Doral	King	F	HP	FF		14	0.8	15
Doral	King	F	HP	Lt		8	0.6	12
Doral	King	F	SP	FF		13	0.8	16
Doral	King	F	SP	FF	Menthol	14	0.8	16
Doral	King	F	SP	Lt		9	0.6	12
Doral	King	F	SP	Lt	Menthol	8	0.6	12
Doral*	King	F	HP	FF	Menthol	13	0.8	16
English Ovals	King	NF	HP			25	2.0	15
Eve	100	F	HP	Slim-Lt		8	0.6	7
Eve	120	F	HP	Ultra-Lt	Slim	5	0.4	5
Eve	120	F	HP	Ultra-Lt	Menthol	5	0.4	5
Eve	120	F	HP	Lt	Menthol	11	0.8	11
Eve	120	F	HP	Lt		10	0.8	11
Eve*	100	F	HP	Lt	Menthol	7	0.6	6
Eve*	100	F	HP	Ultra-Lt		5	0.5	4
Eve*	100	F	HP	Ultra-Lt	Menthol	6	0.6	4
Extra Value*	King	NF	SP			21	1.1	17
Extra Value*	King	F	SP	Ultra-Lt		4	0.3	6
Extra Value*	King	F	SP	Lt	Menthol	9	0.6	12
Extra Value*	King	F	SP	Lt		9	0.6	12
Extra Value*	100	F	SP	FF		13	0.8	17
Extra Value*	100	F	SP	FF	Menthol	13	0.8	17
Extra Value*	100	F	SP	Lt		9	0.6	12
Extra Value*	100	F	SP	Lt	Menthol	9	0.6	11



Tar Nic CO

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Brand Name	Description					Tar	Nic	CO			
Horizon*	100	F	SP	Lt	Menthol		12	0.8	13		
Horizon*	100	F	SP	Lt			11	0.8	12		
Icebox*	King	F	HP	FF	Menthol		19	1.3	18		
Icebox*	King	F	HP	Lt	Menthol		11	0.9	13		
Jacks*	King	NF	SP				21	1.1	17		
Jacks*	King	F	SP	Ultra-Lt			4	0.3	6		
Jacks*	King	F	SP	Lt	Menthol		9	0.6	12		
Jacks*	King	F	SP	Lt				9	0.6	12	
Jacks*	100	F	SP	FF				13	0.8	17	
Jacks*	100	F	SP	FF	Menthol		13	0.8	17		
Jacks*	100	F	SP	Lt				9	0.6	12	
Jacks*	100	F	SP	Lt	Menthol		9	0.6	11		
Jacks*	100	F	SP	Ultra-Lt			4	0.3	8		
Jacks*	King	F	HP	FF				14	0.8	15	
Jacks*	King	F	HP	Lt				10	0.6	12	
Jacks*	King	F	SP	FF				14	0.8	16	
Jacks*	King	F	SP	FF	Menthol		14	0.8	16		
Jasmine	100	F	HP	Lt	Menthol	Slim	8	0.6	8		
Jasmine	100	F	HP	Lt			8	0.6	8		
Jasmine	100	F	HP	FF			10	0.7	11		
Jumbos	King	F	HP	Lt				11	0.9	12	
Jumbos	King	F	HP				17	1.2	19		
Kamel*	King	F	HP	Lt	Red		11	0.9	13		
Kamel*	King	F	HP				17	1.2	16		
Kamel*	King	F	HP				16	1.2	18		
Kamel*	King	F	HP	Lt	Menthol		12	1.0	13		
Kent	100	F	SP				13	1.0	13		
Kent	King	F	HP				11	0.8	12		
Kent	King	F	SP				12	0.9	13		
Kent Golden Lights	100	F	HP	Lt				9	0.8	11	
Kent Golden Lights	100	F	SP	Lt				9	0.8	11	
Kent Golden Lights	100	F	SP	Lt	Menthol		9	0.8	11		
Kent Golden Lights	King	F	HP	Lt				8	0.7	10	
Kent Golden Lights	King	F	SP	Lt				8	0.7	10	
Kent Golden Lights	King	F	SP	Lt	Menthol		8	0.7	10		
Kent III	100	F	HP	Ultra-Lt			5	0.5	7		
Kent III	100	F	SP	Ultra-Lt			5	0.5	6		
Kent III	King	F	SP	Ultra-Lt			4	0.4	4		
Kool	100	F	SP	Lt	Menthol				8	0.7	9
Kool	100	F	SP	Mild	Menthol				10	0.9	11
Kool	100	F	SP	Super	Menthol	Long	17	1.3	15		

