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**A STUDY OF METRIC CONVERSION OF
DISTILLED SPIRITS CONTAINERS:
A POLICY AND PLANNING EVALUATION**

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Task 1
Comprehensive Report on the Conversion Process

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August 5, 1981

by:

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resulting from the conversion, (6) an analysis of the impact of the conversion on prices of distilled spirits, (7) an analysis of the impacts on consumption, profitability, industry structure, and size, product and brand preferences, (8) a summary of the findings and conclusions from the assessment of the process, and (9) (the appendix) a detailed chronology of events.

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A STUDY OF METRIC CONVERSION OF DISTILLED SPIRITS CONTAINERS: A POLICY AND PLANNING EVALUATION



Task 1

Comprehensive Report on the Conversion Process

August 5, 1981

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This document was prepared by Applied Concepts Corporation for the United States Metric Board (USMB) under a contract through the U.S. Department of Commerce. Its content is not necessarily endorsed by USMB or the U.S. Department of Commerce. Applied Concepts gratefully acknowledges the cooperation and assistance provided to the research team over the course of this study by the U.S. Bureau of Alcohol, Tobacco, and Firearms, the Distilled Spirits Council of the United States, numerous industry firms and trade associations, numerous state alcohol beverage control authorities, and the technical staff of USMB. Nevertheless, Applied Concepts Corporation is solely responsible for the content of this report.

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Foreword

This report is the Task I deliverable for "A Study of Metric Conversion of Distilled Spirits Containers: A Policy and Planning Evaluation" (contract number AA-80-SAC-X8602) performed by Applied Concepts Corporation for the United States Metric Board (USMB). The objective of the study is to assess USMB's Planning Guidelines in the light of lessons learned in a conversion that has recently occurred; namely, the conversion of containers for distilled spirits beverages. This Task I report is entitled "Comprehensive Report on the Conversion Process", as per the contractual statement of work. It establishes the historical baseline regarding events that occurred, the reasons for these events, their impacts, and the lessons learned in this conversion that may be meaningful for other industries. This Task I report does not attempt to assess USMB's planning guidelines. It lays the groundwork for such an assessment in later tasks.

This report contains eight chapters and an Appendix. Chapter I presents a brief overview of the distilled spirits industry in order to understand the context of events and issues addressed in later chapters. Chapter II analyzes the motivation phase, during which a consensus was reached within the industry that conversion was a desirable objective and should be pursued. Chapter III analyzes the planning phase, when the details of the conversion were discussed and decided upon by the parties involved. Chapter IV describes and analyzes the events, issues, and problems of the implementation phase of the conversion. In Chapter V, the costs and savings resulting from the conversion are analyzed. Chapter VI analyzes the impacts of the conversion on prices, and Chapter VII the impacts on consumption, profitability, industry structure, and size, product, and brand

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preferences. Chapter VIII summarizes the important findings and conclusions from this research. Lastly, an Appendix entitled "Detailed Chronology of Events" presents in chronological order the dates and descriptions of events and activities related to the conversion which were uncovered during the course of this research.

The principal investigator and author of this report was Mr. James A. Simpson, Applied Concepts' Corporate Vice President. Dr. Steve L. Barsby served as a consultant to the project .

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CHAPTER I

OVERVIEW OF THE DISTILLED SPIRITS INDUSTRY

A. Regulation

The U.S. Bureau of Alcohol, Tobacco, and Firearms (BATF) of the Department of the Treasury regulates container sizes for distilled spirits products sold in the United States. BATF regulations establish the allowable sizes--termed "standards of fill"--that may be sold in the United States. BATF regulates the content of container labels and has other broad regulatory powers under the Federal Alcohol Administration and Internal Revenue Acts governing commercial activities of suppliers. The Federal Alcohol Administration Act specifically grants BATF the authority to issue regulations on the size and contents of containers which, "... will prohibit deception of the consumer with respect to such products or the quantity thereof".

Before the spirits industry's conversion to metric container sizes, there were 10 allowable customary sizes for distilled spirits products entering interstate commerce. There was one other size--the 1/4 pint or 4 oz--that was allowed to be sold intrastate. Imported spirits had to comply with the size standards. Cordials, liqueurs, and specialty products (both domestic and imported), however, were exempted from the size requirements. As a result, the actual number of different container sizes in the U.S. probably was about 50. Figure I-1 presents the principal customary sizes in use before the conversion and their percentage of the market in 1975, the last full calendar year before the introduction of metric sizes.

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Figure I-1
Principal Customary Sizes Before Conversion to Metric
(1975)

Size	Equivalent Fluid Ounces	Percentage of Total, by Volume ¹	Percentage of Total, by Number Bottles ¹
Gallon	128.0	0.1	.1
Half-Gallon	64.0	18.2	6.1
Quart	32.0	33.6	22.6
"Fifth" (4/5 Quart)	25.6	25.3	21.3
3/4 Quart	24.0	2.6	2.3
Pint	16.0	8.5	11.4
4/5 Pint	12.8	2.0	3.4
3/4 Pint	12.0	0.5	1.0
Half-Pint	8.0	8.4	22.5
1/8 Pint	2.0		
1/10 Pint	1.6	0.7	9.4
1/16 Pint	1.0		

¹Numbers do not total to 100% due to rounding.

Source: DISCUS' Annual Statistical Review, 1980.
Computed from strip stamp data on pages 45-46.

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In addition to the U.S. BATF regulations, every state regulates the conditions under which alcohol beverages are produced, distributed, and sold within their own borders. This authority was given them under the 21st amendment which ended Prohibition. When conflicts between federal and state regulations occur, the more restrictive regulation (either state or federal) applies. These state regulations frequently specify minimum and maximum container size which may be sold.

The distilled spirits industry is structured into three tiers--producers (called "suppliers" in the industry and throughout the remainder of this report), wholesalers (distributors), and retailers. Federal law prohibits suppliers and wholesalers from having any ownership interest in retail outlets. Suppliers typically distill, age, and bottle spirits products and ship to wholesalers who in turn, distribute to retail outlets. In 1972, there were approximately 76 distillers in the U.S. producing beverage distilled spirits products (excluding brandy) at approximately 128 plants.¹ There are approximately 1,200 active spirits distributors and 56,242 off-premise retail outlets in the U.S.²

In 32 states and the District of Columbia, private individuals can secure licenses to conduct the wholesale or retail sale of distilled spirits beverages. These are commonly known as "license states". In 18 states (and Montgomery County, Maryland), governments themselves engage in various ways in the sale of distilled spirits. These states are commonly known as "control states" or "monopoly states". Their Alcohol Beverage Control Commissions buy directly from suppliers and, generally, sell to the consumer through their own government-owned and operated stores. Several control states

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license private individuals to operate individual retail outlets on a commission basis. Mississippi and Wyoming operate monopolies only at the wholesale level. Control states typically stock and sell fewer different brands and sizes than wholesalers and retailers in license states.

There are also 453 counties in 15 states which are legally "dry", although some of these counties permit sale in private clubs.³ Airlines and railroads are permitted to purchase directly from suppliers.

B. Taxes

In addition to being highly regulated, the distilled spirits industry is also highly taxed. There is a federal excise tax (F.E.T.) of \$10.50 per proof gallon (unchanged since 1951) on all distilled spirits beverages sold in the U.S. A proof gallon is a standard U.S. gallon of 231 cubic inches (128 fluid ounces) containing 50 percent by volume of ethyl alcohol. Thus, the higher the proof the higher the tax on the liquid gallon. There is a U.S. customs duty on imports which ranges from \$.43 per proof gallon (for Scotch and Irish whisky) to \$3.40 per proof gallon (for a Yugoslavian brandy).⁴ The U.S. Customs Bureau also establishes limits on the duty free exemption allowed for U.S. tourists returning from abroad.

All license states have special distilled spirits taxes, termed state excise taxes. These taxes in 1979 ranged from approximately \$1.50 to \$4.75 per liquid gallon (not proof gallon). Hawaii has a 20% ad valorem excise tax.⁵ Control states also tax spirits

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products. They can price the product at a level that, although called a profit, is in effect, a tax. There are also rectification, occupational, and sales taxes levied on spirits. License state excise tax rates increased considerably over the decade of the seventies--approximately 13% between 1970-1975 and 16% overall for the decade.⁶

Based primarily upon IRS data, the Distilled Spirits Council of the United States (DISCUS), the major industry trade association of suppliers, estimates that in 1979 total public revenues derived from distilled spirits taxes and duties (excluding sales taxes) amounted to approximately \$6.9 billion.⁷ They estimate that, overall, slightly under half the off-premise (package store) purchase price of distilled spirits beverages consists of taxes.⁸ Overall, suppliers receive approximately 24% of the distilled spirits beverage's final selling price.

C. Bottle Sizes

In 1975, the last full calendar year preceding the conversion, approximately 2.46 billion bottles of distilled spirits beverages were bottled in or imported into the United States.⁹ By far, the largest selling sizes, in terms of the number of bottles sold, were the quart (32 oz.), the half-pint (8 oz.), and the "fifth" (4/5 qt., 25.6 oz.), numbering approximately 556 million, 553 million, and 524 million bottles, respectively. These three sizes together accounted for roughly two-thirds of all bottles filled (see Figure I-1).¹⁰ No other single size approaches anywhere near these levels. In terms of volume of product, however, the three overwhelmingly predominant sizes were the quart, "fifth", and half-gallon sizes. Of the 413 million gallons bottled in 1975, these accounted for

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approximately 139 million, 105 million, and 75 million gallons, respectively. Together these three sizes accounted for roughly 77 percent of total distilled spirits volume (again, see Figure I-1).¹¹ Between 1970 to 1975, there had been a trend away from the "fifth" (19% decrease) and toward the quart (13% increase), and an increased use of the half-gallon. Between 1970 to 1975, the number of half-gallons bottled more than doubled.

D. Industry Structure

Most economists and industry experts consider the distilled spirits industry at the supplier level to be competitive, with intense price and product competition in most product areas. This was not always the case.

The structure of the distilled spirits industry has changed substantially since prohibition, when the legal industry was effectively eliminated in the U.S. Prohibition was repealed in 1933, and by 1939 18 distilleries were licensed. The top two firms controlled 70-75 percent of the market. Two Canadian firms soon opened U.S. subsidiaries, and for many years thereafter the top four firms accounted for 70-80 percent of industry sales.¹²

Since World War II, the market share of the top four firms and top eight firms has steadily declined. In 1947, the four-firm concentration ratio was approximately 75 percent and eight-firm concentration ratio 86 percent. The primary change in industry structure since World War II has been a decrease in the dominance of the "Big Four" and a more even distribution of market shares among the top eight firms. By 1975, the four

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largest firms accounted for approximately 50 percent of brand sales in the U.S., with shares of approximately 21 percent, 10 percent, 10 percent and 9 percent.¹³ The eight largest firms accounted for approximately 71 percent of brand sales; the top 20 firms for roughly 90 percent.¹⁴ As a point of perspective, the average four-firm concentration ratio of the 400 industries covered by the Bureau of the Census' Census of Manufacturers has been relatively steady since World War II, ranging between 36 percent and 38 percent.¹⁵

The standard four-firm or eight-firm concentration ratio probably understates the degree of competition present in the distilled spirits industry. This is because of the large number of different brands available to consumers. DISCUS has estimated that there are about 3,300 active distilled spirits brands. Despite advertising claims, taste differences among competing products of a single type (e.g., Bourbon) are not very large, especially to untrained consumers. As a result, consumers frequently consider a number of brands as being virtually interchangeable, and small changes in established price relationships can induce a change in brands purchased. Additionally, distilled spirits products of one type (e.g., Bourbon) compete with those of other types (e.g., blends and Canadian Whisky). Thus, the competition is wider than just within one type of product. Finally, distilled spirits compete moderately closely with wine, and somewhat less closely with beer. There is an "alcohol beverage market" in which all products must compete.

The large firms typically have extensive international operations, especially in Canada. They are heavily involved with wine, liqueurs, and pre-mixed cocktails.

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There are numerous small firms which together account for a very small proportion of total sales. For all firms, large and small, product differentiation (through advertising and packaging) and a carefully conceived and executed product pricing strategy are perceived to be the two factors critical to maintaining and enhancing market share. Most, if not all, suppliers purchase their containers from outside suppliers.

The wholesale and retail tiers of the industry are run as government monopolies in control states. The character of the wholesale and retail tiers in license states varies greatly from state to state and locality to locality, depending upon the laws and regulations under which they must operate. Some states permit suppliers to sell to any distributor who requests the product; others are organized on a regional basis. Some states prescribe the basis for wholesaler and retailer markups; some do not. Some states allow retail chain stores; some do not. Retailers typically buy from local distributors, but permitted operations and practices vary greatly from state to state and locality to locality. Probably the most perceptive description of the context in which the tiers below the supplier operate was stated by a supplier company executive as "fifty-one independent fiefdoms".

E. Consumption

During the 1960's, consumption of distilled spirits products in the U.S. exhibited a strong, upward trend. Since the early 1970's, consumption per adult of drinking age has remained fairly constant at about 3 gallons per year. Increases in aggregate consumption now primarily reflect growth in the drinking age population. This is the reverse situation

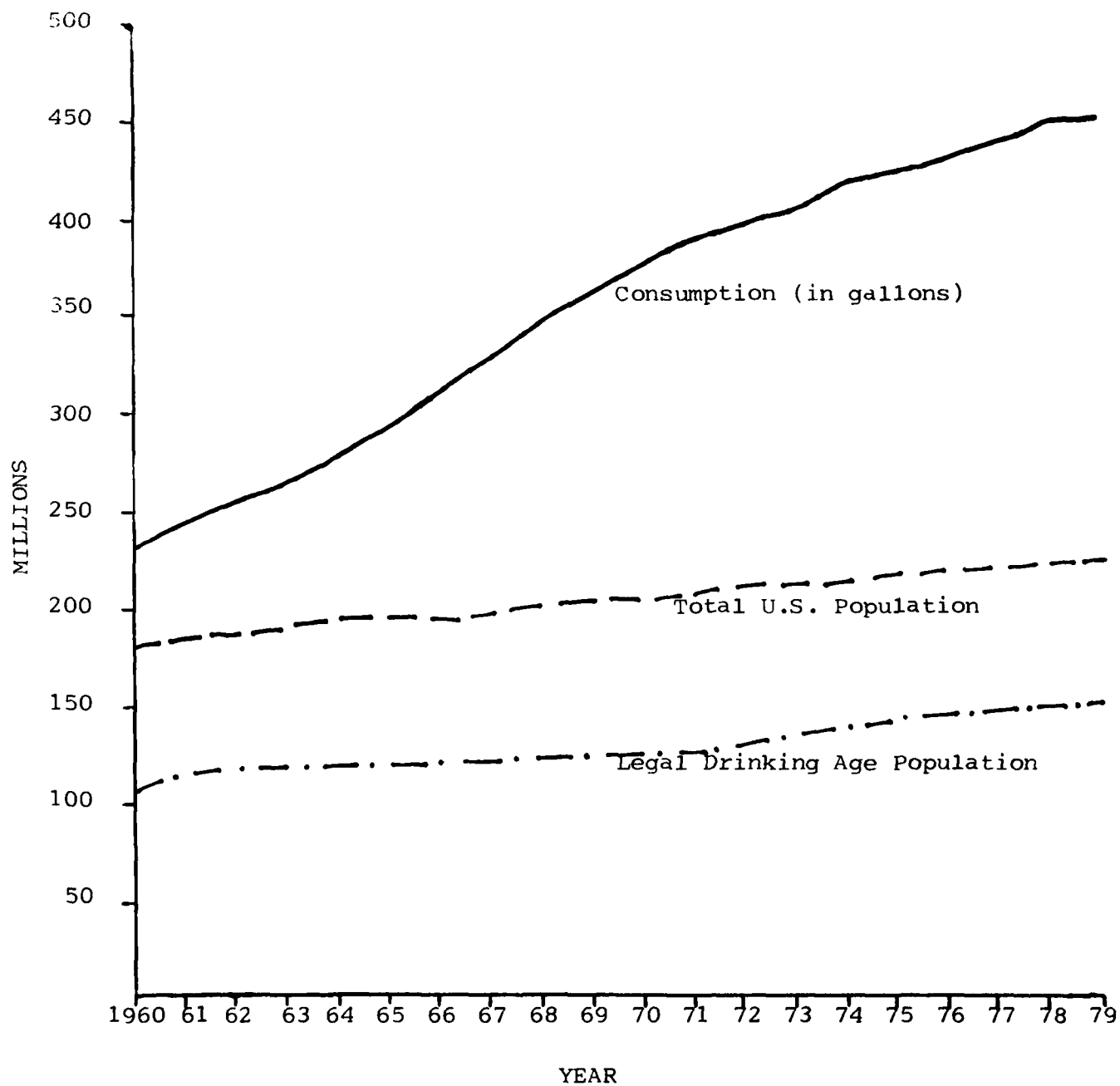
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of the fifties and sixties, which saw substantial increases in consumption per capita but more modest increases in the drinking age population. Figures I-2 and I-3 depict changes in population and consumption in the U.S. from 1960-1979.

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Figure I-2

Apparent Consumption of Distilled Spirits vs. Population



Source: 1980 Liquor Handbook

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Figure I-3

Consumption of Distilled Spirits Per Capita and Per Capita of Legal Drinking Age Population (Gallons)

<u>Year</u>	<u>Consumption Per Capita</u>	<u>Consumption Per Capita of Drinking Age Population</u>
1960	1.31	2.17
1961	1.33	2.21
1962	1.37	2.30
1963	1.38	2.32
1964	1.44	2.44
1965	1.52	2.58
1966	1.58	2.68
1967	1.64	2.79
1968	1.73	2.91
1969	1.80	3.01
1970	1.83	3.05
1971	1.85	3.06
1972	1.89	3.00
1973	1.93	3.01
1974	1.97	3.03
1975	1.99	3.02
1976	1.99	2.98
1977	2.00	2.98
1978	2.04	3.01
1979	2.04	2.99

Source: 1980 Liquor Handbook

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Chapter I - Footnotes

1. "Market Structure in the Beer, Wine, and Distilled Spirits Industries in the United States and California", Ornstein and Kiholm, UCLA Graduate School of Management, unpublished, 1980, p. 60.
2. Number of active wholesalers obtained from officials at Wine and Spirits Wholesalers of America, Inc.; the number of retailers from the 1980 Liquor Handbook, Gavin-Jobson Associates, Inc., New York, NY., p. 117.
3. DISCUS' 1979 Annual Statistical Review, p. 49.
4. Quote from U.S. Customs official.
5. DISCUS' 1979 Annual Statistical Review, p. 5.
6. Ibid.
7. Ibid., p. 2.
8. DISCUS Fact Book, 1976, p. 41.
9. DISCUS' 1979 Annual Statistical Review, p. 45.
10. Ibid.
11. Ibid.
12. Ornstein and Kiholm, p. 57.
13. Ibid., p. 61 and 65.
14. Ibid., p. 65 and 62.
15. Ibid., p. 12.

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CHAPTER II THE MOTIVATION PHASE (1972 through 1973)

A. Background

In the early 1970's, domestic wine and spirits firms became increasingly alarmed over the container sizes of imported wines and liqueurs. Many were being imported into the U.S. in sizes just under the comparative U.S. sizes allowed by BATF regulations for domestically bottled products. Domestic wine and spirits suppliers believed this practice, although legal, gave foreign producers an unfair competitive advantage. They also believed this was deceptive to consumers. The imported bottles were often configured (with push-up bottoms, etc.) so it was impossible to distinguish between the U.S. and imported sizes without reading the contents on the label or bottle.

In late 1971, the Wine Institute, the major trade association of U.S. (California) wine suppliers, petitioned BATF to restrict imported wines to the same (customary) sizes as allowed for domestic wines. After much discussion and a public hearing on the matter, BATF rejected the petition. BATF ruled that because a recent National Bureau of Standards' study had recommended a 10-year U.S. conversion to the metric system, it would be inappropriate to require imported wines to convert to customary U.S. sizes.

The problem continued. Two years later the Wine Institute petitioned BATF to establish metric sizes with which all wines sold in the U.S. would have to comply. This

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petition met little opposition and metric wine sizes were ultimately established. The optional introduction period for wine began January 1, 1975; the mandatory period began January 1, 1979.

Many of the same firms that produce or trade in wine also produce or trade in distilled spirits. Many wineries produce brandy (distilled from wine) and spirits. A number of the larger firms own both wineries and distilleries and produce a range of products including wine, liqueurs, whiskies, vodkas, gins, etc. Many of these same firms are also importers of both wine and distilled spirits products. Many members of the Wine Institute were also members of the Distilled Spirits Institute (DSI, which later became the Distilled Spirits Council of the U.S. -- DISCUS). They had analyzed and favored metric conversion for their wine products. The issue of metric conversion of distilled spirits began to surface regularly at DSI meetings. The DSI staff analyzed foreign metric bottling practices and identified potential barriers, problems, and impacts of a U.S. distilled spirits conversion.

The very earliest proponents of metric conversion of distilled spirits were large, internationally active firms, which were suppliers and traders of wines and spirits. As early as 1972, at least one, and probably more, of these large, internationally active firms began to investigate internally the potential benefits of converting their containers to metric sizes. These firms found that metrication offered them substantial economic benefits. They believed that most firms in the industry would also reap benefits. They discussed the issues with top management at DISCUS, who also became convinced that

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metric conversion had the potential to substantially benefit the industry as a whole. This is the same as saying that it would benefit DISCUS' membership, since its members account for over 90% of all distilled spirits sales in the U.S. DISCUS became an active proponent of metric conversion. With assistance of officials of the very large firms, DISCUS quite rapidly convinced most of the industry that it was an attractive idea, or in a few cases, that at least there would be little net adverse impact.

The potential benefits which were perceived included reductions in production and bottle costs due to fewer and standardized bottle sizes, and fewer different bottle dressings (front labels, back labels, neck wrappings, etc.). It was also perceived as a way to eliminate some low-profit or unprofitable bottle sizes, viz. the gallon, the half-gallon, and miniature sizes. The price structure on these sizes was unsatisfactory to most suppliers. Finally, conversion was perceived as a way to increase prices, particularly in some size categories, by making volume changes (i.e., reductions) as opposed to shelf-price increases. Any rank ordering of these three reasons would be speculative. All three of them were extremely important to suppliers. Each of these, as well as several more minor perceived benefits, is discussed below in more detail.

B. Perceived Cost Savings by Suppliers

One major supplier stated that before the conversion, it used tens of thousands of different bottle labels and other dressings. For one particular brand of spirits product it used over 1,700 different bottle dressings. This was due to the large number of different sizes used in domestic and international trade, due to such factors as the varying labelling

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requirements in different countries. There was a dual impact of the numerous sizes--the impact of the sizes themselves which, in turn, compounded the effects of the unique labelling requirements of the many countries in which the brand was marketed. Using numerous different bottle sizes meant that bottle order lots were not as large and bottle production runs not as long as they otherwise could be, and thus the cost per bottle higher than it otherwise might be.

Fewer bottle sizes would reduce the number of different bottle molds required and enable longer bottle production runs, resulting in lower per unit bottle costs. The change to new and fewer sizes might also induce the industry to accept more standardized bottles, reducing bottle costs even more. For suppliers, fewer sizes would probably lead to lower overall inventories, less confusion and fewer mix-ups in shipping, and longer bottling line runs. Longer bottling line runs would translate into fewer bottling line changes and shutdowns and thus lower per unit bottling costs. Fewer sizes would surely lead to easier record keeping and reporting, and would generate a whole range of other packaging and handling efficiencies.

Only one supplier was identified which conducted a quantitative assessment of potential savings from a metric conversion during the motivation phase. This study is a confidential and highly sensitive document. The firm, one of the larger international wine and spirits companies, would not release it or provide specific information on its results to the study team. However, the firm stated that it analyzed the full range of potential impacts of a metric conversion, including the cost savings discussed above, and

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that they were found to be substantial, in an absolute sense. It was stated, however, that the potential savings represented only a very tiny percentage (less than 1%) of the firm's overall production and operating costs. We do not know to what extent other firms in the industry knew of this study and its results during the motivation or later phases of the conversion.

C. Benefits of Bottle Size Changes Perceived by Suppliers

In the early 1970's, sales of the half-gallon size, and to a lesser extent the gallon size, had risen dramatically over the previous few years. With a strong consumer demand and the prospect of more states allowing their sale, the industry anticipated even further increases in sales of these sizes. The industry did not perceive this as a positive development.

The industry was finding that production costs of these larger sizes was high due to certain bottling line inefficiencies. Moreover, bottles were expensive due to thick glass requirements and technological constraints to more efficient production of such larger-sized bottles. During the introduction of the larger sizes, some suppliers had adopted the practice of discounting them and using them as low-profit, brand promotional items. Over time, the industry became "locked-in" to very low profit margins on these sizes. This was a result of a competitive market and, as it has been called in the industry, a "shelf-price" marketing perspective. This describes the situation in which suppliers perceived that in order for a brand to sell satisfactorily, it must maintain certain price relationships with competing brands in the same size container. Suppliers also believed that consumers had

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come to expect lower per unit prices in larger sizes, due to their experience with soft drinks as well as spirits. Suppliers chose not to risk losing market share, and perhaps brand loyalty, by raising prices on the larger sizes.

To some extent, suppliers were experiencing the same problems with the miniature (1.6 oz.) size. This size had largely become a promotional item. Suppliers absorbed unprofitable prices in order to maintain brand exposure with airline travellers, and thus protect their market share on more profitable sizes. The demand for miniatures was also rising steadily, if somewhat slower than for half-gallons. Bottling of miniatures increased approximately 22 percent between 1970 and 1975. Bottling of half-gallons more than doubled between 1970 and 1975.

The half-gallon was perceived by the industry as the greater problem because it represented an enormous amount of volume that was being diverted out of smaller, more profitable sizes (half pints, pints, "fifths", and quarts) and because market research indicated that its sales would continue to increase sharply. Although the gallon size was *permitted in only a few states* and its overall sales quite low, its sales were increasing, offering even worse possibilities for the future. Several suppliers stated that the total costs of producing a half-gallon size were greater than for two quarts. The project team has verified this for bottle costs, which are discussed in detail in Chapter VI.

There is another reason why, for distilled spirits, increases in container volume do not necessarily generate proportional or even necessarily positive cost savings, which

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could allow a lower per-unit-of-volume selling price. This is the fact that a great many of the production costs of spirits products tend to be variable rather than fixed. The F.E.T. of \$10.50 per proof gallon is a perfectly variable cost. As container volume increases (and assuming there is no change in proof), taxes increase in direct proportion. State taxes are also generally on a volume basis. State, local and federal taxes account for roughly one-half (48%) of the retail purchase price of distilled spirits. This leaves only roughly half the shelf price to work with for a discount. Of the 52% of the shelf price that remains, less than half of this goes to the supplier; the remainder goes for transportation and wholesale and retail mark-ups. Figure II-1 depicts the final, overall percentage disposition of retail purchases of distilled spirits, by sector.

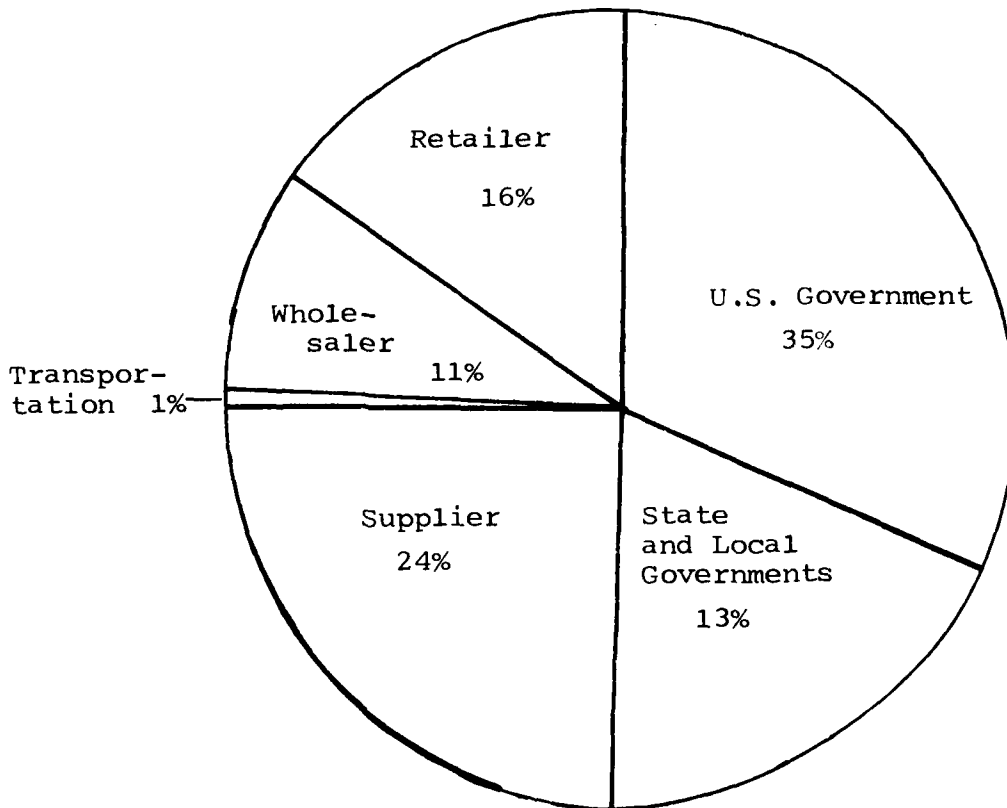
There are many other highly variable costs of production. Most key input factor costs vary directly with the volume of production (e.g. grains, sugar, energy, etc.). With the half-gallon bottle costing more than two quart bottles, this leaves little room for discounting the half-gallon. With the smaller categories--half pint, pint, "fifth", and quart--there are slight economies of size, which were reflected in supplier prices and, usually, at the retail level as well. This is discussed in more detail in the price analysis presented in Chapter VI. Figure II-2 presents a breakout by percentage of production costs of a typical domestic distilled spirits supplier.

For the industry as a whole, the miniature size was also an unprofitable item. As mentioned above, miniatures were (and still are) primarily a promotional item to gain brand exposure in order to protect and enhance market share of more profitable sizes. At

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Figure II-1

DISPOSITION OF RETAIL PURCHASE PRICE OF DISTILLED SPIRITS (by Sector)

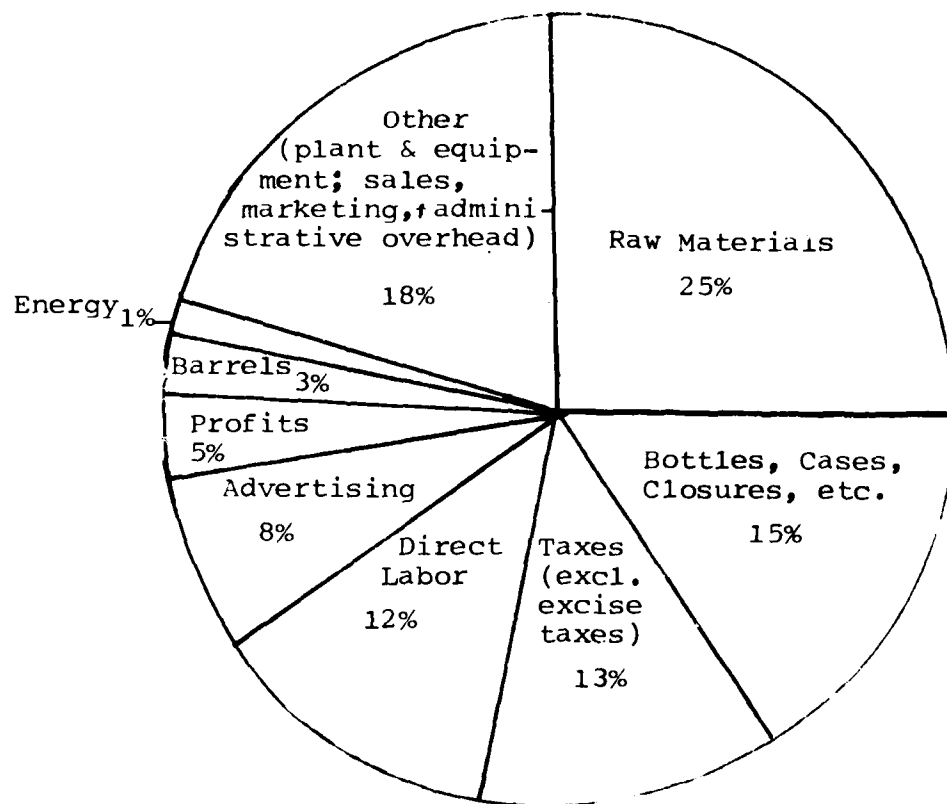


Source: Derived from data provided by DISCUS.

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Figure II-2

PRODUCTION COSTS OF A TYPICAL U.S. DISTILLED SPIRITS SUPPLIER (by % of Supplier Selling Price)



Source: Derived from data provided by DISCUS.
It should be noted that this excludes consideration of state and federal excise taxes.

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the time of the conversion, only 19 states permitted miniatures but three states required their use for on-premise consumption. The vast majority of miniature sales were (and still are) to the airlines.

The airlines drove hard bargains for the prices they paid for miniatures, since they had the very effective "club" of being able to refuse to purchase brands whose prices they considered to be out of line or which were unprofitable for them to offer. The airlines typically charge the same price for all brands, and thus tend to expect similar purchase prices for all brands. One major supplier stated that the situation had evolved to the point where miniatures were generally being sold to the airlines at or even below the breakeven point. This situation appears to persist today. Another supplier stated that it was currently selling miniatures (50ml) of one of its prime brands to the airlines at approximately 25¢ each, which was barely a breakeven price.

The industry's opinion of miniatures was negative for other reasons. They presented numerous bottling difficulties. The bottles tended to fall over on the bottling line and equipment tolerances had to be very stringent. These factors lead to high production costs. Furthermore, the bottle costs were high, considering the small amount of product they contained. Finally, the miniature size simply held very little volume. From the supplier's perspective, it is in business to sell spirits and miniatures are considered a very poor way to move volume. Profits in the distilled spirits industry have historically been made by selling large volumes of product at low per unit margins, although this has been changing in recent years. It is a "mature" industry, with rather modest return on capital,

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and profits have historically been largely a function of quantity of product produced and sold.

D. Pricing Benefits Perceived by Suppliers

In the early and mid-1970's, suppliers perceived themselves to be in a severe cost/price squeeze. Costs of nearly all production inputs had been increasing steadily, and sometimes wildly (see Figure II-3). Product price increases by suppliers (that is, quoted bottle prices), which were approximately 7.3% overall between 1970-1975, had lagged far behind the increases in costs and were affecting profits dramatically. There is data which substantiates this profit squeeze. According to Citibank, supplier margins decreased every year from 1967 (when they were approximately 4.7% overall) through 1974 (when they were approximately 3.5%)¹. Shelf-price marketing strategies and a highly competitive market were two contributing factors to this situation.

Industry experts have searched in vain for years for explanations for why the industry has found it so difficult to maintain a satisfactory price structure. The competitive market and industry marketing practises may not be the only reasons for these pricing problems. Wine and beer markets are every bit as competitive in price merchandising and their prices have increased substantially faster than distilled spirits, while making solid gains in sales. The industry experts at Gavin-Jobson Associates, the publishers of the Liquor Handbook, a widely circulated and highly respected industry trade journal, contend that it is the large difference between distilled spirits, and wine and beer tax rates which explains the difference. For some years now, they have called for the

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Figure II-3

SUPPLIER INPUT PRICE CHANGES (Raw Materials and Other Production Costs)

1967 = 100

	1970	1975	% Change
Grains	98.8	223.9	+126.6%
Barrels	117.3	161.9	+38.0%
Fuel	106.2	245.2	+130.9%
Bottles	133.0 (for 1971)	181.0	+36.0%
Paper and Paper- board Products	107.9	161.8	+50.0%

Source: BLS Producer Price Index

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industry to begin a campaign to educate consumers as to why prices are so high, (i.e. that approximately 50% of the price is taxes) and to request legislators to provide some tax relief, or at least to hold the line on taxes.

The industry has not done either and, according to Gavin-Jobson Associates, most consumers are ignorant of the tax burden they incur in the purchase of a distilled spirits product. A great many believe that distilled spirits prices are high exclusive of taxes. The point of this digression is that the resistance to making product price adjustments was, at the time of the conversion, a real and substantial problem to the industry. It is a deep-rooted problem with numerous contributing causes, with which the industry has been grappling for a long time. Metric conversion presented an almost perfect mechanism to alleviate this problem. If bottles were down-sized, bottle shelf prices would not have to be raised--they might even be able to be decreased--and yet effective per-unit-of-volume prices could rise.

E. Other Benefits Perceived by Suppliers

There was a potential marketing benefit to U.S. suppliers of reducing the number of allowable sizes. Scotch, brandies, schnapps, and imported specialty items were often sold in sizes of 3/4 quart (24 ounces), 4/5 pint (12.8 ounces), and 3/4 pint (12 ounces). These were often mistaken by consumers for the more common domestic sizes of "fifths" (25.6 ounces) and pints (16 ounces). The down-sizing gave them a shelf-price advantage over domestic products which were usually sold in the standard sizes. There was some concern that, due to this and the shelf-price marketing perspective, U.S. suppliers would

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eventually become embroiled in a down-sizing war, within the allowable sizes. A metric conversion which limited the set of all distilled spirits sizes would eliminate this problem.

It should be noted that the real, perceived benefits were not necessarily always the publicly stated motives for the industry's conversion. Public statements made by DISCUS and the industry regarding their reasons for wanting to convert usually focussed on a desire to stimulate exports and to reduce consumer deception from the many different allowable sizes.

F. Potential Wholesaler and Retailer Benefits

Benefits to wholesalers and retailers were also expected to result from a metric conversion. This was especially welcomed by the suppliers who would need the support of wholesalers and retailers--many of whom (i.e. in the control states) are agencies of state governments--to convince BATF to change its regulations on allowable sizes.