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Brand Name	Description					Tar	Nic	CO
Marlboro	King	F	SP	Lt		10	0.8	11
Marlboro	King	F	SP	Medium		12	0.9	13
Marlboro	King	F	SP		25-pk	16	1.1	15
Marlboro	King	F	SP	Lt	25-pk	10	0.8	12
Maverick*	100	F	SP			15	1.1	15
Maverick*	100	F	SP	Lt		9	0.7	10
Maverick*	King	F	HP			13	0.9	14
Maverick*	King	F	HP	Lt		10	0.7	9
Maverick*	King	F	SP			14	1.0	14
Maverick*	King	F	SP	Lt		8	0.6	9
Max	120	F	SP			16	1.3	17
Max	120	F	SP	Menthol		16	1.3	17
Medley*	King	F	SP	Lt	Menthol	10	0.7	NA
Merit	100	F	HP	Ultima		2	0.2	4
Merit	100	F	HP	Ultra-Lt		5	0.5	7
Merit	100	F	SP			9	0.8	11
Merit	100	F	SP	Menthol		9	0.8	10
Merit	100	F	SP	Ultima		2	0.2	4
Merit	100	F	SP	Ultra-Lt		5	0.5	7
Merit	100	F	SP	Ultra-Lt	Menthol	5	0.5	7
Merit	King	F	HP			7	0.6	9
Merit	King	F	HP	Ultima		1	0.1	3
Merit	King	F	HP	Ultra-Lt		5	0.5	6
Merit	King	F	SP			7	0.6	9
Merit	King	F	SP	Menthol		7	0.6	9
Merit	King	F	SP	Ultima		1	0.1	3
Merit	King	F	SP	Ultra-Lt		4	0.4	6
Merit	King	F	SP	Ultra-Lt	Menthol	4	0.4	5
Metro	100	F	HP	Slim-Lt	Menthol	9	0.8	13
Metro	100	F	HP	Lt	Slim	9	0.8	9
Misty Slims	100	F	HP	FF	Slim	14	1.1	13
Misty Slims	100	F	HP	FF	Menthol	14	1.1	13
Misty Slims	100	F	HP	Lt	Slim	8	0.7	8
Misty Slims	100	F	HP	Lt	Menthol	7	0.7	7
Misty Slims	100	F	HP	Ultra-Lt	Slim	5	0.5	5
Misty Slims	100	F	HP	Ultra-Lt	Menthol	5	0.5	5
Misty Slims	120	F	HP	Lt	Slim	12	1.0	11
Misty Slims	120	F	HP	Lt	Menthol	12	1.0	11
Misty Slims*	100	F	HP	Ultra-Lt		6	0.5	6
Monaco*	100	F	SP	FF		13	0.8	17
Monaco*	100	F	SP	FF	Menthol	13	0.8	17

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Brand Name	Description					Tar	Nic	CO
Monaco*	100	F	SP	Lt				9 0.6 12
Monaco*	100	F	SP	Lt	Menthol			9 0.6 11
Monaco*	100	F	SP	Ultra-Lt			4 0.3 8	
Monaco*	King	F	SP	FF				14 0.8 16
Monaco*	King	F	SP	FF	Menthol			14 0.8 16
Monaco*	King	F	SP	Lt				9 0.6 12
Monaco*	King	F	SP	Lt	Menthol			9 0.6 12
Monaco*	King	F	SP	Ultra-Lt			4 0.3 6	
Monaco*	King	NF	SP				21 1.1 17	

6 Tc (F) Tj 36 0 TD -0.504 Tc51c (Monaco*) Tj 117 0 TD 0 Tc (King) Tj 45 0 TDoTc51c (c (Monaco*) Tj 117 6 0 TD (17) Tj -463.5 -14.25 TD 0.0729jenthol) T
 .604 Tc (SP) Tj 36 0 T5j 36 0 TD (17) Tj708 0 -463.5 -14.2holL