There was a whole range of potential but rather small anticipated wholesaler and retailer benefits. These included reductions in record keeping burdens, order and delivery errors, and ordering time. However, the major potential benefit to wholesalers and retailers was a potential increase in turnover ratios, viz., the ratio of the cost of goods sold to the cost of the average inventory. With fewer sizes to stock, each size would move faster if total sales kept the same overall volume. If the same or even slightly higher precautionary stocking margins were maintained for each size, the overall amount that needed to be warehoused might be decreased. Wholesalers and retailers might be

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able to maintain the same brand coverage while reducing both the number of items and amount of volume they inventoried.

DISCUS conducted a brief analysis during this period (exact date unknown) which made quantitative estimates of some of the potential savings to wholesalers and retailers. Based upon 1973 sales, DISCUS estimated annual savings (increased profits) of \$7 million for all retailers and \$10 million for all wholesalers.²

Figure II-4 on the following page presents a summary of the benefits which suppliers perceived would accrue to each of the three industry tiers--suppliers, wholesalers, and retailers.

G. Perceived Disadvantages of the Conversion

It appears from the written record and from our discussions with industry management that the most worrisome factor about converting to metric was the impact on overall consumption. If sizes were increased, prices would have to be raised and this could depress sales. Due to already tight profit margins, the increased costs from up-sizing could not be absorbed. It was stated by one firm at the public hearing and by others in written comments that bottle size increases would definitely result in higher bottle prices to the consumer. There was also some concern that wholesalers and retailers would choose to reduce spirits inventories, resulting in a (one-time) slow-down in orders. It was estimated by DISCUS staff that such a slowdown could potentially amount to slightly more than 2 percent of shipments or approximately \$60 million. The way to avoid this,

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Figure II-4

SUMMARY OF CONVERSION BENEFITS WHICH SUPPLIERS PERCEIVED WOULD ACCRUE TO SUPPLIERS, WHOLESALERS AND RETAILERS

- A. Accruing to Suppliers
 - 1. Reduction in production costs
 - a. Longer bottling runs, less downtime, fewer bottling line changes, etc.
 - b. Cheaper, standardized bottles.
 - c. Fewer bottle molds
 - d. Simplified record keeping and reporting.
 - e. Fewer different bottle dressings.
 - f. Easier to handle and ship.
 - 2. Elimination of unprofitable sizes, especially half-gallon and miniature.
 - 3. Opportunity to raise prices through quantity adjustments, that is, without raising shelf prices.
 - 4. Requirement for Scotch and other imports to be sold in sizes more common to U.S. products--eliminate their competitive advantage from being slightly smaller.
- B. Accruing to Retailers
 - 1. Increase in turnover ratio, due to fewer different sizes stocked.
 - a. Keep same brand coverage with less space and at lower cost.
 - b. Use capital and space savings to stock additional brands and/or products
 - 2. Reduction in record keeping and reporting burdens.
 - 3. Reduction in order errors.
 - 4. Reduction in minimum lead time necessary for submitting orders.
 - 5. Reduction in time required to place an order.
- C. Accruing to Wholesalers
 - All of the above items for retailers, plus:
 - 1. Reduction in number of delivery errors.
 - 2. Reduction in number of split case orders.

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according to the DISCUS report, was for suppliers to point out to wholesalers and retailers the marketing opportunities afforded by increasing brand selection.³

Another worrisome aspect was what BATF would do. Although top management of BATF were openly supportive of converting both wine and spirits to metric sizes, it was unclear exactly to what extent BATF would accept industry recommendations on the details of the conversion--the sizes, phase-in approach, etc. There was a chance that BATF, for whatever reason, would impose bottle size or other requirements on the industry which would leave it no better off or even worse off than before.

The strategy that DISCUS and the industry adopted was to develop a strong industry-wide consensus, among as many affected parties as possible, on all aspects of the conversion, and then to approach BATF with a unified position. They wanted to submit to BATF an "industry" petition that had been carefully considered and approved (or at least accepted) beforehand by all affected industry parties. As it turned out, disagreements within its membership and a few related industry groups over the sizes prevented DISCUS from a perfect implementation of this strategy. However, to the degree possible, it was carried out; and to the extent that it was carried out, it was successful.

A potential disadvantage that was not widely foreseen but which could and should have been was the impact on production costs of down-sized containers. As mentioned earlier, there was a strong desire within the industry to down-size the half-gallon (64 ounces) to a more profitable size. The conversion resulted in a 1.75 liter (59.2

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ounces) size, a decrease of 4.8 ounces. The half pint (8 ounces) was also considerably down-sized, to 200ml (6.8 ounces), yielding a 1.2 ounce decrease. The result of these two down-sizings was that more bottles were required to move the same amount of product. Thus, the lower per unit cost of the bottle for a 1.75 liter size would be offset to some extent by the increased number of bottles required. It represents a 7.5% bottle size reduction, and 8.1% more 1.75 liter bottles would be required to ship the same amount of product as before. For the 200ml size the decrease in volume from a half-pint was only 1.2 ounces, but this represented a 15% volume reduction. Thus, 17.6% more bottles must be filled and shipped in order to sell the same quantity of product as before.

There are also bottling line inefficiencies with the 200ml size. The 200ml bottles tend to fall over on the bottling line, and bottling lines cannot run much, if any, faster than with the half-pint bottles. Thus, the industry in its overwhelming preference for down-sizes in the conversion overlooked important long-term production cost drawbacks to down-sizing. One-time conversion costs were at least recognized, although they were perceived to be minimal. The increased production costs from the down-sizing were foreseen by very few persons in the industry.

H. Other Factors

In explaining industry motivation for the conversion, it is important to explore fully the context in which it developed. Through public speeches and private discussions it became known that top decision-makers at BAFT were favorably disposed toward a conversion to metric sizes, for both wine and spirits. A conversion to metric could solve a

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major problem for which BATF had responsibility--a steadily increasing amount of consumer deception resulting from down-sized imported wines and liqueurs. BATF saw metrication as a method of resolving this growing problem in a manner which was fair to both U.S. and foreign suppliers.

BATF had rejected an earlier Wine Institute petition only because BATF believed it was unfair to require foreign suppliers to convert to U.S. measure when there appeared to be a good chance that the U.S. would soon begin converting to metric. BATF realized that a metric conversion to fewer, rational sizes would offer U.S. distilled spirits suppliers efficiencies in production, storage, and shipping which could benefit both the industry and, ultimately, the consumer. From BATF's and the industry's point of view, the wine and distilled spirits conversion must be seen as part of the same overall process, with wine as the driving force and primary element and distilled spirits as an important but secondary element.

A positive incentive to conversion from outside the U.S. was the steady progress the EEC was making in narrowing the number of sizes allowed in trade. In the early 1970s, the Europeans were still badly divided over distilled spirits sizes. Each country had long-established sizes within its borders which it supported as Community-wide standards. Nevertheless, there was clear indication that, over time, the Europeans would certainly move to a common set of sizes. According to the U.S. General Accounting Office, as early as 1971 the EEC selected 17 metric distilled spirits sizes as allowable in commerce. Each nation was permitted to allow other sizes, but were required to accept imports of

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these sizes. The number of sizes was narrowed to 13 in December 1974--50ml, 100ml, 200ml, 350ml, 375ml, 500ml, 700ml, 750ml, 1 liter, 1.5 liters, 2 liters, 2.5 liters, and 3 liters.

In the early 1970s, it was believed by many parties, including top management at DISCUS, BATF, and in the industry, that the U.S. should act reasonably soon to establish metric standards. We could thus impact the EEC's selection of sizes and help ensure that the international standard sizes that ultimately evolved would be congruent with U.S. sizes and markets. The perception was that, over the long term, as the international market coalesced, with perhaps greater flows of products both ways, U.S. suppliers would have to convert to metric anyway. By acting early, the Europeans would have to accept the U.S. metric sizes. If the U.S. waited, some day we would probably have to accept theirs.

In summary, suppliers perceived the advantages of metrication to far outweigh the disadvantages. Conversion costs were thought to be low, or at most modest. Substantial, realizable bottom-line benefits were perceived through cost reductions and product pricing. A wine conversion was probably coming, offering opportunities for further standardization of bottle sizes. These factors helped generate support for metrication among spirits suppliers and firms in related industries. There was a well-established trade association to help motivate industry firms, to coordinate intra-industry negotiations, to obtain a consensus on the issues, to help guide the industry proposal through the regulatory process, and to help plan and coordinate the implementation of the conversion.

The time

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was ripe, with BATF management in general support of the change and the Europeans moving ever closer to standard sizes. It was a convergence of all these factors and events which precipitated the industry initiative to convert.

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Chapter II - Footnotes

1. Citibank estimates were obtained from the 1980 Liquor Handbook, p. 122.
2. Internal DISCUS Study, Division of Research and Statistics, approximately March 1974 (exact date unavailable).
3. Ibid.

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CHAPTER III THE PLANNING PHASE (Late 1972 to October 1976)

A. Introduction

The planning phase can be defined as the time between the existence within DISCUS and the supplier industry of the motivation to convert and the beginning of the optional conversion period. The planning phase can be divided into two parts. In the first part, the industry was primarily involved in obtaining a consensus on bottle sizes and other aspects of the conversion and in obtaining BATF approval of its proposals. This lasted roughly from late 1972, when DISCUS and the Wine Institute began exchanging views on potential bottle sizes, to March 1976, when BATF made its decision. The second part of the planning phase was the seven-month period between the BATF decision and the beginning of the optional period in October 1976. This interval was established by BATF to allow it time to make other necessary regulatory changes and to ensure that all firms in the industry had adequate time to plan for a smooth phase-in of metric sizes. This also eliminated any competitive advantage to firms which had been heavily involved in or closely tracking the earlier planning phase, and thus perhaps could have anticipated events.

A word is in order regarding the nature and timeframe of planning at the firm level. Discussions with industry executives revealed that strategic planning at most firms occurred early in the second part of the planning phase, beginning immediately after the

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BATF decision. Significant operational planning must have also been conducted during this seven-month period, since most firms introduced 1.75 liter, 750ml, and 200ml sizes very early in, and in some cases at the very beginning of, the optional period. The total lead time required for the introduction of a new size was approximately three to nine months, depending mainly upon how close the new size was to the size or sizes it replaced.

A second round of operational planning occurred during the optional period (i.e. during the implementation phase) which focussed upon the three up-sized containers--the 1 liter, 500ml, and 50ml sizes--which were introduced later, often at the very end of the optional period or at the conversion deadline.

The first section of this chapter describes the events, issues, and participants in the planning phase. This section attempts to provide a comprehensive understanding of what occurred during this phase, from beginning to end. Later sections analyze in more detail key events, issues, and participants, with the purpose of explaining why positions, events and issues unfolded as they did.

B. Events, Issues, and Participants

By late 1972, DISCUS management and many of its members had become convinced that metrication of distilled spirits containers could substantially benefit the industry. The question became one of obtaining a consensus from its members on the specific sizes and the type of phase-in to propose to BATF. The first step in this process was to decide upon the basic or standard-sized bottle, upon which a sizing scheme of multiples could be

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based. The choice quickly narrowed to either the 700ml, toward which Europe was moving, or the 750ml, which was very close in size to the "fifth" (0.2 oz. less than the fifth). Through meetings and discussions of a number of different DISCUS committees, the 750ml was selected.

Next, two competing sizing schemes were developed by DISCUS and submitted to its membership for discussion. One option--187.5ml, 375ml, 750ml, and 1 liter--was based upon the wine sizes which the Wine Institute would soon petition BATF to approve. The other sizing scheme was 250ml, 500ml, 750ml, and 1 liter. After much discussion, both within DISCUS and between DISCUS and affected industry groups, a compromise set of sizes was agreed upon by DISCUS' Board of Directors--250ml, 375ml, 500ml, 750ml, and 1 liter. There was no miniature or half-gallon equivalent in this scheme.

DISCUS petitioned BATF, in December 1973, to change the standards of fill for distilled spirits to these sizes. DISCUS also requested a sufficient phase-in period to convert equipment and bottle sizes, and that spirits bottled prior to the beginning of the mandatory period be allowed to be sold.

After the petition was submitted, however, it became apparent that substantial differences of opinion regarding the sizes still remained among DISCUS members, and among firms in allied industries. Although there was some disagreement regarding the specific sizes selected, the primary differences of opinion related to the miniature and sizes larger than 1 liter. Some suppliers strongly desired one or both of these. The airline

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industry was vehemently opposed to the elimination of miniatures, citing numerous in-flight problems with larger sizes and high costs of equipment conversion. The glass container manufacturers feared a severe stress on their mold-making capacity, since it appeared that the wine and distilled spirits conversions would be occurring at the same time. They strongly supported a size-by-size phase-in rather than optional and mandatory periods for all sizes as the DISCUS petition requested. Due to these differences, DISCUS asked BATF in June 1974 to delay action on its original petition.

DISCUS held more discussions with its members and related industry groups. It finally obtained a strong consensus among suppliers on a sizing scheme of 187.5ml, 375ml, 750ml, and 1 liter. These sizes had been included in the Wine Institute's petition to BATF (along with sizes of 1.5 liters and 3 liters), and it appeared that they would soon be approved for wine. DISCUS also agreed upon a 46.8ml miniature size to satisfy the airline industry but DISCUS wanted its sale limited to public transportation conveyances.

DISCUS discussed these new proposals with its members and with related industries, and they received an extremely favorable reception. DISCUS and industry representatives travelled to Europe and attempted to obtain a recommendation from Federacion International (the international association of wine and spirits trade associations) to the EEC to adopt these sizes for distilled spirits. DISCUS almost succeeded, but was thwarted by Germany, which supported a 700ml size (its primary schnapps size), and the National Association of Alcoholic Beverage Importers (NAABI) in the U.S. which desired a

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different sizing scheme which it believed was more attractive to importers--50ml, 250ml, 375ml, 500ml, 750ml, and 1 liter sizes.

In October 1974, DISCUS amended its original petition to BATF, proposing sizes of 46.8ml, 187.5ml, 375ml, 750ml, and 1 liter, with the 46.8ml to be allowed only on means of public transportation. DISCUS stated in the new petition that it would request a hearing within one year to deal with a size larger than 1 liter. The DISCUS membership was still divided on this issue. A three year phase-in period was requested and mandatory uniform case packings (i.e. the number of containers per case) were proposed.

Almost immediately after DISCUS submitted its revised petition, numerous firms and industry groups began to officially notify BATF, by letter, of their positions on the issues. A wide variety of firms and industry groups submitted comments, usually specifying what they supported in the DISCUS petition and what they did not. After December 1974, when metric standards of fill for wine were approved, the number of written comments received by BATF increased. In mid-March 1975, DISCUS again amended its petition; to add a 1.75 liter size, to recommend January 1, 1979 as the mandatory date, and to recommend a voluntary date as soon as possible. Comments on the previous issues and now on the issue of the 1.75 liter size continued to be received by BATF. In May 1975, DISCUS amended its petition for the last time, changing its recommended 46.8ml to a 50ml size, for use on public conveyances only.

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On July 16, 1975, BATF published a Notice of Proposed Rulemaking and Public Hearing in the Federal Register. In this notice, it published the DISCUS proposal as well as a BATF proposal. BATF's proposal contained three elements which differed with the DISCUS proposal:

1. Sizes of 500ml and 250ml instead of 375ml and 187.5ml.
2. Revocation of the exemption to the standards of fill granted to cordials.
3. No restrictions on the sale of miniatures.

BATF requested written and oral comments from all interested parties on both proposals and set the date for the hearing at September 10, 1975. To our knowledge, this notice in the Federal Register was the only medium used by BATF to inform the general public of the proposals.

During the entire period of discussions and negotiations on the sizes and phase-in strategy, prior to the above-mentioned notice in the Federal Register, no consumer groups were involved. Prior to the notice in the Federal Register, only two individual consumers had commented to BATF on this issue. One consumer had notified BATF only that he opposed the miniature restriction and the other that he favored either permissive sizes or a sizing scheme of 50ml, 250ml, 500ml, 1 liter, 2 liters and 4 liters.

After the notice in the Federal Register and prior to the hearing, BATF received more than thirty written comments on the two proposals from domestic and foreign firms,

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U.S. and foreign trade associations, officials of the U.S. Metric Association, as well as individual consumers. The public hearing was held on September 10, 1975. At the beginning of the hearing, DISCUS dropped its proposed restrictions on miniatures. Testimony was given by many segments of the industry and from related industries, firms, and associations. A total of 22 persons gave oral testimony at the hearing. No consumers or consumer groups testified. At the end of the hearing a 60 day additional comment period was established, which was later extended another month. During the post-hearing period, many more comments were received by BATF. Also during this period, BATF conducted extensive internal research. It developed and analyzed different sizing schemes, assessed their strengths and weaknesses, investigated sizes in other countries and trading regions, and investigated legal issues of the conversion.

The industry overwhelmingly supported the DISCUS proposal, especially after a 1.75 liter size was included and the miniature restriction dropped. Large and small U.S. suppliers, importers, bottle manufacturers, the wholesalers' trade association (Wine and Spirits Wholesalers of America--WSWA), the trade association of retail liquor stores (National Liquor Stores Association--NLSA), the association of control states in the U.S. (National Alcoholic Beverage Control Association--NABCA), the trade association of Canadian suppliers (*Association of Canadian Distillers-ACD*) as well as some other foreign suppliers, and the trade association of importers in the U.S. (National Association of Alcoholic Beverage Importers--NAABI) all at some point in this period supported the DISCUS proposal, either through oral or written testimony. Some groups, such as the California brandy producers, supported portions of the DISCUS proposals (they wanted a

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1.5 liter instead of 1.75 liter size). Other parties desired minor changes in the proposals. For example, one medium-sized U.S. supplier desired an extra year in the phase-in period to use up all of its old labels. Some firms heavily involved in brandies and liqueurs desired a 500ml size in addition to the 375ml and 750ml sizes.

The 1.75 liter size recommended by DISCUS was supported by the industry in lieu of a 2.0 liter size on the basis of purported technological limitations to producing low cost 2.0 liter bottles (especially by "double gobbing", that is, blowing two bottles simultaneously on the same machine). Several bottle manufacturers and the Glass Container Manufacturers Institute (GCMI), the bottle manufacturing industry's main trade association, testified to BATF in this regard. The industry position was basically that the 1.75 liter size would benefit everyone--consumers and producers--since it could be much more economically produced and thus sold at a lower unit cost than the 2.0 liter size. The argument against a 1.5 liter size was that it did not represent a large enough size difference from the 1 liter size.

The 11 consumers that submitted testimony to BATF overwhelmingly opposed the DISCUS sizes, especially the 1.75 liter size, although they did not necessarily support the BATF proposal as their preferred sizing scheme. Most consumers, however, did favor 250ml and 500ml sizes over the 187.5ml and 375ml sizes. All consumers who addressed the sizing scheme in their comments opposed the 1.75 liter size. Three of the 11 consumers supported a 200ml size and 5 specifically stated they supported a size or sizes larger than 1.75 liter. There was little or no consumer comment on the issues of the

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length of the phase-in period, standardized case packings, or removal of the exemption for cordials and specialty items. A major supermarket chain recommended a 1.5 liter in lieu of the 1.75 liter size, citing potential consumer deception during the phase-in. The positions of the consumers who commented are summarized in Figure III-1. Most of the comments supporting a 1-2-5 sizing scheme were received after the hearing. All consumer comments were received by November 10, 1975, in plenty of time to be considered in the rulemaking of March 10, 1976.

Comments from foreign firms, foreign trade associations, and foreign governments varied considerably, usually depending upon how the proposals impacted specific products which they exported to the U.S. Foreign whiskey producers generally supported the DISCUS proposal, except that they were adamant about keeping the miniature. Several foreign trade associations and national liquor monopolies also supported the DISCUS sizes. Many European firms, trade associations, and governments argued for 200ml, 250ml, and 500ml sizes. Some requested retention of the exception for cordials and specialties. The EEC supported a 200ml size. In one instance, two different spirits industry trade associations in the same country recommended different sizing schemes. Since 700ml and 710ml sizes were common in Europe, BATF received support for these also.

On March 10, 1976, BATF established metric sizes for distilled spirits products, selecting sizes of 50ml, 200ml, 500ml, 750ml, 1 liter and 1.75 liter. It rescinded the exception for cordials and specialty items and established uniform packing sizes for cases.

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Figure III-1

Summary of Consumer Positions
(of the eleven different consumers who commented)

Consumer	Position
A	Supported no restrictions on miniatures (no stated preference regarding BATF or DISCUS sizes).
B	Supported permissive sizes, or sizes of 50ml, 250ml, 500ml, 1 liter, 2 liters, 4 liters, 5 liters, and 10 liters.
C	Supported sizes of 50ml, 250ml, 500ml, 750ml, 1 liter, and 2 liters.
D	Supported sizes of 250ml and 500ml, as opposed to 187.5ml and 375ml.
E	Supported sizes of 250ml, 500ml, 750ml, 1 liter, 2 liters, and 4 liters.
F	Supported the metric conversion in general. Requested U.S. customs duty-free limits on tourists returning to the U.S. also be converted to metric.
G	Supported a 1-2-5 sizing scheme of 100ml, 200ml, 500ml, 2 liters, and 5 liters.
H	Supported a 1-2-5 sizing scheme. Specifically against a 1.75 liter size.
I	Supported sizes of 75ml or 100ml, 250ml, 500ml, 1 liter, and 2 liters.
J	Opposed the DISCUS sizes.
K	Supported a 1-2-5 sizing scheme.

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No restrictions were placed on the sale of miniatures. The effective voluntary date was established as October 1, 1976, and an effective mandatory date of January 1, 1980. Metric bottles during the phase-in were required to display contents in both metric and U.S. equivalents. (Of course, since this was often embossed in the bottle, it may have been of little benefit to consumers.) In addition to using the Federal Register to inform of its decision, BATF also issued a press release summarizing its decision and explaining the differences between the customary and new metric sizes. Figure III-2 summarizes the differences between the customary sizes, the DISCUS proposals, and the final sizes selected by BATF.

Once the metric sizes were announced and the optional and mandatory timeframes established, it was up to individual firms to plan internally for the introduction of their metric sizes. DISCUS continued to track the issues and to troubleshoot as problems arose, producing requests and recommendations to BATF to make regulatory modifications necessary to facilitate the conversion. For example, within three weeks after the ruling DISCUS petitioned for and was granted a change in the required case packings for 200ml bottles from 60 to 48 per case, citing unsuitable existing equipment and difficulties in palletizing, warehousing, and handling the cases. DISCUS also played a key role in getting the states to make necessary changes to their alcohol beverage regulations to allow the new sizes.

There were numerous other problems that needed to be resolved and clarifications made to the regulations before the voluntary period began. One area of confusion was

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Figure III-2
Comparison of Sizes Before and After Conversion

Allowable Sizes Before Conversion	1/2 Pint 8 oz	3/4 Pint 12 oz	4/5 Pint 12.8 oz	Pint 16 oz	3/4 Quart 24 oz	4/5 Quart ("Fifth") 25.6 oz	Quart 32 oz	1/2 Gallon 64 oz	Gallon 128 oz
% of Total Bottled by Volume, 1975	.7	8.4	.5	8.5	2.6	25.3	33.6	18.2	.1
DISCUS' Initial Recommendation	250ml 8.5 oz (+.5 oz)	375ml 12.7 oz	500ml 16.9 oz (+.9 oz)	750ml 25.4 oz (-.2 oz)	1 liter 33.8 oz (+1.8oz)				
DISCUS' Later Proposal(s)	Orig. excl. Later: 46.8ml, restricted Later: 50ml, unrestr.	187.5ml 6.3 oz (-1.7 oz)	375ml 12.7 oz (-3.3 oz)	750ml 25.4 oz (-.2 oz)	1 liter 33.8 oz (+1.8 oz)	Orig. excl. Later: 1.75 liter 59.2 oz (-4.8 oz)			
Sizes Selected by BATF	50ml 1.7 oz (+.1 oz) unrestr.	200ml 6.8 oz (-1.2 oz)	500ml 16.9 oz (+.9 oz)	750ml 25.4 oz (-.2 oz)	1 liter 33.8 oz (+1.8oz)	1.75 liter 59.2 oz (-4.8oz)			

Differences in fluid ounces between the customary and metric sizes are in parentheses.

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what constituted an irreversible conversion. In April 1976, BATF issued an industry circular that attempted to clarify this issue, stating that conversion of one size to metric did not require simultaneous conversion of other sizes, even of the same brand. On the other hand, once a particular plant began bottling a given metric size for a particular brand, the corresponding U.S. measure size for that brand could no longer be bottled. However, some states were moving rather slowly in changing their regulations (when there was a conflict) to permit metric sizes. As a result, a one-plant firm which converted to metric sizes in the initial part of the optional period could lose one or several markets (i.e. states).

This situation was made untenable by the fact that, under the regulations and interpretations then in effect, a multi-plant company could avoid this particular problem. It could, for example, supply liters of brand X to those states allowing metric sizes from one plant, and use another plant to supply quarts of brand X to those states not permitting metric sizes. This placed single plant companies (i.e. smaller companies) at a competitive disadvantage because they did not have this option. To resolve the problem, BATF ruled that when any plant began bottling a given brand in a metric size for distribution into a particular state, it could still bottle and ship the corresponding customary size into other states.

Another issue was the treatment of imported products. In July 1976, BATF ruled that metric sizes could be entered into Customs bond or foreign trade zones prior to October 1, 1976, for release for domestic sale on or after October 1, 1976. Non-metric

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sizes could be imported after the January 1, 1980 mandatory date if they had been bottled prior to that time. Other issues which required further clarification, regulatory changes, or guidance from BATF were: case markings for metric cases; accounting and reporting of strip stamps (the "federal tax paid" stamp that goes onto every bottle); other record keeping requirements; and the exact method of converting between metric and customary measure for tax purposes. The F.E.T. was not changed to metric measure.

C. Obtaining an Industry Consensus

As mentioned earlier, DISCUS provided the forum for intra-industry as well as inter-industry discussions. It shepherded and, to some extent, refereed the negotiation process. It sometimes prodded and pushed things along, stepping in with direct action when the process bogged down. It provided "strawman" positions when needed. DISCUS was the key factor in generating industry motivation to convert. It also played the key role in developing the industry-recommended conversion proposal, including the sizing scheme.

As mentioned earlier, the original DISCUS petition of December 1973 proposed sizes of 250ml, 375ml, 500ml, 750ml, and 1 liter, reflecting a compromise on two optional sizing schemes that had surfaced in industry discussions. One option was: 187.5ml, 375ml, 750ml, and 1 liter. The other option was: 250ml, 500ml, 750ml, and 1 liter. Hard evidence was not available on which parties supported which options or specifically why either option was supported. The selection appears, however, to have been a true compromise. The 750ml and 1 liter sizes were included in both options, and the 375ml represents a replacement for the 3/4 pint and 4/5 pint. The 375ml is a logical

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intermediate size between the 250ml and 500ml. Many imported products are in this size range, and it is likely this size was desired by importers. There was little support for a miniature size. The membership appears to have been divided on which size larger than 1 liter, if any, should be included.

The early DISCUS optional sizing schemes reflected, to a large extent, the options being considered or favored by the Wine Institute. The Wine Institute's early internal position on wine sizes was for sizes of 250ml, 500ml, 750ml, 1 liter, 2 liters, 3 liters and 4 liters. They specifically recommended to DISCUS in December 1972 that it support distilled spirits sizes of 50ml, 250ml, 500ml, 750ml, 1 liter, 2 liters and 4 liters. This parallels fairly closely one of DISCUS' two early optional sizing schemes mentioned above.

By the time the Wine Institute petitioned BATF in October 1973, they had changed their recommended sizes to 187.5ml, 375ml, 750ml, 1 liter, 1.5 liter, and 3 liters. DISCUS went ahead and petitioned BATF in December 1973 for 250ml, 375ml, 500ml, 750ml, and 1 liter sizes. Although evidence is lacking as to how, why, and exactly when it occurred, by May 1974 DISCUS had changed its recommended sizes to 187.5ml, 375ml, 750ml, and 1 liter.

Both the miniature and a size larger than 1 liter were ultimately accepted by DISCUS later on, but only after heated internal and external debate. The reasons why suppliers desired to eliminate the miniature and half-gallon were mentioned earlier. For a number of reasons, these sizes were not profitable. It is unclear why some firms

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supported them, since it is unlikely these were profitable sizes for them. Small firms were the logical supporters of miniatures, since it afforded them an opportunity for brand exposure and thus a possibility to expand their market share. Some small firms supported a miniature size, but some very large firms did, too. It is doubtful that these large firms had a direct economic justification for their support. One reason for this was that firms were jockeying for competitive advantage. Thus, a firm might have supported a position not because it benefitted from it, or was even impacted by it, but rather because the proposal was detrimental to firms or brands with which it competed. It should also be noted that small firms which supported the 50ml did so within the context of the internal DISCUS negotiations. From the available information, it appears that they did not "break ranks" and petition or complain directly to BATF.

The revised DISCUS sizing scheme of 187.5ml, 375ml, 750ml, and 1 liter was very attractive to suppliers for several reasons. First, the four sizes represented a further reduction from the original petition in the number of different allowable sizes, thus increasing potential cost savings. It provided substantially down-sized replacements for the pint and half-pint, the most common smaller sizes produced by domestic suppliers, as opposed to the up-sizes in the original petition. It paralleled the Wine Institute's recommended wine sizes, which were meeting with little opposition and which looked like they would be approved by BATF (they were in December 1974). DISCUS stated that this offered the possibility of standardizing bottles across sectors. Bottle cost could be greatly reduced through sharing molds and thus reducing the number required, and longer production runs would be possible in bottle manufacture. Lastly, it was argued that since

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the sizing scheme was primarily in simple fractions of the 750ml standard size ($\frac{1}{4}$, $\frac{1}{2}$, and 1), consumers would benefit from an ease of comparing prices between sizes.

The only significant disagreement within the industry on intermediate sizes was from importers. Cordial, liqueur, and brandy importers and suppliers desired a 500ml size. The importers stated to BATF that the increased cost of sugar was forcing their prices upward, and that they needed an intermediate size that could be priced between the 375ml and 750ml sizes.

As mentioned earlier, DISCUS ultimately conceded to the wishes of the airlines and supported a miniature--originally at 46.8ml--but to be restricted to airlines and railroads. This was one-fourth the size of a 187.5 and thus maintained the internal consistency of the sizing scheme. In the months preceding the hearing it became clear that a 50ml size would be more widely accepted than a 46.8ml size. Two months before the hearing, DISCUS changed its recommended miniature size to 50ml. By the time of the hearing, DISCUS had dropped its recommended restrictions on miniature sales.

There were reasons other than airline opposition which caused DISCUS to drop its proposed restrictions on miniature sales. Several states required miniatures for on-premise consumption and thus the elimination of miniatures would have created a difficult situation for them. State alcohol beverage control boards in those states strongly opposed their elimination. Also, BATF attorneys were doubtful of BATF's authority to restrict a size to a particular segment of industry or society. This issue was a legal "can of worms"

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which BATF did not wish to open. There was considerable "horse trading" between the industry and BATF over the provisions of the metrication. It is likely that this is one of those issues on which DISCUS acquiesced to the wishes of BATF with hopes, of course, that the favor would be reciprocated later on in the process.

The disagreement among DISCUS' members regarding a size larger than 1 liter is very difficult to explain. Reliable information on this matter is limited. One explanation of the industry support for the 1.75 liter size given by several sources is that management in some firms believed that BATF would require a larger size anyway, and the only real issue was what this larger size should be. They believed the industry should include in its petition a large size which they knew would be satisfactory to it, or at least not be detrimental, rather than let BATF dictate the size. Some may also have feared negative consumer reaction to the elimination of the half-gallon. This could damage the public image of the industry and over the long run lead to decreased sales, stronger governmental control, and higher taxes. The former argument--regarding BATF's intentions--is the most plausible single explanation, but both factors probably played a role. Also, some firms may have feared a drastic decline in consumption of their products if half-gallons were eliminated, particularly for firms or brands heavily committed to them. Some firms may have recently installed new half-gallon bottling equipment, which an elimination of the half-gallon size would have rendered obsolete.

There is a final but very important point regarding the industry's recommended bottle sizes. Some suppliers, it appears, did not have strong preferences regarding which

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metric sizes to request. Several suppliers stated that, frankly, they cared very little about what the sizes turned out to be, so long as there were fewer of them, with a good "spread", and with a smaller maximum size.

In contrast to the issue of bottle sizes, the issues of standardized case packings and length and nature of the phase-in were relatively non-controversial issues. Case packings were relatively standard (although not legally mandated) for U.S. suppliers before the conversion, so the impact, if any, would be primarily on importers and foreign suppliers. No evidence was found that foreign suppliers strongly opposed standard case packings. In regards to the issue of the phase-in period, the only strong sentiment appears to have been a desire by the industry to begin the optional period as soon as possible.

It should be pointed out that in spite of the different positions among suppliers discussed in this section, by the time of the hearing DISCUS approached BATF with a strong industry consensus. Even though there were considerable differences of opinion on a host of specific elements, as an "all or nothing" proposition, most firms and segments of the industry supported the final DISCUS proposal.

D. Position of Related Industries, Wholesalers and Retailers

The bottle manufacturers supported the DISCUS sizes, but were persistent and open in their support for a miniature and a size larger than 1 liter. Although these were high cost sizes for suppliers, they were high profit sizes for bottle producers. Representatives

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of the glass industry stated that they could have and would have supplied any set of sizes that distilled spirits suppliers or BATF desired.

We believe that glass industry support of the final DISCUS proposal was primarily to protect and enhance the goodwill of the spirits industry, that is, their customers. This was perhaps most evident in their testimony supporting the 1.75 liter as the largest size which could be economically produced. As mentioned before, glass manufacturers testified that the 1.75 liter size was the largest which could at that time or in the near future be "double-gobbed". The high efficiency of double (and triple) gobbing allows bottle producers to sell the (empty) bottle at a substantially lower price. It is generally true that the larger the bottle, the more difficult it becomes to use double gobbing in its production. However, the technical feasibility of double gobbing is more a question of bottle design than size. The economic feasibility of double gobbing is also a very complex matter. This is mainly a question of obtaining large enough production volume to justify the investment in new equipment. The short, squat, distinctive bottles with handles preferred by suppliers for this size are extremely difficult and expensive to double gob. Even today, most 1.75 liter distilled spirits bottles are still being produced by single gobbing methods.

This is not to imply that glass manufacturers gave untruthful testimony to BATF, but rather, that their support of the DISCUS sizes does not reflect any inherent production efficiencies of this overall sizing scheme. The sizing scheme did, of course, open up the possibility of common wine and spirits bottles.

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Bottle manufacturers also supported a long phase-in period and a size-by-size phase-in approach. The bottle manufacturing industry was very concerned that the combined impacts of simultaneous wine and distilled spirits conversions would overwhelm the mold-making capacity of the industry. Distinctive bottles have traditionally been an important marketing tool for suppliers. Suppliers perceive them as being essential for maintaining product differentiation and identification, and thus for establishing and protecting brand loyalty. Each distinctive bottle, as well as every standard one, requires a set of molds, the sum of which for the entire industry was approximately 1,800. The molds have to be custom made. Including bottle design, new bottles normally require a lead time of three to six months to deliver. If suppliers phased in the new sizes gradually, the bottle industry could more readily handle the conversion, but if many suppliers converted all or a substantial number of the sizes at once (which the bottle manufacturers probably anticipated) there could be chaos.

The bottle manufacturing industry, represented by GCMI, believed that a size-by-size phase-in with optional mandatory dates for each size would help facilitate a smooth conversion of bottle molds. DISCUS and the suppliers opposed this. They wanted each firm to have the flexibility to convert sizes on its own schedule. This would enable firms to plan their own conversion schedules based upon their unique production and market circumstances, and to minimize bottle and bottle mold obsolescence.

License state wholesalers and retailers as well as license and control state alcohol beverage authorities supported the conversion to metric. They also supported the DISCUS

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proposal, including the 1.75 liter size. The trade associations for all of these groups publicly endorsed and promoted the final DISCUS proposal. It appears that there was very little real preference among these groups regarding bottle sizes, except that there be fewer sizes. After the 1.75 liter size was agreed upon, their only disagreement with DISCUS was over the miniatures. Wholesalers and retailers in the states that permitted them were opposed to the abolition or restriction of miniatures. As mentioned earlier, three states required miniatures for on-premise consumption and would have been seriously affected by an elimination or restriction of their sale at the federal level. For these reasons, industry associations for retailers (National Liquor Stores Association--NLSA), wholesalers (Wine and Spirits Wholesalers of America--WSWA), the control states (National Alcoholic Beverage Control Association--NABCA), and the Kentucky Department of Alcoholic Beverage Control supported a miniature size and opposed restrictions of any kind on it. NABCA is very influential with both BATF and DISCUS.

License state wholesalers and retailers (as opposed to control states) had the most to gain from a conversion--that is, from a conversion that resulted in fewer sizes. It offered them an opportunity to increase their turnover ratio (cost of goods sold divided by average inventory), a key ingredient to profitability. It is well known in the industry that control states have substantially higher turnover ratios, both at the wholesale and retail levels. A major wholesale trade association stated that turnover ratios in license states are typically 6 to 7, while in control states they sometimes approach 10. This is because control states typically stock fewer sizes and brands. With a monopoly position over what the consumer is offered within the state, the effect of aggregate demand is that more is

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sold of each of the limited number of items that are stocked. In other words, goods move faster. A wholesaler or retailer in a license state which cuts its selection of brands or sizes to obtain a higher turnover ratio risks losing part of its customer base, jeopardizing its profitability and, perhaps, its very existence. However, if all wholesalers and retailers reduced the number of sizes stocked (such as through a reduction in the number of allowable sizes nationally) all would stand to benefit. A slight benefit was also perceived from standardizing case packings, which would simplify inventorying and handling to some extent.

In summary, the wholesalers, retailers, and control states played a rather passive but still influential role in the planning of this conversion. The primary benefit that they perceived was a reduction in the number of different bottle sizes they would need to stock. The more open and competitive the retail and wholesale sectors (that is, the greater the number of customary sizes stocked), the greater were the anticipated benefits. Wholesalers, retailers, and control states participated with DISCUS in the "united front" presented to BATF. They expressed disagreement with the DISCUS proposals only on specific elements which conflicted with their particular interests.