1

0 TDTD -0.504 Tc (SP) Tj 36 0 T4 Tc (SP) Tj 36 0 TD -0.2505 Tc (Lt) Tj 46 0 TD -0.H-0.5045KingSP

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Brand Name	Description					Tar	Nic	CO
Pilot*	King	F	HP	FF		14	0.8	15
Pilot*	King	F	HP	Lt		10	0.6	12
Pilot*	King	F	SP	FF		14	0.8	16
Pilot*	King	F	SP	FF	Menthol	14	0.8	16
Pilot*	King	F	SP	Lt		9	0.6	12
Pilot*	King	F	SP	Lt	Menthol	9	0.6	12
Pilot*	King	F	SP	Ultra-Lt		4	0.3	6
Pilot*	King	NF	SP			21	1.1	17
Planet*	King	F	HP			15	1.0	14
Planet*	King	F	HP	Lt		10	TD 0 HP (KTc (1 0 TD 0-0.2505	

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Brand Name	Description					Tar	Nic	CO
Quality Smokes*	100	F	HP	Lt		10	0.7	12
Quality Smokes*	100	F	SP	FF		13	0.8	17
Quality Smokes*	100	F	SP	FF	Menthol	13	0.8	17
Quality Smokes*	100	F	SP	Lt		9	0.6	12
Quality Smokes*	100	F	SP	Lt	Menthol	9	0.6	11
Quality Smokes*	100	F	SP	Ultra-Lt		4	0.3	8
Quality Smokes*	King	F	HP	FF		15	0.8	16
Quality Smokes*	King	F	HP	Lt		10	0.6	12
Quality Smokes*	King	F	SP	FF		14	0.8	16
Quality Smokes*	King	F	SP	FF	Menthol	14	0.8	16
Quality Smokes*	King	F	SP	Lt		9	0.6	12
Quality Smokes*	King	F	SP	Lt	Menthol	9	0.6	12
Quality Smokes*	King	F	SP	Ultra-Lt		4	0.3	6
Quality Smokes*	King	NF	SP			21	1.1	17
Rainbow*	100	F	SP	FF		13	0.8	17
Rainbow*	100	F	SP	Lt		9	0.6	12
Rainbow*	100	F	SP	Lt	Menthol	9	0.6	11
Rainbow*	100	F	SP	Ultra-Lt		4	0.3	8
Rainbow*	King	F	SP	FF		14	0.8	16
Rainbow*	King	F	SP	Lt		9	0.6	12
Rainbow*	King	F	SP	Lt	Menthol	9	0.6	12
Raleigh	100	F	SP			16	1.0	15
Raleigh	100	F	SP	Lt		12	1.0	12
Raleigh	King	F	SP			16	0.9	15
Raleigh	King	F	SP	Lt		11	0.9	11
Raleigh	Reg	NF	SP	Plain		21	1.2	14
Raleigh Extra	100	F	SP			14	0.9	16
Raleigh Extra	100	F	SP	Lt		10	0.7	13
Raleigh Extra	100	F	SP	Lt	Menthol	8	0.6	8
Raleigh Extra	100	F	SP	Ultra-Lt		5	0.4	6
Raleigh Extra	King	F	SP			15	0.9	15
Raleigh Extra	King	F	SP	Lt		10	0.6	11
Raleigh Extra	King	NF	SP			22	1.2	14
Reno*	100	F	SP	FF		17	0.9	22
Reno*	100	F	SP	FF	Menthol	17	0.9	22
Reno*	100	F	SP	Lt		12	0.7	17
Reno*	100	F	SP	Lt	Menthol	12	0.7	17
Reno*	King	F	SP	FF		15	0.8	19
Reno*	King	F	HP	FF		15	0.8	19
Reno*	King	F	HP	FF	Menthol	15	0.8	19
Richland 20's	100	F	SP			16	1.2	15