E. The Role of BATF

BATF did not perceive any significant benefits to itself from a metric conversion. The very slight reduction in record keeping and reporting burdens which were conceivably possible were perceived as being overwhelmed by the efforts required to plan and manage a conversion. In addition, there were long-term unknowns, always perceived as negative,

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to the conversion, such as tax conversions, with which it would have to contend for a long time to come. The reasons BATF responded favorably to the concept of a conversion were discussed earlier. The following pages discuss how the decision-making process occurred and why the sizes and other issues were decided the way they were.

Top management as well as many of the technical staff of the Bureau were favorably disposed toward a conversion to metric, for both wine and spirits. During the early period, there was much discussion within and outside the government on the inevitability of a U.S. conversion to the metric system. Bills had been introduced in both houses of Congress (January 1973 in the Senate and March 1973 in the House of Representatives) establishing a national metric conversion program. The problem of consumer deception from down-sized imports was discussed earlier. BATF saw metrication as a means of meeting its responsibilities under Section 5 of the Federal Alcohol Administration Act, which grants the Bureau authority to regulate container sizes in order to prevent consumer deception.

After DISCUS submitted its original petition, BATF began an extensive analysis of the issues pertinent to conversion--including legal and regulatory ramifications, international sizing, and other issues. It also began to assess DISCUS' recommended sizes.

The first and most basic question that surfaced was what the new standard size should be. The first step in resolving this question was to determine the current standard size. The second step was to determine the closest appropriate metric size to replace it.

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Beginning with its revised petition and continuing throughout the remainder of the entire negotiation period, DISCUS and the industry argued that the "fifth" was the standard size, and that it should be replaced by the 750ml size as the standard metric size. BATF came to believe that an equally good or better argument could be made for the quart, which would imply a liter standard. Furthermore, the liter was more attractive to the Bureau since it would, to some extent at least, facilitate using whole numbers and thus ease calculations in inspections, audits, and tax collection and accounting.

Both DISCUS and BATF used trade statistics to support their positions. DISCUS pointed to the fact that in 1973, "fifths" accounted for 24.1 percent of all bottles used while the quart accounted for only 22.9 percent. Indeed, the 1970-1973 (4 year) averages were 25.3 percent for the "fifth" and 21.8 percent for the quart. DISCUS claimed that the quart used to be the standard, until World War II when the "fifth" was introduced as the "Victory Bottle". BATF pointed to statistics showing that: (1) the two sizes in 1973 were approximately of equal popularity (24.1 percent versus 22.9 percent is only a 1.2 percentage point difference); (2) the volume of product bottled in quarts was substantially greater than in "fifths" (almost 19 percent more), and; (3) the industry trend was away from the "fifth" and toward the quart. Comparing 1973 with 1970, the number of "fifth" bottles used decreased 19 percent while the number of quart bottles used increased 12 percent.¹

DISCUS argued that it would be advantageous for the wine and distilled spirits industries to have the same size bottles, due to potential cost savings. BATF's position

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was that the sizing strategy for each had to be developed separately, with sensitivity to the differences in consumer size preferences for wine and spirits. The key factor here is that when a wine bottle is opened, it is generally consumed immediately, since it suffers rapid deterioration of quality after opening. Distilled spirits have a long shelf life after opening and thus, except for the smaller sizes, are not typically purchased to be totally consumed immediately upon opening. This basic product difference, along with differences in alcohol content, storage requirements, and perhaps other reasons, results in different consumer volumetric preferences for wine and spirits containers. The "fifth" was indeed the overwhelming most popular wine size, accounting for roughly half of industry sales, and BATF supported it for the standard wine size. BATF recognized the benefits that could accrue to both industries from common bottle sizes. However, on this issue industry benefits weighed less heavily in BATF's decision-making than did consumer preferences.

A word regarding indirect consumer input is appropriate here in the discussion of the use of statistics in evaluating alternative sizing schemes. BATF believed that one of the best ways to incorporate consumer preferences into the selection of the new sizes was to use industry statistics. Production and purchase statistics were seen as about the only source of empirical evidence on the size preferences of consumers. In addition to BATF's reliance upon statistics in the selection of the standard size, it also used statistics on half-gallon sales to show that consumers did in fact desire an "economy" or "magnum" size significantly larger than 1 liter.

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From a review of industry statistics on sales of smaller sizes it becomes apparent that the DISCUS sizes of 187.5ml (6.3 ounces) and 375ml (12.7 ounces) did not serve as close replacements for the two most popular smaller sizes--the half pint (8 ounces) and pint (16 ounces). Sizes of 250ml (8.5 ounces) and 500ml (16.9 ounces) were much closer in volume and had the additional advantage of being congruent with the liter standard, which BATF favored. There was still room in BATF's scheme for the 750ml size, since it was a very close replacement for the "fifth" and was a convenient fraction of a liter. Thus, BATF perceived a sizing scheme of 250ml, 500ml, 750ml, and 1 liter as being extremely attractive. It was a rational scheme which would facilitate consumer price comparisons and it very closely paralleled the four most popular customary sizes in terms of number of bottles purchased.

Both BATF management and technical staff were aware that the industry strongly preferred a down-sized scheme. Discussions with BATF staff, both at the management and technical levels, indicate that there was no BATF preference toward either up-sizing or down-sizing. BATF staff did not perceive up-sizing or down-sizing per se as an issue. The fact that their proposed sizes of 250ml and 500ml were up-sized was not based on this consideration.

Even though it took DISCUS a long time to recommend a size larger than 1 liter, BATF was convinced of the need for a larger size from the very beginning. Even if DISCUS had obtained a unanimous recommendation from the industry not to have a half-

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gallon equivalent, BATF still probably would have included one. The only question at BATF regarding the larger size was what exact size it should be.

The drawbacks to DISCUS' recommended 1.75 liter size were realized by BATF. It would not facilitate price comparisons across sizes by consumers. It would not facilitate ease of record keeping, reporting, or field inspections and audits. The former problem was of significantly greater concern to BATF. It appears that there were differences of opinion within BATF as to a preferable alternative. We believe that, overall, a 2.0 liter size was favored. This had the advantage of being a rational size and being closer in volume to the half-gallon than a 1.75 liter size (a 3.6 ounce difference for the 2.0 liter versus a 4.8 ounce difference for the 1.75 liter). However, as discussed above, DISCUS and the industry came forward with wide support and convincing testimony that the 1.75 liter size was the maximum that could be economically produced by advanced bottle production methods. BATF accepted the testimony on the economics of bottle production and technology constraints provided by industry because there was no rebuttal. The 1.5 liter size, another alternative, was somewhat attractive--since with it price comparisons across sizes would be easier--but BATF considered it an insufficient size increase over the 1 liter size. The half-gallon was twice the volume of the quart, and the gallon four times larger than the quart. Knowing full well its disadvantages, BATF ultimately accepted the 1.75 liter size as the most preferred replacement for the half-gallon. No comparison size to the gallon was established.

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While BATF and the industry disagreed on numerous issues regarding sizes, as well as other aspects of the conversion, these disagreements were underlaid by a common perspective of how the market functions and how consumers of distilled spirits products make purchase decisions. Both perceive that distilled spirits consumers generally know which type(s) of product (whiskey, vodka, rum, etc.) they intend to buy, the amount they want to buy, and approximately how much overall they intend to spend when they enter the retail establishment. In many cases, they also know which brand they want.² Price comparisons are generally made between the same sizes of different brands of the same type of product. Some, but fewer, price comparisons are made between the same sizes of different but similar types of products (such as Bourbons versus other whiskies, straight versus blended whiskies, and American versus Canadian whiskies).

Due to BATF's perception of consumer behavior, its most important objective in developing the sizing strategy was to obtain a good "spread" of product sizes that met the basic volumetric purchase requirements of consumers, and which would not be deceptive. Since price comparisons are most commonly made between the same sizes, the difficulty the 1.75 liter size posed in making price comparisons across sizes was not considered unacceptable. A parallel BATF objective was to select sizes which would not lead to exorbitant bottle costs, which would ultimately be passed on to the consumer. The 1.75 liter size represented an acceptable "spread" from the liter, satisfying the first objective. It also would result (at least there was testimony that it would) in low-cost bottles, and thus satisfy the second objective. BATF (and everyone else involved for that matter) fully recognized that with the 1.75 liter size, unit price comparisons would be more difficult to

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make across bottle sizes. BATF believed that this was a necessary and acceptable trade-off for meeting the other two, more important objectives.

It is interesting that retail unit pricing did not surface as an issue during the discussions on the 1.75 liter size. The main disadvantage of the 1.75 liter size--the difficulty it presents in making price comparisons across sizes--might not have been such a concern if retail liquor stores posted unit prices such as are common in grocery stores. We could not identify even one control state which posts unit prices, even though their outlets often post prices on mounted posters or price sheets. Unit pricing would be very easy and inexpensive to implement under these circumstances. The lack of a common practice of posting unit prices in retail liquor stores put BATF under additional pressure to develop a sizing scheme which facilitated unit price comparisons by consumers. It was with reluctance that BATF accepted the 1.75 liter size. The reason for selecting the 200ml size, at least to some extent, was to facilitate price comparisons (i.e. through a 1-2-5 approach). We cannot state whether the substitution of the 200ml for the 250ml accomplished this objective.

F. Consumer Involvement

BATF did not make special efforts to obtain input on the issues from consumers and consumer groups. Certainly, DISCUS did not see its main mission as being to protect the consumer, although it was somewhat concerned about the impact upon its members of adverse consumer reaction to the conversion. DISCUS did not want the industry to be perceived as anti-consumer. It did not attempt to thwart consumer input. Both DISCUS

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and the industry, in general, felt that consumers were adequately protected by BATF and by a highly competitive marketplace that provided consumers with high quality distilled spirits products at reasonable prices.

Section 5e of the Federal Alcohol Administration Act contains provisions which grant BATF the authority to issue regulations on the size and fill of containers which "...will prohibit deception of the consumer with respect to such products or the quantity thereof". The Federal government, through various agencies, has regulated standards of fill for distilled spirits since 1934. In a legal opinion generated from a standards of fill matter arising in the early 1960's, the Director of the Alcohol and Tax Division of the U.S. Treasury Department (which later became BATF) was advised that "... in authorizing the standards of fill, the Director must first find the adoption would not be likely to result in consumer deception. If he does not so find, he may consider other factors such as economic or social, and whether a need for any additional sizes has been shown".³ This opinion was generated in response to an industry proposal in 1961 to allow firms to "package to price". This approach means that if, for example, it became unprofitable to sell a particular size at the going price, and the price could not be raised without curtailing sales, then the package size would be reduced and the price kept the same. The industry petitioned for sizes of 1/3 gallon, 1/6 gallon, 1/12 gallon, and 1/20 gallon to accomplish this purpose. The sizes were rejected by the Bureau.

The Chief Council of the Bureau had advised the Director in this case that, "The consumer, as defined in the FAA Act, must be construed to include the casual, careless,

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unthinking, and credulous purchaser, as well as the more sophisticated, careful, and intelligent". He advised that, "The statutory test, 'as will prohibit deception of the consumer', should be construed as meaning 'as will not reasonably be likely to result in deception', or, 'as will not have a tendency or capacity to deceive'. Actual deception of the consumer need not be shown."⁵ Thus, the Director could find that proposed new bottle sizes would be likely to result in deception even though deception had not been intended or actually taken place. The Chief Council laid out some general guidelines for dealing with cases where evidence of deception existed. The Director was advised that if he found that proposed new sizes would have the tendency or capacity to deceive or mislead the consumer, such a finding would be conclusive. If he did not so find, he could then consider other factors such as economic and social aspects.

In light of the regulatory history and resulting legal opinions, BATF staff analyzed the proposed DISCUS sizing scheme (46.8ml, 187.5ml, 375ml, 750ml, 1 liter and 1.75 liter) and issued at least one memorandum on the results. They found that, in and of themselves, the proposed sizes did not appear to be deceptive. They were found to be widely separated in volume and thus not likely to be confused with each other. They also found that both miniatures and half-gallons had been in use since before 1920, and that an airline survey had shown that 75% of passengers desired to purchase alcoholic beverages in flight. Again, as mentioned earlier, they closely scrutinized purchase statistics on the various sizes, including the half-gallon and gallon.

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Upon review of the record, the Administrative Procedures Act, and other administrative requirements, it appears that the Bureau correctly followed the administrative procedures which were required of it. They assured themselves that sizes were not deceptive; established justification that a need existed to establish new sizes; reviewed the legislative and regulatory history to ensure they had legal authority for their decisions and were following proper procedures; and considered the economic aspects of the conversion under alternative sizes and size schemes. BATF published the notice of proposed rulemaking and public hearing in the Federal Register; requested, received, and analyzed the written comments; took oral and written testimony at a public hearing; and requested, reviewed, and analyzed more comments. Thus, BATF appears to have followed official procedures and met its official responsibilities, including those regarding consumer protection. However, BATF did not make substantial special efforts to obtain consumer input on the issues or to verify the competence or validity of the testimony it did receive from consumers and groups which purported to speak for them. It also did not verify the validity of industry testimony regarding double-gobbing the 1.75 liter size.

G. The Role of Top Management at DISCUS, BATF, and Supplier Firms

During both the motivation and planning phases of this conversion, for almost every group involved, it was management at the highest level which took the actions and made the decisions. At DISCUS, the president, executive vice president, and general counsel were the key participants. In the supplier firms, it was their top executives, often including the general counsel, who were involved in negotiations and decision-making.

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BATF followed its normal procedures, where technical staff conducted most of the research and analysis and made recommendations to higher management on the various aspects of the issues and problems. What was unusual about the conversion issue was that top management at BATF did not necessarily accept the recommendations of lower staff in their decision-making. For most issues in this conversion--particularly the sizing scheme--the decisions were made at the highest levels of the Bureau. It was also top management in the various trade associations, bottle manufacturers, and control state groups which represented their groups' interests in the discussions and negotiations which led to this conversion. Perhaps the only area where high officials did not play the key role was in the international governmental interface.

H. The Impact of International Considerations and Metric Groups

BATF selected the liter as the standard container size. Thus, the 500ml became its logical selection for a medium size. The 750ml and 50ml sizes were also selected. With these sizes selected, BATF then approached the decision of the next-to-the-smallest size: should it be a 187.5ml size as recommended by DISCUS, a 250ml size as BATF had previously proposed, or some other size? To the astonishment of DISCUS and the industry, the 200ml size was selected.

In its publication of the new standards, BATF gave four reasons for its selection: (1) the 187.5ml size was difficult to manipulate mathematically, especially since it contained a decimal fraction, and would create hardships for consumers, retailers, wholesalers, bottlers, and various government agencies which have to manipulate the figures in various

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records and accounts; (2) the 200ml would not require a price increase over the half-pint. The industry had stated in its support for the 187.5ml that the 250ml would require a price increase and that the 187.5ml would be bottled faster and cheaper than a 250ml. BATF argued that the 200ml could also be bottled cheaper and faster than the 250ml, thus generating production efficiencies and, with its lower volume of contents, would not require a price increase. From discussions with the participants in these events and review of the written record, it appears that it was the next two stated reasons which weighed most heavily with BATF and were the key reasons for its selection: (3) the EEC was moving to a 200ml as opposed to a 250ml standard size; and (4) some consumers and representatives from metric groups favored a 1-2-5 sizing scheme. These last two reasons are discussed in more detail below.

In October 1975, after the public hearing, the Delegation of the Commission of the European Communities and the U.S. Mission to the EEC in Brussels notified BATF that the EEC would soon accept the 200ml as a standard size for commerce and that the 250ml was to be phased out effective January 1, 1980. It is not known if BATF independently confirmed this or why this was not uncovered earlier by BATF, but the 200ml was approved by the EEC and the 250ml phased out in 1980. This only refers to sizes which must be permitted in trade--EEC members are free to allow other sizes.

Beginning just before the hearing and continuing sometime thereafter, BATF received comments from several consumers and metric groups requesting a 1-2-5 sizing scheme. The 1-2-5 sizing scheme was supported by three unaffiliated consumers, two

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officials from the U.S. Metric Association, and the Canadian Metric Association (another U.S. Metric Association representative supported the BATF's proposal, except for the 1.75 liter size). In most cases these parties claimed that the 1-2-5 system was "standard metric practice" and yielded an "optimal" sizing scheme. The 1-2-5 scheme was usually supported in these comments by the fact that such a scheme allows per-unit prices to be calculated without having to do more than multiply or divide by two (and move decimal points). BATF considered the recommendations from the two metric associations as being from "metric experts" and considered this to be official, competent guidance of major metric advocates in the U.S. and Canada. They were given an extremely large weight in the decision-making. Indeed, based upon these comments, BATF termed the 200ml in its notice of rulemaking a "true metric size."⁶

There is no evidence that BATF contacted or attempted to learn more about these groups: to determine to what extent they were representative of "metric advocates" or "metric experts"; to what extent their contentions regarding a 1-2-5 sizing scheme were justified; and to what extent they were affiliated with governments. According to a staff member from the Metric Commission Canada, the official Canadian government agency with responsibility for metric matters (which was operational during this period), there are numerous private metric groups in Canada. Metric Commission Canada has little or no control over these groups, and is not accountable for their actions or competency. Furthermore, they stated that there are numerous sizing schemes which can be used to guide a selection of metric sizes, but that none of them is necessarily always preferable to any other.

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The proper way to apply these schemes is to use them as alternatives, perhaps developing others as well, and to select the most attractive scheme based upon the specific product, market, and circumstances at hand. Whether or not the U.S. Metric Association was the appropriate group to represent U.S. "metric advocates" and "metric experts" in this conversion, no other U.S. metric group commented to BATF. An official at ANMC stated that they did not become involved because the conversion was already "on track" and progressing by the time they became fully operational. The United States Metric Board was also not fully operational during most of this period.

A few final notes should be made regarding the foreign interface. BATF received comments, recommendations, and requests from parties in practically every country in Europe. The positions of these groups (in some cases, governments) varied tremendously. They usually were very narrowly focussed on a particular negative impact upon a product they exported to the U.S. BATF attempted but found it impossible to find any meaningful trends in the comments from foreign firms or governments, except that just about as many supported their sizes as supported DISCUS'. The Association of Canadian Distillers and the Canadian Metric Association were the only Canadian groups that commented to BATF. Given the proximity of the U.S. to Canada, the flow of distilled spirits between the two countries, and the highly interrelated U.S. and Canadian supplier industry, BATF felt it was prudent to accomodate their interests to the maximum extent possible. It gave considerable weight to the 1-2-5 sizing recommendations of the Canadian Metric Association.

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Lastly, an embassy official of a major European nation, who monitored and was involved in the conversion process, stated that BATF did not make a concerted effort to elicit recommendations from or to cooperate with the Europeans regarding container sizes. Indeed, most of the international interface in this conversion was conducted by industry officials, generally top management from the large internationally active firms. The Europeans felt they should have been more involved at the official governmental level in this process since, in their eyes, this was not merely a conversion but also a trade restriction matter. If BATF and the industry had not sought to remove the exceptions for imports, the conversion and new sizes would have been of little importance to the Europeans. However, as it occurred, this conversion had significant impact upon their suppliers and will probably mean that the 750ml as opposed to the 700ml will ultimately become the standard European size.

As of the publication of this report, the EEC-approved permanent sizes for distilled spirits are 20ml, 30ml, 40ml, 50ml, 100ml, 200ml, 500ml, 1 liter, 1.5 liter, 2 liter, 2.5 liter, and 3 liter. The following sizes are temporary until December 31, 1988 when a decision will be made as to which of these will be permanent: 350ml, 375ml, 700ml, and 750ml.⁷

It is worth mentioning that metrication might have been considered as a lever to reduce European tariff barriers to U.S. distilled spirits exports. In general, European duties on these products are much higher than ours. For example, British duties on Bourbon are five times U.S. duties on Scotch.⁸

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I. Nature of the Discussions

There is considerable documentation available on the conversion, mainly from BATF files. There were many written comments submitted to BATF, since many parties believed that one way to ensure that their position would be considered was to submit it in writing to the official record. However, participants in this conversion have repeatedly stated that a great deal of both the intra-industry and industry-government discussions and negotiations occurred informally. This is probably more true, however, for the intra-industry negotiations.

J. Anti-trust Implications

There appears to have been little industry or governmental concern regarding anti-trust matters. DISCUS legal staff provided an opinion that the Noerr-Pennington Exception, which allows firms to combine to seek regulatory changes, applied to this activity. Some care, however, had to be taken that discussions at meetings did not stray into subject areas that could be construed as anti-competitive.

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Chapter III - Footnotes

1. DISCUS' Annual Statistical Review, p. 45.
2. The only data located that would shed any light at all on these perceptions (which are widely held throughout the industry) were from a Newsweek Magazine survey which found that the percentages of drinkers aware of the brand they use most often at home varied from a low of 75% for cordials to a high of 98% for gin. It also found that the percentages of customers in bars or restaurants who specify a specific brand range from a low of 26% for vodka to a high of 64% for Scotch. The widespread industry consensus on consumer behavior most likely results from proprietary market research.
3. BATF internal memorandum, 3-11-75, from a staff member to project 74R-33.
4. Ibid.
5. Ibid.
6. Treasury Decision ATF-25, p. 2, as published in the Federal Register on March 10, 1975.
7. Conversation with an official of the Metric Commission Canada, February 12, 1981.
8. 1980 Liquor Handbook, p. 204.

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CHAPTER IV

THE IMPLEMENTATION PHASE

(October 1976 to January 1, 1980)

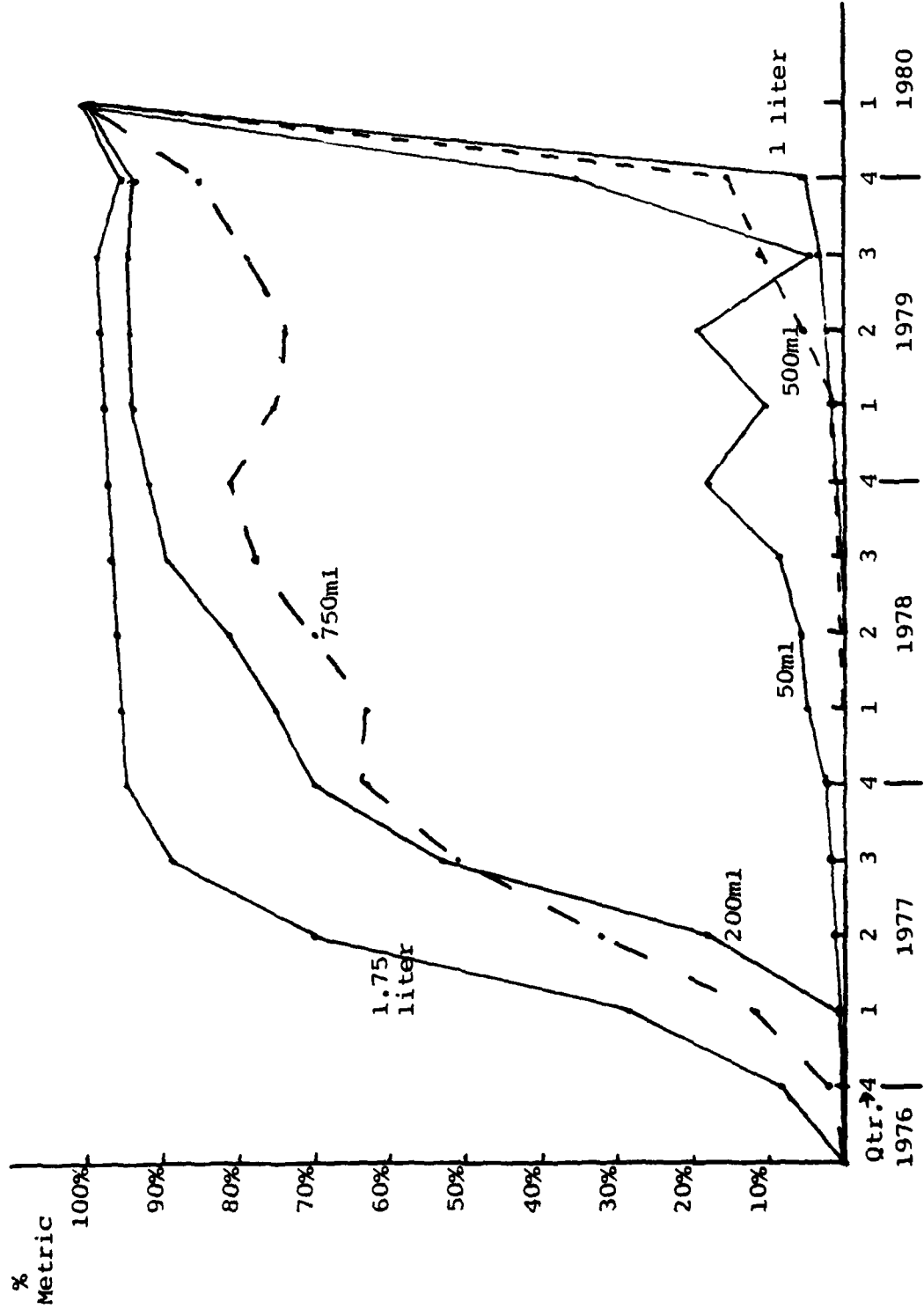
A. The Phase-in of the New Sizes

On October 1, 1976, domestic firms could begin bottling distilled spirits in the new sizes. The first sizes to be introduced were usually the 1.75 liter, 750ml, and 200ml sizes. These were all sizes which had been down-sized. The 50ml, 500ml, and 1 liter sizes were phased in later. The 500ml and 1 liter sizes, in particular, were generally introduced as late as possible. Thus, there were actually two conversions: one during the very beginning of the optional period for the 1.75 liter, 750ml and 200ml; and one just before the beginning of the mandatory period (which began January 1, 1980) for the 1 liter, 500ml, and 50ml.

The phase-in of the bottle sizes is presented graphically in Figure IV-1. By the end of the first six months of the optional period, approximately 27% of 1.75 liter containers and 15% of 750ml containers had been converted. There was practically no conversion of the other sizes during this period. By the end of the first year, approximately 88% of the 1.75 liter, 53% of the 200ml, and 52% of the 750ml containers had been phased in. Thus, the 200ml size went from roughly zero to over 50% in this six-month period. The last quarter of 1977 showed further steep increases with the percentages for the 1.75 liter, 200ml, and 750ml reaching 95%, 70% and 63% respectively. From the beginning of 1978 on, the phase-in of these three sizes

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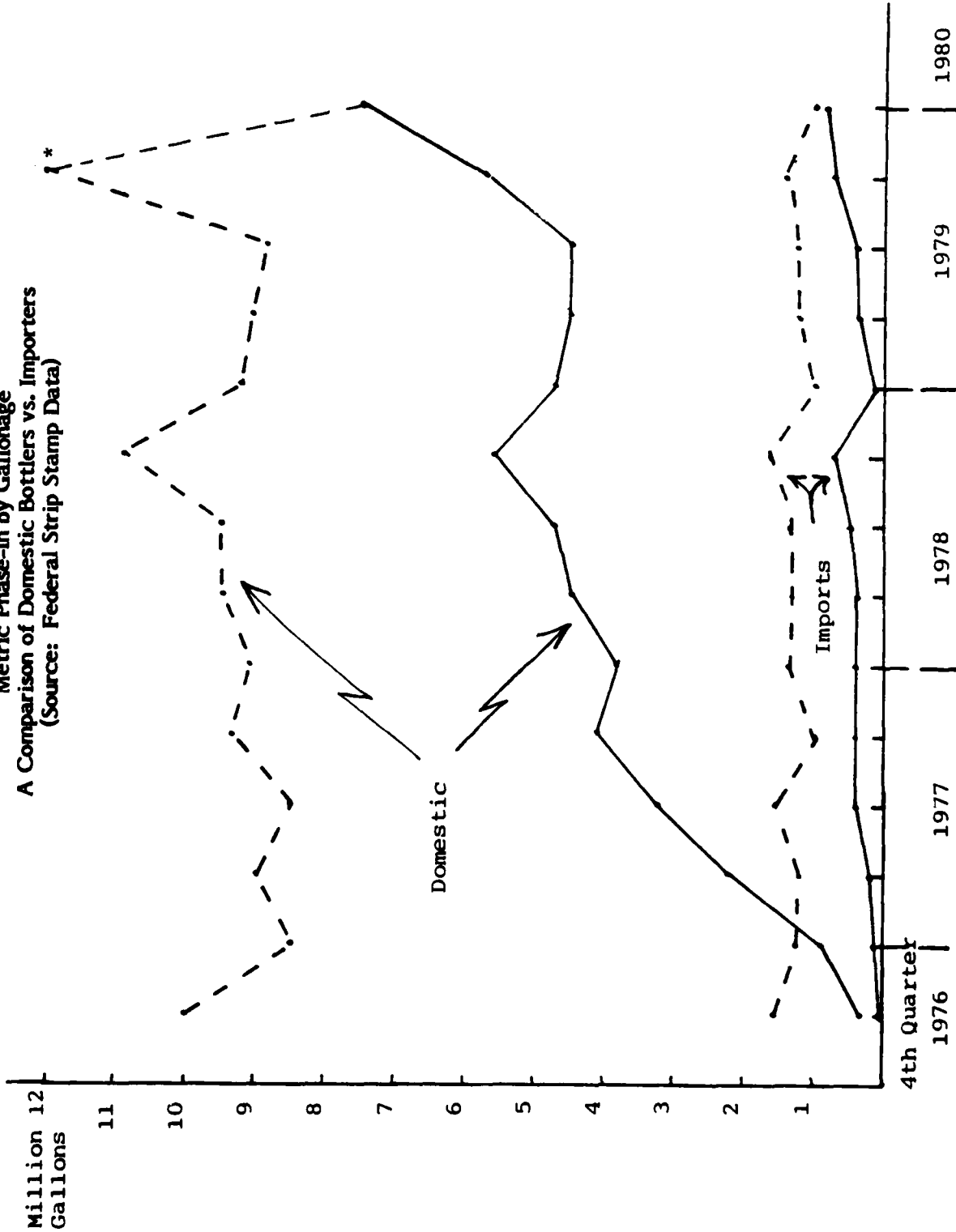
Figure IV-1
Metric Phase-In
(Source: Federal Strip Stamp Data)



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Figure IV-2

Metric Phase-In by Gallonage
 A Comparison of Domestic Bottlers vs. Importers
 (Source: Federal Strip Stamp Data)



*This reflects last minute stocking up of quarts and pints which is discussed later on.

----- All Sizes
 _____ Metric Sizes

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increased more moderately, with a small amount of customary sizes still appearing until the mandatory period began on January 1, 1980. It is likely that these were primarily imports, since imports were substantially slower to convert (see Figure IV-2).

The percentage differences are reasonably consistent with import market shares of the three sizes. Thus, by the end of 1977, 15 months after the optional period began, the domestic industry had substantially completed converting three of the six sizes. These three sizes represented approximately 62% of total volume bottled and 59% of all bottles filled in 1977.

In 1978, there was a slight movement to convert the 50ml, which by the end of the year was approximately 17% converted, but there was practically no conversion to the 500ml or 1 liter sizes. Beginning in 1979, the statistics indicate that the 50ml share of miniature production rose and fell rather dramatically over the remainder of the optional period. We are not sure of the reason for this. It was probably due to imports entering distribution (this is when they are taxed) in "lumpy" increments, or domestic suppliers shifting production back and forth between metric and customary sizes to accommodate converted and unconverted markets, or a combination of the two factors.

It was not until late 1979 that there was any activity at all on the 500ml and 1 liter sizes. Practically the entire conversion of these two sizes and most of the 50ml conversion occurred at the mandatory date. In the last quarter of 1979, the 50ml's metric percentage was 35%, the 500ml's only 15%, and the liter's only 5%. Beginning 1980, of

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course, all production was in metric bottles. Figure IV-2 clearly shows that for domestic bottled products, there was a sharp introduction of metric sizes in the initial part of the optional period, a plateau across 1978 and most of 1979, and then an almost instantaneous rise to 100% metric in 1980.

Figure IV-2 also shows a dramatic increase in bottling of customary sizes during the last quarter of 1979. This was a last minute "stocking up" of customary sizes. There was extensive stocking up of quarts, and to a lesser degree, of pints in the last few months (and even hours) of the optional period. This may help explain the many reports of domestically-bottled products still in trade channels long after the mandatory period.

Of course, imported bottled products were also in trade channels long after the conversion. The regulations specified January 1, 1980, as the date beyond which no more bottling of customary sizes for the U.S. market could take place. For imports, there is an approximate six-week shipping time coupled with a 90-120 day inventory in U.S. Customs bonded warehouses (i.e. taxes not yet paid) before distribution. Foreign suppliers bottling for the U.S. market also were subject to longer lead times in obtaining metric containers in some of the U.S.-approved sizes and had limited flexibility in shipping the unused U.S. customary bottles to other markets. A major U.S. importer stated that foreign suppliers typically must accept larger minimum order lots of bottles (in order to obtain acceptable prices) and thus typically inventory larger stocks of them. All these factors probably contributed to the slower phase-in of imported bottles.

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It was marketing staff in the supplier companies who made the decision as to which sizes to convert first, and marketing staff who made the decisions to "stock up" at the end of the optional period. In many cases, the quarts were produced as special holiday gift packages. Even though the "stocking up" amounted to a large volume industry-wide, it is unclear whether it was a common, wide-spread practice, or if it was a massive effort by a limited number of firms. Some of the firms stated that they stockpiled, others that they did not. Although marketing drove the overall decision of which and when sizes would convert, the decision as to which plant or facility would convert to produce them was generally based upon production efficiency considerations.

Only limited information was available on state-by-state phase-in strategies. From the information available, it is doubtful that small or medium-sized firms used customary and metric molds of comparison sizes (e.g. 750 ml/"fifth") at the same time. There was considerable strategizing by all firms as to which states to ship to first, last, etc., and some of the large suppliers with numerous bottling lines may have attempted to exploit the market by producing comparison customary and metric sizes simultaneously. The BATF regulatory amendments defining irrevocability on a state, brand, and permit basis had eliminated most of the competitive advantage of the large firms in this regard. In general, the pattern that prevailed in the industry was an early marketing decision to convert to 1.75 liter, 750ml, and 200ml sizes as rapidly as practically possible. We are unsure of the general industry pattern, if any, for the 50ml--the decision on it appears to have varied substantially from firm to firm. Generally, when a bottling plant converted to a metric size, it stopped bottling the customary size it replaced.

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The reason why down-sized containers were introduced very early and up-sized containers as late as possible was due to the fact that per-unit-of-volume price increases could be introduced in the former, while shelf prices would have to be raised on the latter. With a down-sized bottle, per-unit-of-volume price increases could be made by keeping the shelf price the same or by lowering it proportionately less than the volume reduction. Thus, the supplier could raise its per-unit-of-volume price (or keep it the same if it wanted to) while making the product appear cheaper than a competitor's customary size that was still being sold.

There is a final but very important note regarding the phase-in of the new sizes. In the beginning of the optional period, some suppliers tested consumer reaction by converting their least significant brands first, then their middle brands, and lastly their most important brands.

B. Problems Encountered and How They Were Resolved

Once the BATF ruling on the conversion was made, individual firms quickly became absorbed in the problems of planning and managing their individual conversions. DISCUS continued to track the implementation process and troubleshoot as problems arose. It played this role by monitoring the ongoing progress of conversion and serving as a focal point through which industry-wide implementation problems could be addressed, generally to BATF or state alcohol beverage control authorities. DISCUS provided the "follow-through" which was critical to the success of this conversion. There were numerous

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problems which arose after the conversion began which no single firm could resolve on its own. Some of the problems had been anticipated--others had not.

One of the major problems was that, at the time of the BATF ruling (March 10, 1976), many states had statues and/or regulations in effect which effectively prohibited some or all of the metric sizes or which were out of conformance with other aspects of the new regulations. By May 1976, DISCUS, through its field staff who operate at the state level, had completed a summary of state legislative and regulatory barriers to metrication, ongoing actions to change them, and the prospects for successful resolution of the problems before the implementation period. Legislative and/or regulatory changes were found to be required in 19 states to allow the new sizes. A few states had already acted. The main problems were:

1. explicit stipulations on which sizes could be sold (e.g. "gallon," "half-gallon," etc.),
2. maximum and minimum permissible sizes, and
3. possible tax increase or over-payments.

Probably the most widespread change needed (in 12 states) was modification of state minimum allowable sizes from 1/2 pint to 200ml. One state prohibited on-premise licensees from using containers smaller than a "fifth"; two states needed to revise their tax code in order not to result in increased tax rates; and at least two states had laws or

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A STUDY OF METRIC CONVERSION OF DISTILLED SPIRITS CONTAINERS: A--ETC(U)
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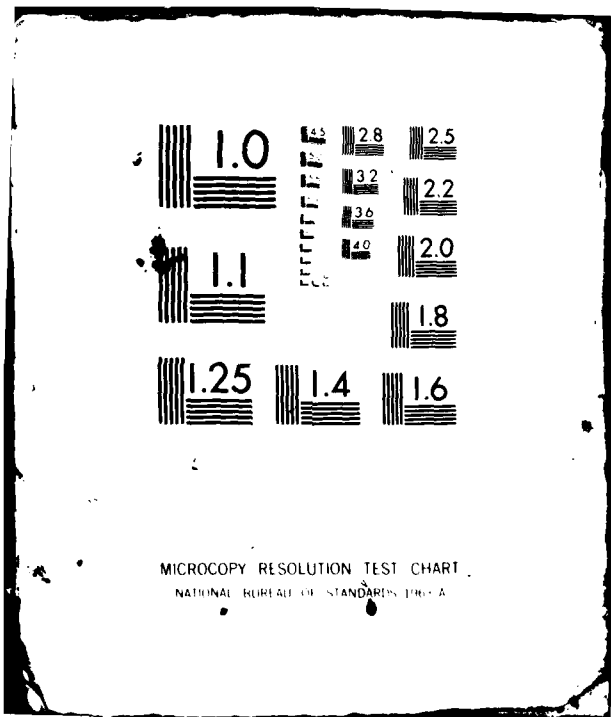
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regulations which needed to be revised to allow any of the new sizes, at least for some types of distilled spirits products.