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Brand Name	Description					Tar	Nic	CO
Sebring*	100	F	SP	Lt				9 0.6 12
Sebring*	100	F	SP	Lt	Menthol			9 0.6 11
Sebring*	100	F	SP	Ultra-Lt			4 0.3 8	
Sebring*	King	F	SP	FF				14 0.8 16
Sebring*	King	F	SP	FF	Menthol			14 0.8 16
Sebring*	King	F	SP	Lt				9 0.6 12
Sebring*	King	F	SP	Lt	Menthol			9 0.6 12
Sebring*	King	F	SP	Ultra-Lt			4 0.3 6	
Sebring*	King	NF	SP				21 1.1 17	
Sedona*	King	F	HP				16 1.2 16	
Sedona*	King	F	HP	Lt				11 0.9 13
Shenandoah*	100	F	SP				Generic 16 1.0 NA	
Shenandoah*	100	F	SP	Menthol			Generic 16 1.0 NA	
Shenandoah*	100	F	SP	Lt				Generic 11 0.7 NA
Shenandoah*	100	F	SP	Lt	Menthol			Generic 11 0.8 NA
Shenandoah*	100	F	SP	Ultra-Lt			Generic 6 0.5 NA	
Shenandoah*	King	F	SP	Menthol			Generic 16 1.0 NA	
Shenandoah*	King	F	SP	FF				Generic 16 1.0 NA
Shenandoah*	King	F	SP	Lt				Generic 11 0.7 NA
Shenandoah*	King	F	SP	Lt	Menthol			Generic 11 0.7 NA
Shenandoah*	King	F	SP	Ultra-Lt			Generic 6 0.5 NA	
Shenandoah*	King	NF	SP				Generic 24 1.6	

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Brand Name	Description					Tar	Nic	CO
Signature*	King	F	SP	Lt	Menthol	9	0.6	12
Signature*	King	F	SP	Ultra-Lt		4	0.3	6