No cases were found in which metric products were banned from entry or sale in a state due to conflicting laws or regulations. It appears that all states made the deadline. There were some temporary rulings allowing the metric sizes or allowing the 200ml as a 1/2 pint equivalent. Sometimes creative solutions were required. In one state, the legislature, which meets only every two years, had passed legislation before it had recessed (just before the ruling) allowing metric sizes but based on the proposed DISCUS sizing scheme. The state alcohol beverage control authority issued a regulation out of compliance with state statutes allowing the sizes selected by BATF. If this regulation had been contested in court before the legislature had convened and passed appropriate enabling legislation, it would have been ruled invalid. In summary, there were many legal issues to resolve at the state level. They were successfully resolved, but it took a considerable amount of effort.

Another problem faced by suppliers was price filings. Many license states require price filings, which in many cases the supplier must guarantee are the lowest prices charged in any other state (these are called affirmation prices). Most control states also required price filings. These often must be filed several months in advance. The effect of affirmation practices is that suppliers develop their price structure on the schedule of the most stringent state. A supplier could not generally ship metric sizes into a state unless it had prices on file in that state covering the period of introduction. These

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requirements made it essential that the state-by-state introduction and pricing of the metric sizes be carefully planned in advance.

Another minor problem was coordinating shipments. This appears to have been a problem mainly in control states. Most were quite cooperative as to when metric sizes for particular brands or products could be shipped, but some were very stringent as to when they would accept metric sizes and when they would no longer accept customary sizes. Suppliers were forced to accommodate them.

Shipping errors were consistently mentioned as a minor yet troublesome problem. The most common mistakes seem to have been accidentally introducing metric sizes too soon into a state (even a case and it would be irrevocable) and accidentally shipping customary sizes of a brand into a state which the supplier had already converted. The supplier bore the freight expense when it was returned.

There were some delays in making molds and thus some suppliers did not receive their new bottles as early as they had hoped. The main bottle problems appear to have been incurred by small firms who were using distinctive bottles (many, maybe most, do). It appears that the major bottle manufacturers used the metric conversion to restructure their business. This was a time when bottle manufacturers were suffering from soda ash and energy shortages and high prices. They were facing stiff competition from can and plastic containers. They began targeting their business more toward larger customers, cutting options and offerings to small bottlers. They urged suppliers to use standard

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bottles, and they significantly reduced the number of private molds available. Minimum purchase quantities were commonly increased. Small bottlers also generally had much less control than large firms over when they received their metric bottles. Many small suppliers went looking for other bottle suppliers, but most bottle suppliers were not taking new customers during this period. It appears that small distilled spirits firms did not generally accept standard bottles and ended up going with new, often smaller bottle suppliers.

Control states, license-state distributors, and large retail chains faced a problem of modifying their inventory control systems (usually computerized) and reports to accommodate the new sizes. These systems are generally quite flexible and are designed to facilitate changing stock items and prices. The main problem was developing the capacity to handle double stocking, that is, having both metric and customary sizes at the same time. In some cases, this doubled the number of different items and prices that had to be traced. At least one control state had to make extensive changes to a new, state-wide inventory control system to accommodate the conversion. At the wholesale and retail levels, much planning and management of ordering, stocking and shipping were required to facilitate a smooth phase-in of the new sizes, to minimize inventory swell from double stocking, and to ensure that adequate inventories of the appropriate brands and sizes were maintained. In those states requiring tax stamps, metric tax stamps had to be phased in.

It also should be noted that some states passed laws and regulations to help control or ensure a smooth conversion. For example, a number of states passed rulings that

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wholesalers and, in some cases, retailers were required to deplete all customary sizes of a brand before they could order metric sizes of that brand.

BATF found that, even after the optional period had begun, still more questions and problems needed to be resolved. For example, the Scotch Whisky Association and NAABI requested BATF to accept the spelling of "litre" in addition to "liter". This was granted. NAABI also petitioned BATF to change the designation of measurements to centiliters as opposed to milliliters. This was rejected. BATF also had to issue new rulings on various labelling requirements for distilled spirits in the metric standards of fill.

Supplier expressions of dissatisfaction with the metric sizes continued during the optional period. The most common complaint was the lack of a size between 200ml and 500ml. This surfaced within DISCUS, but DISCUS decided that no action should be taken and that they should wait for experience with the new sizes prescribed by BATF.

At the beginning of the mandatory period, BATF eliminated the standard case packing requirements, due to a great many requests for exemptions. The majority of states did not change (and still have not changed) their taxing basis to metric measure. The F.E.T. remains \$10.50 per proof gallon, and there is little movement afoot to change it. U.S. Customs duties also remain on a proof gallon basis, although the duty-free exemptions for returning U.S. tourists have been changed to metric measure.

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The conversion led to litigation over whether BATF has regulatory authority over sizes in intra-state commerce. BATF's position is that states can only prohibit sizes that it has allowed, and cannot allow additional sizes, even for intra-state production and sale. A major U.S. supplier supported litigation (of a small supplier) contesting BATF's authority to prohibit the production and sale intra-state of a 4 ounce distilled spirit. However, BATF's intra-state authority was upheld. If successful, this litigation could have opened the door to a proliferation of new sizes.

Finally, start and cutoff dates less disruptive to the industry might have been selected. The October 1 date for the beginning of the optional period was not optimal because bottling plants are generally in peak production for the holiday season. Industry-wide, October is the peak bottling month. January 1st was not a convenient start date for suppliers because this is in the period many states require taxes to be computed. This is a laborious, time-consuming process requiring a significant amount of both management and production staff time. According to plant managers, March or April would have been the ideal start-up time. The spring is a time of low to moderate bottling activity and key personnel are generally available.

C. Consumer Information and Education

On the same day BATF published its final decision it also issued a press release informing of its decision and pointing out the differences between the customary and new metric sizes. In March 1977, one year after the ruling and five months after the beginning of the optional period, BATF issued another press release specifically advising consumers


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to be certain of the sizes they buy because of the potential for confusion between bottles of different sizes which appear to look alike. It specifically called attention to the half-gallon, which contained 4.8 ounces more than the new 1.75 liter size but which may appear identical in appearance. It also began distribution on this date of a chart and display poster, which explained the differences between the old and new sizes.

To our knowledge, BATF could only recommend that the posters be displayed by retailers. Nevertheless, according to the main retailer trade association, the BATF posters were widely distributed and displayed by retailers. A copy of the chart and a reduced copy of the display poster which were distributed are presented in Figures IV-3 and IV-4. The poster was 18 x 12 inches in size and printed on bold red background to promote visibility. Unfortunately, the press releases appear to have been picked up mainly by local newspapers. A review of the Readers' Guide to Periodical Literature and the New York Times Index covering the entire optional period uncovered no articles on this specific conversion in the general media.

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Figure IV-3
CHART DISTRIBUTED BY BATF

 DEPARTMENT OF THE TREASURY BUREAU OF ALCOHOL, TOBACCO AND FIREARMS DISTILLED SPIRITS					
BOTTLE SIZE	EQUIVALENT FLUID OUNCES	BOTTLES PER CASE	LITERS PER CASE	U.S. GALLONS PER CASE	CORRESPONDS TO
1.75 liters	59.2 Fl. Oz.	6	10.50	2.773806	1/2 Gallon
1.00 liter	33.8 Fl. Oz.	12	12.00	3.170064	1 Quart
750 milliliters	25.4 Fl. Oz.	12	9.00	2.377548	4/5 Quart
500 milliliters	16.9 Fl. Oz.	24	12.00	3.170064	1 Pint
200 milliliters	6.8 Fl. Oz.	48	9.60	2.536051	1/2 Pint
50 milliliters	1.7 Fl. Oz.	120	6.00	1.585032	1, 1.6, & 2 Oz.

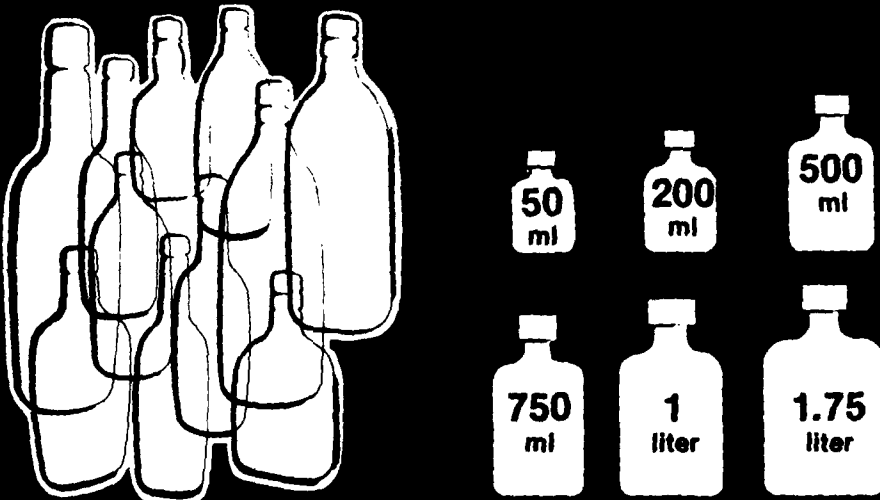
Official Conversion Factor: 1 Liter = 0.264172 U.S. Gallon.
Mandatory date for conversion: January 1, 1980.

ATF F 5100.10 (9-76)

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Figure IV-4

POSTER DISTRIBUTED BY BATF




Confusion . . . to simplicity

the NEW!

metric system

How do the new distilled spirits metric sizes compare with the current U.S. sizes?

 Department of the Treasury Bureau of Alcohol, Tobacco & Firearms	METRIC SIZES	FLUID OZ. IN METRIC SIZES	CORRESPONDING U.S. SIZES	FLUID OZ. IN U.S. SIZES
	50 ml	1.7 oz.	Miniature	1.6 oz.
200 ml	6.8 oz.	½ Pint	8 oz.	
500 ml	16.9 oz.	1 Pint	16 oz.	
750 ml	25.4 oz.	⅘ Quart	25.6 oz.	
1 liter	33.8 oz.	1 Quart	32 oz.	
1.75 liter	59.2 oz.	½ Gallon	64 oz.	

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CHAPTER V CONVERSION COSTS AND SAVINGS

A. Introduction

This chapter presents a discussion of the costs and savings to suppliers, wholesalers, and retailers that resulted from the conversion. The costs and savings of the conversion were estimated for the supplier industry based upon (1) numerous discussions with firms regarding the types and magnitudes of costs and savings they experienced and (2) actual cost and savings estimates provided to the project team by six suppliers. The suppliers ranged in size from very large to very small. They included importers, solely domestic suppliers, and firms producing diversified as well as narrow product lines. No firm had estimates on all items, and there was little similarity in how the estimates were categorized. All cost and savings estimates available were obtained, according to the categories in which they were available from the suppliers. For reasons of confidentiality, firm-level estimates are not presented.

The estimates from individual firms were used as building blocks for the development of benchmark estimates of conversion costs and savings for the industry as a whole, and the differential impacts upon small versus large firms, importers versus domestic-only suppliers, and narrow product line versus diversified product line firms. All cost coefficients for the supplier industry were obtained from the firms, DISCUS estimates, or published sources. Obsolescence factors, inventory stocking days, and other such elements in the cost and savings algorithms are based either upon discussions with

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firms, information obtained from DISCUS, or the project consultant's seven years' experience as an industry economist. Costs and savings incurred by wholesalers and retailers were based upon discussions with the major U.S. trade associations for liquor wholesalers and retailers, and alcohol beverage control authorities in three states.

B. Conversion Cost and Savings Factors

Essentially two kinds of costs and savings were incurred by industry firms--one-time and recurring. One-time costs and savings were experienced in making the conversion from customary to metric sizes. For example, bottles and labels had to be re-designed to accomodate the new metric sizes (one-time cost), but the conversion allowed suppliers to reduce their stocks of bottle caps and labels (a one-time saving) due to the fewer number of different-sized containers. One-time costs and savings were incurred during or immediately following the conversion period. Recurring costs and savings resulted from the conversion. For example, the conversion resulted in lower cost bottles due to increased standardization and weight reductions (a recurring savings), but due to the average down-sizing the number of bottles used by the industry is greater than it otherwise would have been (a recurring cost). Recurring costs and savings may impact the industry indefinitely. The convention of presenting them as annual figures was followed in this report.

Sections 1-4 below list the major one-time and recurring cost and savings factors experienced in this conversion. The factors listed here are those which had a noticeable

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impact. There were many other minor factors which, though real, were not significant enough to mention here.

1. One-time Costs of Conversion

The major one-time costs of the conversion were:

Suppliers

- Re-design of bottle labels
- Premature obsolescence of bottle molds
- Production line changes (labor and equipment)
- Management and planning time
- Data processing changes
- Miscellaneous factors--obsolescence of forms, mistakes, inventory swell, etc.
- Obsolescence of bottle labels
- Obsolescence of bottles

Wholesalers

- Data processing changes
- Inventory swell--increased handling, space requirements
- Errors--ordering and shipping mistakes, mistakes on excise tax payments, etc.

Retailers

- Record keeping and accounting changes
- Errors--ordering and pricing mistakes

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2. One-time Savings of Conversion

The major one-time savings of the conversion were:

Suppliers

- Decrease in number of bottle molds required
- Decrease in bottle cap inventory
- Decrease in bottle label inventory

Wholesalers

none

Retailers

none

3. Recurring Costs of the Conversion

The major recurring costs of the conversion are:

Suppliers

- Increase in number of bottles, caps, and labels required due to down-sizing

Wholesalers

none

Retailers

none

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4. Recurring Savings of the Conversion

The major recurring savings of the conversion are:

Suppliers

- o Cheaper bottles
- o Cheaper bottle caps

Wholesalers

- o Slightly higher turnover ratios

Retailers

- o Slightly higher turnover ratios

C. Supplier Cost and Savings Estimates

Figure V-1 presents the computations and resulting estimates of the one-time and recurring costs and savings to U.S. distilled spirits suppliers. The estimation algorithm is presented under each cost and savings factor. To obtain a perspective of the relative magnitude of the one-time dollar costs and savings, they are compared (as a percentage) with the total revenue stream of U.S. suppliers during the three and one-quarter year conversion period (October 1, 1976 to December 31, 1979; approximately \$8.125 billion). This is presented under the column heading "% of Concurrent Revenue".

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Figure V-1

Estimation of Costs and Savings - U.S. Distilled Spirits Suppliers

1. <u>One-time Costs</u>	Cost Amount (\$ millions)	% of Con- current Revenue
<u>Cost Factor and Estimation Alogrithm</u>		
1.1 Label Re-design (\$1,000/label)(3 labels/brand) (3,300 active U.S. brands)	= \$9.90	.122%
1.2 Bottle Mold Obsolescence (25% obsolescence) (1,800 molds in use) (\$15,000/mold)	= \$6.75	.083%
1.3 Production Line Changes - labor and equipment (400 bottling lines in U.S.)((\$9,250/bottling line)	= \$3.70	.045%
1.4 Management Time of 76 U.S. Suppliers: a. 20 largest = 1 man-year each b. 56 smallest = .125 man-year each (20 man years + (56)(.125 man-years)) ((\$50,000/man-year)(1.6 overhead factor))	= \$2.16	.027%
1.5 Data Processing Changes (128 plants)((\$7,500/plant)	= \$9.96	.012%
1.6 Miscellaneous Factors - obsolescence of forms, mistakes, inventory swell, etc. (128 plants) (\$5,000/plant)	= \$.64	.008%
1.7 Label Obsolescence (2.1 bil labels/year) (25% label inventory factor)(10% obsolescence) (\$.01/label)	= \$.53	.007%
1.8 Bottle Obsolescence <u>2.1 bil bottles used/year</u> <u>200 production days/year</u> (5 production days inventory)(5% obsolescence) (\$.1747 avg. price per bottle in 1977-80)	= \$.46	.006%
Total	<u>\$25.10</u>	<u>.309%</u>

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Figure V-1 (Cont.)

Estimation of Costs and Savings - U.S. Distilled Spirits Suppliers

2. One-time Savings

<u>Savings Factor and Estimation Algorithm</u>	<u>Savings Amount (\$ millions)</u>	<u>% of Concurrent Revenue</u>
2.1 Decrease in Number of Bottle Molds—Estimate pre-conversion requirement of 1,800 molds. Estimate 15% reduction due to conversion. (1,800 molds)(15% reduction)(\$15,000 cost per mold)	= \$4.05	.050%
2.2 Decrease in Bottle Cap Inventory due to Standardization. Estimate # bottle caps inventoried before conversion = # bottles inventoried = <u>2.1 bil bottles used/year</u> 200 production days/year (5 production days inventory) = 52.5 mil Estimate 1/3 of all caps were affected by standardization = 17.5 mil Estimate % decrease in inventory of those affected = 33% Decrease in inventory = (.33)(17.5 mil caps) (\$0.47 cost/cap)	= \$0.271	.003%
2.3 Decrease in Bottle Label Inventory - 1 label per bottle Label costs = \$.01 each Estimate 1.5% reduction in # different labels Avg. label inventory value = (2.1 bil bottles) (25% stocking factor)(\$0.01/label) = \$5.25 mil Savings = (1.5%)(5.25mil)	= \$0.079	.001%
Total	\$4.400	.054%

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Figure V-1 (Cont.)

Estimation of Costs and Savings - U.S. Distilled Spirits Suppliers

3. Recurring Costs

<u>Cost Factor and Estimation Algorithm</u>	<u>Cost Amount</u> (\$ millions/year)	<u>% of Annual Revenue</u>
<p>3.1 Increase in # Bottles Required Due to Down-Sizing (this estimate is bounded due to the large amount of uncertainty)</p> <p>Net change in bottle costs due to down-sizing = Increased costs due to increased bottles purchased</p> <p>Decreased costs due to price decreases from using smaller bottles OR:</p> <p>$C = A - B;$</p> <p>C_{LB} = lower bound cost C_{UB} = upper bound cost Estimate % increase in # containers = 3%-5% Weighted average price savings/container = 1.9% $C = A - B$</p> <p>$C_{LB} = (.03)(2.1 \text{ bil bottles})(\\$.2119) - (2.3 \text{ bil bottles})(\\$.2119)(.019)$ $C_{UB} = (.05)(2.1 \text{ bil bottles})(\\$.2119) - (2.3 \text{ bil bottles})(\\$.2119)(.019)$</p> <p>$C_{LB} = \\$13.35 \text{ mil} - \\9.26 mil $C = \\$4.09 \text{ to } \\12.99 .14% to .43% $C_{UB} = \\$22.25 \text{ mil} - \\9.26 mil</p>		
<p>3.2 Increase in # Bottle Caps Required Est. % increase in # caps = 3%-5% Est. avg. cost/cap = \$.047</p> <p>Increased Cost_{UB} = (.05)(2.1 bil caps)(\$.047) = \$2.96 to \$4.94 .10% to .16% Increased Cost_{LB} = (.03)(2.1 bil caps)(\$.047)</p>		

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Figure V-1 (Cont.)