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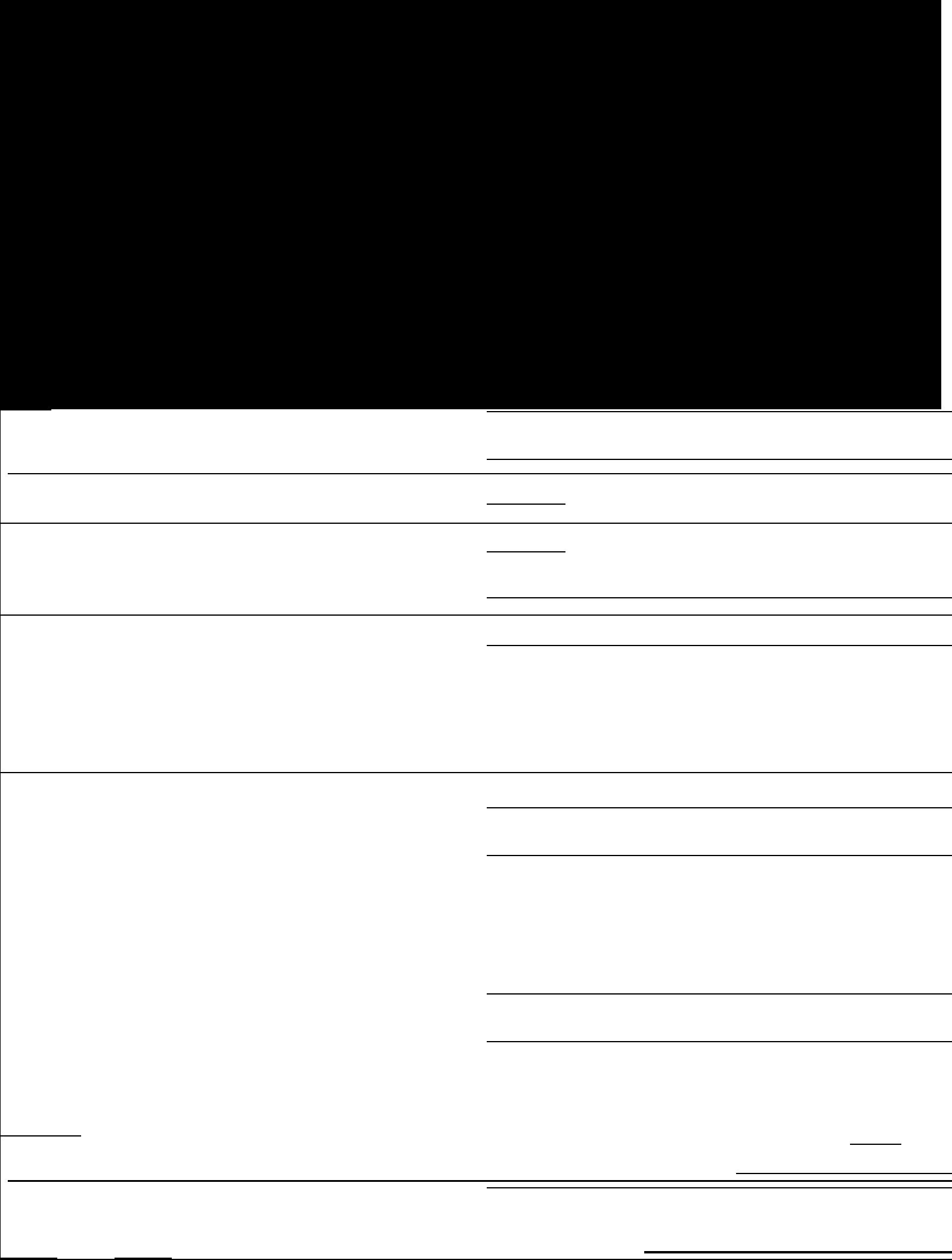
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Brand Name	Description					Tar	Nic	CO						
Stockton*	King	F	SP	Ultra-Lt			4	0.3	6					
Stride*	100	F	SP	FF			16	1.3	21					
Stride*	King	F	SP	FF			14	1.1	18					
Style	100	F	HP	Lt				11	0.9	14				
Style	100	F	HP	Lt	Menthol				12	0.9	14			
Style	100	F	HP	Slim-Lt					10	0.8	11			
Style	100	F	HP	Slim-Lt		Menthol				10	0.8	11		
Style	100	F	SP	Lt						12	0.9	14		
Style	100	F	SP	Lt	Menthol				12	0.9	14			
Summit	100	F	SP	FF						14	0.9	16		
Summit	100	F	SP	FF		Menthol				15	1.1	15		
Summit	100	F	SP	Lt						11	0.8	13		
Summit	100	F	SP	Lt	Menthol				9	0.8	9			
Summit	100	F	SP	Ultra-Lt						5	0.4	6		
Summit	King	F	HP	FF						15	1.1	14		
Summit	King	F	HP	Lt						10	0.8	12		
Summit	King	F	SP	FF						16	0.9	15		
Summit	King	F	SP	FF		Menthol				14	1.0	13		
Summit	King	F	SP	Lt						10	0.8	11		
Summit	King	F	SP	Lt	Menthol				11	0.8	11			
Summit	King	F	SP	Ultra-Lt						5	0.5	7		
Summit	King	NF	SP									23	1.5	16
Sundance*	100	F	SP	FF						13	0.8	17		
Sundance*	100	F	SP	FF		Menthol				13	0.8	17		
Sundance*	100	F	SP	Lt						9	0.6	12		
Sundance*	100	F	SP	Lt	Menthol							9	0.6	11
Sundance*	100	F	SP	Ultra-Lt						4	0.3	8		
Sundance*	King	F	HP	FF						14	0.8	15		
Sundance*	King	F	HP	Lt						10	0.6	12		
Sundance*	King	F	SP	FF						14	0.8	16		
Sundance*	King	F	SP	FF		Menthol				14	0.8	16		
Sundance*	King	F	SP	Lt						9	0.6	12		
Sundance*	King	F	SP	Lt	Menthol							9	0.6	12
Sundance*	King	F	SP	Ultra-Lt						4	0.3	6		
Sundance*	King	NF	SP									21	1.1	17
Tall	120	F	SP	FF						19	1.4	19		
Tall	120	F	SP	FF		Menthol				18	1.5	17		
Tareyton	100	F	SP	FF						13	1.0	16		
Tareyton	100	F	SP	Lt							7	0.6	8	
Tareyton	King	F	SP	FF						14	1.0	14		
Tareyton	King	F	SP	Lt						6	0.5	6		

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Brand Name	Description					Tar	Nic	CO		
Tareyton, Herbert	King	NF	SP				25	1.5	17	
Tempo*	100	F	SP	FF				13	0.8	17
Tempo*	100	F	SP	FF	Menthol			13	0.8	17
Tempo*	100	F	SP	Lt				9	0.6	12
Tempo*	100	F	SP	Lt	Menthol			9	0.6	11
Tempo*	100	F	SP	Ultra-Lt			4	0.3	8	
Tempo*	King	F	SP	FF				14	0.8	16
Tempo*	King	F	SP	FF	Menthol			14	0.8	16
Tempo*	King	F	SP	Lt				9	0.6	12
Tempo*	King	F	SP	Lt	Menthol			9	0.6	12
Tempo*	King	F	SP	Ultra-Lt			4	0.3	6	
Tempo*	King	NF	SP				21	1.1	17	
Top Choice*	100	F	SP	FF	Generic			16	1.0	NA
Top Choice*	100	F	SP	FF	Menthol	Generic	16	1.0	NA	
Top Choice*	100	F	SP	Lt	Generic			11	0.7	NA
Top Choice*	100	F	SP	Lt	Menthol	Generic	11	0.8	NA	
Top Choice*	100	F	SP	Ultra-Lt			6	0.5	NA	
Top Choice*	King	F	SP	FF	Generic			16	1.0	NA
Top Choice*	King	F	SP	Lt	Generic			11	0.7	NA
Top Choice*	King	F	SP	Lt	Menthol	Generic	11	0.7	NA	
Top Choice*	King	F	SP	Ultra-Lt			6	0.5	NA	
Top Choice*	King	NF	SP	Generic			24	1.6	NA	
Tri-Brand*	100	F	SP	FF				13	0.8	17
Tri-Brand*	100	F	SP	Lt				9	0.6	12
Tri-Brand*	100	F	SP	Lt	Menthol		9	0.6	11	
Tri-Brand*	100	F	SP	Ultra-Lt			4	0.3	8	
Tri-Brand*	King	F	HP	Lt				10	0.6	12
Tri-Brand*	King	F	SP	FF				14	0.8	16
Tri-Brand*	King	F	SP	Lt				9	0.6	12
Tri-Brand*	King	F	SP	Lt	Menthol		9	0.6	12	
Tri-Brand*	King	F	SP	Ultra-Lt			4	0.3	6	
Tri-Brand*	King	NF	SP				21	1.1	17	
Triumph	King	F	SP				4	0.4	4	
Triumph	King	F	SP	Menthol			4	0.4	5	
Triumph	100	F	SP	Menthol			5	0.5	6	
True	100	F	HP				6	0.5	6	
True	100	F	SP				6	0.6	7	
True	100	F	SP	Menthol			6	0.5	6	
True	King	F	HP				4	0.4	5	
True	King	F	SP				4	0.4	5	
True	King	F	SP	Menthol			4	0.4	5	



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Brand Name	Description					Tar	Nic	CO	
Winston	100	F	HP	Slim-Lt		Select	9	0.8	9
Winston	100	F	HP	Ultra-Lt			6	0.6	9
Winston	100	F	SP				16	1.2	17
Winston	100	F	SP	Lt			10	0.8	13
Winston	100	F	SP		Select		16	1.3	15
Winston	100	F	SP	Ultra-Lt			4	0.4	7
Winston	King	F	HP				16	1.1	16
Winston	King	F	HP		Select		16	1.2	17
Winston	King	F	HP	Lt			11	0.9	12
Winston	King	F	HP	Lt	Select		10	0.8	11
Winston	King	F	HP	Ultra-Lt			5	0.5	8
Winston	King	F	SP				16	1.1	15
Winston	King	F	SP	Select			16	1.2	15
Winston	King	F	SP	Lt			10	0.8	12
Winston	King	F	SP	Lt	Select		11	0.9	13
Winston	King	F	SP	Ultra-Lt			5	0.5	8
Winston	100	F	HP		Select		16	1.3	15
Winston*	100	F	HP	Lt	Select		10	0.9	11
Winston*	100	F	SP	Lt	Select		10	0.8	11
Worth*	100	F	SP	FF			13	0.8	17
Worth*	100	F	SP	FF	Menthol		13	0.8	17
Worth*	100	F	SP	Lt			9	0.6	12
Worth*	100	F	SP	Lt	Menthol		9	0.6	11
Worth*	100	F	SP	Ultra-Lt			4	0.3	8
Worth*	King	F	HP	FF			14	0.8	15
Worth*	King	F	HP	Lt			10	0.6	12
Worth*	King	F	SP	FF			14	0.8	16
Worth*	King	F	SP	FF	Menthol		14	0.8	16
Worth*	King	F	SP	Lt			9	0.6	12
Worth*	King	F	SP	Lt	Menthol		9	0.6	12
Worth*	King	F	SP	Ultra-Lt			4	0.3	6
Worth*	King	NF	SP				21	1.1	17