Estimation of Costs and Savings - U.S. Distilled Spirits Suppliers

<u>Cost Factor and Estimation Algorithm</u>	<u>Cost Amount</u> (\$ millions/year)	<u>% of Annual Revenue</u>
3.3 Increase in # Labels Required Est. % increase in # labels = 3%-5% Est. label cost = \$.01 each		
Increased cost _{UB} = (.05)(2.1 bil labels) (\$0.01) = \$1.05 mil	= \$.63 to \$1.05	.02% to .04%
Increased cost _{LB} = (.03)(2.1 bil labels) (\$0.01) = \$.63 mil	_____	_____
Total	\$7.68 to \$18.98	.26 to .63
4. <u>Recurring Savings</u>		
<u>Savings Factor and Estimation Algorithm</u>	<u>Savings Amount</u> (\$ millions/year)	<u>% of Annual Revenue</u>
4.1 Cheaper Bottles		
4.1.1 Due to weight reductions Est: avg. decrease in weight = 7.5% P = f(W) and f' = .556 where P = bottle price/unit of weight; W = bottle weight		
Avg. rate of savings/container = (.075)(.556) = .0417 Est. 33% of all bottles are affected Total number of bottles affected = (.33)(2.3 bil bottles) = 759 mil bottles		
Savings/year = (759 mil bottles affected) (.0417)(\$2119 avg bottle cost in Dec. 1980)	= \$6.71	.22%

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<u>Savings Factor and Estimation Algorithm</u>	<u>Savings Amount</u> (\$ millions/year)	<u>% of Annual Revenue</u>
4.1.2 Bottle Production efficiencies-longer runs, fewer shut-downs, etc. Estimate % affected = 33% Estimate % savings to bottle manufacturer = .1% Estimate % savings passed on to distilled spirits supplier = 50% Savings to distilled spirits suppliers from bottle production efficiencies = (.5) (.33)(.001)(\$.2119/bottle cost)(2.3 bil bottles)	= \$.08	.003%
4.2 Cheaper Bottle Caps Estimate 33% are affected Estimate caps cheaper by 5% Estimate 2.3 bil caps used/year at \$.047 each Savings from cheaper caps = (.33) (.05)(\$.047)(2.3 bil bottles)	= \$1.78	.06%
Total	= \$8.57	.286

Note: Items may not add to totals due to rounding.

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The relative magnitudes of recurring costs and savings are estimated based upon annual revenues (\$3 billion for 1980 and beyond), and are presented under the column heading "% of Annual Revenue".

D. Discussion of Costs and Savings

For one-time costs, label re-design (\$9.9 million) and bottle mold obsolescence (\$6.75 million) were the two most significant factors. Label re-designs are performed by suppliers' ad agencies. The cost of even a small change is almost as much as a large one because a new template is required. Suppliers regard label appearance as a major factor in consumer buying decisions and even minor changes are given careful design consideration. Bottle mold obsolescence was low at each plant, but was substantial for the aggregate industry. Production line changes (\$3.7 million) and management time (\$2.16 million) were the third and fourth highest one-time costs. All other one-time costs are estimated at less than \$1 million each.

The greatest one-time saving (\$4.05 million) was obtained through a reduction in the number of bottle molds. Due to the reduction in the number of allowable sizes and increased standardization of bottles, it was estimated that 15% fewer molds are required to service the industry. Very small one-time savings were also realized from reductions in bottle cap inventories (\$271,000) and label inventories (\$79,000). The reduction in these inventories was due to increased standardization of caps and labels, made possible by the fewer sizes and increased standardization of bottles.

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Estimates of recurring costs are very difficult to make and must be interpreted with caution. All identified recurring costs are attributable to the sizing scheme which was selected. The average container size decreased, requiring more bottles, caps, and labels to move the same amount of product. Only rough estimates can be made at this time of the increase in the number of bottles required due to down-sizing. It is too early to determine the long-term impact of the conversion upon sales of the various sizes. There were numerous bottling spurts of the various sizes in 1978 and 1979, and quart and half-pint inventories which had been stockpiled were worked off far into 1980. Reliable data are available only on bottling and not on sales. It will be at least another year before a trend analysis can be conducted to determine the long-term changes in sales of the various sizes.

Furthermore, even when the long-term changes are known, it will be extremely difficult to estimate the proportion of the changes due to metrication. Consumer size preference is largely a function of absolute and relative price--both of which changed considerably with the conversion (this is discussed in Chapter VI). The upper bound estimate of the percentage increase in the number of additional containers due to down-sizing (5%) is based upon a 5.5% decrease in the average container size bottled from 1977 through the end of 1979 (thus requiring 5.8% more bottles), reduced .8% due to the stockpiling of quarts and half-pints which occurred.

The 3% lower bound is based upon rough estimates of suppliers and bottle manufacturers. It should be noted that most large suppliers stated that since the

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conversion they have noticed a small increase in overall bottle requirements which is not attributable to increases in gallonage sold. Since bottle costs are a major input cost item, small percentage increases in the number of bottles required, translate into large dollar amounts. It should be noted, however, that the recurring costs from the down-sizing are not the net costs to suppliers of the down-sizing. They are probably offset by the price re-structuring (discussed in Chapter VI) which occurred largely as a result of the down-sizing.

Due to the uncertainty, the estimates of the recurring costs from the increased number of bottles, caps, and labels are given with approximate upper and lower bounds. The reader is cautioned that even the bounds are only "best estimates" and may be subject to error. The cost of the additional bottles (\$4.09 million - \$12.99 million per year) is the recurring cost factor with the greatest potential impact. Additional caps (\$2.96 million - \$4.94 million) and additional labels (\$.63 million - \$1.05 million) are less important but still substantial factors.

The most significant recurring savings (\$6.71 million/year) resulted from the weight reductions in the newly configured metric bottles, which led to lower bottle prices. The increase in bottle standardization and reductions in the number of sizes also allowed certain bottle production efficiencies, leading to a small savings from cheaper bottles (\$.08 million/year). Bottle caps have been standardized by many suppliers, resulting in annual savings of \$1.78 million.

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E. Differential Impact on Small Suppliers

Small suppliers experienced the same cost and savings factors as the industry as a whole, but with many different magnitudes of impact. Label re-design and miscellaneous costs were approximately equal to the U.S. industry average. Bottle mold and label obsolescence were two to three times higher than the industry as a whole. Molds of smaller firms last longer, since they are used less intensively, limiting the ability of small firms to plan and manage an optimal phase-out of existing molds. Since small firms' inventory percentage of labels is higher, the loss factor is greater. Bottle obsolescence in small firms was significantly higher than the industry as a whole due to small firms' inability to ship their surpluses to unconverted states (they typically supply only limited, regional markets) and their higher inventory percentage of bottles. Production line changes were less costly for smaller firms because they generally use more versatile equipment. Data processing changes were also probably less costly since smaller firms typically have smaller and simpler data processing systems. Management time costs were less because there are fewer persons involved in decision-making. Smaller firms were probably impacted by the net down-sizing to the same extent as the industry as a whole.

Smaller firms probably did not realize as much savings from the decrease in number of bottle molds as did larger firms. Smaller firms typically did not produce all allowable sizes of their product. Furthermore, they typically market only one or a limited number of brands. It was the larger firms which produce many sizes and which shifted to standardized bottles across brands which realized most of these savings.

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Cheaper bottles is the other major savings factor not fully realized by small firms. Standardized, high volume bottles were required to reap this benefit and it was large and medium-sized firms which mainly benefitted. Some small firms have shifted to standard bottles or buy the same bottles as made for large suppliers. Many, however, have retained their distinctive, high cost bottles. Small firms probably realized the same magnitude of savings from decreases in bottle cap and label inventories and cheaper bottle caps as the industry as a whole.

F. Differential Impact on Narrow Product Line Suppliers

It is very difficult to separate out the impact upon narrow product line suppliers, since many, though by no means all, are also small suppliers. A small firm, with either a narrow or diversified product line would exhibit impacts closer to those applicable to small suppliers discussed above. Narrower product line suppliers, all other things being equal, would have had lower conversion costs and higher savings than the industry as a whole. Label re-design and bottle mold obsolescence were probably one-half to one-quarter the industry average, since these firms typically have a more limited number of different molds and labels. Label obsolescence, production line changes, bottle obsolescence, and management time were probably three-quarters to at most equal the industry average. Data processing changes, miscellaneous costs, and the recurring costs of down-sizing were probably approximately equal to the industry average. The main savings to narrow product line suppliers was cheaper bottles. Savings from cheaper caps, fewer bottle molds, and reduced inventories of caps and labels were approximately equal to the industry as a whole.

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G. Differential Impact on Importers and Foreign Suppliers

Bulk importers exhibited the same general types and magnitudes of conversion costs and savings as the U.S. supplier industry as a whole. Foreign exporters of bulk products to the U.S. felt no impact. The conversion of bottled imported products generated the same general types of costs and savings as the U.S. supplier industry as a whole, but the impact was split, shared, and in some cases duplicated by the U.S. importer and foreign supplier. The magnitude of the impact appears to have varied greatly across firms and brands.

U.S. importers of foreign-bottled products usually incurred only three types of conversion costs--data processing changes, management time, and miscellaneous costs. In general, the magnitude of these impacts on this group of firms appears to have been comparable to U.S. distilled spirits suppliers as a whole. There were probably no savings to this group.

Foreign suppliers of bottled products to the U.S. generally were impacted by the same types and magnitudes of costs and savings as U.S. suppliers as a whole. The only exception to this appears to have been higher label re-design costs. An agent for a foreign supplier stated that label re-design costs abroad are substantially higher than in the U.S.--approximately four times as much per label.

H. Impact on Wholesalers and Retailers

The only dollar estimate made for wholesalers and retailers is a \$500-\$1,000 one-time cost per wholesaler for data processing changes. The dollar impacts of inventory

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swell, record keeping/accounting changes, errors, and improvement in turnover ratios for wholesalers and retailers could not realistically be quantified. These costs and savings, even for firms which experienced them, were probably extremely small.

I. Comparison of Actual Costs with Anticipated Costs

Although estimates of anticipated costs made before the conversion occurred were not made available, most suppliers stated that the actual costs of converting turned out to be less than they had expected. The low cost figures above are consistent with this finding. There was some apprehension regarding conversion costs during the motivation and planning phases, especially right after the BATF decision. Overall, however, conversion costs were given little consideration by either BATF or DISCUS in deciding upon a sizing scheme, although some consideration was given to long-term cost impacts of the new sizes, e.g., the 1.75 liter size. The long phase-in period was ostensibly to ensure a planned, least-cost conversion but, as discussed earlier, conversion costs were subsidiary to marketing decisions in determining how the phase-in was carried out.

Although conversion costs played a minor role in the decision to convert and the manner of conversion, the potential savings from metrication were widely anticipated and discussed. Indeed, expected savings from fewer sizes and more standardized containers was one of the primary motives of larger firms to convert. Anticipated savings were widely heralded, however, by all firms, even by those whose primary motive was pricing considerations.

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J. Summary of Conversion Costs and Savings

Figure V-2 summarizes the costs and savings realized by U.S. distilled spirits suppliers. As discussed earlier, the net economic impact on wholesalers and retailers was extremely small, almost negligible.

An important word is in order regarding Figure V-2. From the perspectives of overall efficiency and costs to consumers and society as a whole, the recurring costs from the net down-sizing must also be included in the net economic impact of this conversion. Suppliers did not incur a net cost from down-sizing only because they recouped the increased bottle costs through changes in their price structure (this is discussed in the next chapter). From this broader perspective, it is apparent that the small savings realized from this conversion were at least partially, perhaps totally, offset by the increase in costs due to down-sizing. It is also possible that the overall net economic impact of the conversion was negative.

One or two more years of bottling data will be required along with detailed price and consumer preference analyses to estimate with reliability the true recurring cost impact of the down-sizing. However, it has been definitively determined in this analysis that the conversion offered many savings which were in fact realized. Savings could have been substantially greater, however, had there been more acceptance of standardized containers. Finally, the choices that were made in the selection of the new metric sizes, to some extent, compromised the cost savings made in other areas.

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Figure V-2

Summary of Costs and Savings to U.S. Distilled Spirits Suppliers

<u>One-time</u>		<u>\$ millions</u>
One-time Costs	=	\$25.1
One-time Savings	=	4.4
Net One-time Cost	=	\$20.7
 <u>Recurring</u>		
Recurring Savings	=	\$8.57 per year
Recurring Costs	=	\$7.68 - \$18.98 per year

Conclusion

Considering supplier industry revenues will approximate \$3.0 billion per year in the early 1980's, this conversion had only a minor impact on the cost structure of the industry.

Note: Both the net one-time and recurring costs were probably totally offset by price adjustments, which are discussed in the next chapter.

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CHAPTER VI

IMPACTS OF THE CONVERSION ON PRICES

A. Introduction

This chapter analyzes the behavior of prices before, during and after the conversion period. We are concerned not only with distilled spirits prices, but also with trends in costs faced by the suppliers which might explain prices. Did suppliers take advantage of the metric conversion to raise prices beyond what they would have been in the absence of the conversion? Did the conversion result in a change in the basic price relationships between sizes? These and other questions will be addressed in this chapter.

The first part of this chapter presents a brief history of price movements in the distilled spirits industry between 1970 and 1980. It describes the rate at which both liquor prices and prices of inputs rose during this period. It describes some of the pricing patterns of suppliers and the extent of competition which exists between brands and suppliers. The way suppliers view prices as a part of competition is discussed, and its impact on their pricing decisions before, during, and following the metric conversion is analyzed.

The second part presents a more detailed look at the behavior of prices before, during, and after the conversion period, and discusses the extent to which prices changed when metric sizes were introduced. Changes in per-unit-of-volume prices among the various sizes are presented. In this section, we also attempt to find the reality underlying

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perceptions of some consumers of price "rip-offs" by suppliers, and assertions of suppliers regarding how they treated the conversion with regard to pricing behavior.

Part three is a detailed analysis of container (bottle) costs and the relationships between these and the prices suppliers charge for the final product.

B. Overview of Historical Price and Cost Changes

According to the Consumer Price Index (CPI), prices of distilled spirits historically have been relatively stable. As measured by the Bureau of Labor Statistics, the retail price index for liquor stood at 138.5 (1967 = 100) during the 4th quarter of 1980 (see figure VI-1). This compares to an index level of 256.2 for all consumer prices, and to one of 190.9 for all alcohol beverage prices. Thus, over the 13-year period 1967-1980, retail prices of distilled spirits increased at an average compound rate of 2.5% compared to 7.5% for the CPI, and to 5.1% for alcohol beverages as a group.

A similar picture emerges at the supplier (producer) level. The DISCUS index of distilled spirits supplier prices was 123.4 (1967 = 100) during the 4th quarter of 1980. This compares to 4th quarter 1980 levels of 278.8 and 180.7 (1967 = 100) for all U.S. manufacturer prices and for all alcohol beverages at the producer level, respectively.

Although distilled spirits supplier prices rose only modestly between 1967 and 1980, those of products and services purchased by distillers did not. As shown in Figure VI-1, the index for fuels stood at 592.6 at the end of 1980, and as a review of the table reveals,

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Figure VI-1

Consumer and Producer Price Indexes
4th Quarter 1980
(1967 = 100)

<u>Index</u>	<u>4th Quarter 1980 Level</u>
Consumer Level	
All Products	256.2
Distilled Spirits ^a	138.5
Alcohol Beverages	190.9
Producer Prices	
All Manufactured Products	278.8
Distilled Spirits ^b	123.4
Alcohol Beverages	180.7
Products Purchased by Distillers	
Fuel	592.6
Paper & Paperboard Products	243.6
Liquor Bottles	333.5
Barrels	236.6
Grains	270.4
Railroad Freight	299.5

^aPrices are unadjusted for proof or age changes.

^bPrices are unadjusted for age changes.

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price indexes of each of the important components of production stood higher than that for spirits.

The Federal Excise Tax (F.E.T.) which has remained unchanged since 1951, can also be considered a production "cost". Indeed, this is a convention in the industry, with supplier prices typically quoted inclusive of F.E.T. but exclusive of state taxes. State taxes, which are generally based on volume and not proof-volume, have risen moderately over the last decade. Since the F.E.T. and state taxes are such large proportions of the selling prices--for example, approximately 35% and 13%, respectively at the retail level--the effect of the price increases of non-tax input costs must be considerably deflated in estimating their impact on supplier selling price.

An analysis based on price levels at the end of 1980 reveals a pattern of relatively slow price increases during the early years of the period 1967-1980, and relatively rapid increases during the later years. This pattern cuts across all indexes included in Figure VI-1. Figure VI-2 divides 1967-1980 into three periods--1967-1970, 1970-1976, and 1976-1980. With only one exception (grains), prices rose the slowest during the first period, and at increasingly rapid rates during the next two periods. At the retail level, distilled spirits prices rose at an average annual compound rate of 1.6% between 1967 and 1970, at 1.7% between 1970 and 1976, and at 3.9% during the last period. Rates of increases for all consumer prices and for all beverages behaved similarly, but at higher levels.

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Figure VI-2
Average Compound Growth Rates
in Selected Prices,
1967-1970, 1970-1976, and 1976-1980

Price Category	Period		
	1967-1970	1970-1976	1976-1980
Consumer Prices			
Total CPI	5.2%	6.6%	10.2%
Distilled Spirits ^a	1.6%	1.7%	3.9%
Alcohol Beverages	3.9%	4.6%	6.0%
U.S. Producer Prices			
Total U.S. Producer Prices	3.3%	8.8%	10.3%
Distilled Spirits ^b	0.3%	1.3%	2.8%
Alcohol Beverages	1.8%	4.6%	6.3%
Input Prices (to distilled spirits suppliers)			
Paper & Paperboard	2.6%	7.9%	8.8%
Liquor Bottles	--	8.3% ^c	12.2%
Fuel	2.0%	16.5%	21.2%
Barrels	5.5%	6.0%	9.5%
Grains	-0.4%	13.0%	3.9%

^aPrices are unadjusted for proof or age changes.

^bPrices are unadjusted for age changes.

^cBased on annual compound growth rate 1971-1976.

Sources: Computed from Consumer Price Index, the Producer Price Index, and the DISCUS Supplier Price Index (for distilled spirits at the producer level).

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We place greater emphasis on the behavior of prices at the producer level for two reasons. First, the costs (and savings) of conversion to metric sizes were incurred primarily at the supplier level, and could have resulted in price changes at the retail level. Of course, price changes at the producer level probably would have been passed on to successive levels, with prevailing percentage markups on top of them. However, suppliers have no control over wholesale or retail prices, which often reflect local conditions and tend to exhibit much greater variance. Second, because of "price affirmation", prevailing prices of spirits at the supplier level can readily be tracked by brand and container size.

Supplier prices increased at a relatively slow annual rate between 1967 and 1970 (.3%), then accelerated in the latter two periods (1.3% and 2.8% respectively). The 1.3% rate for 1967-1970 was less than the price increases in most major inputs of suppliers which we could track. During the second period (1970-1976), the rate of supplier price increases was greater. Nevertheless, while producers of all alcohol beverages were raising prices at a 4.6% annual pace, distillers were raising them 1.3% a year. At the same time, the pace at which prices of major inputs of distillers were going up increased. Paper and paperboard products, which had increased in price at 2.6% a year between 1967 and 1970, increased to a 7.9% annual rate between 1970 and 1976. Fuel prices accelerated from a 2.0% annual pace to one of 16.5% between the two periods. Grains, which had actually fallen in price between 1967 and 1970, rose at a 13% annual rate in the second period. Suppliers also stated that labor costs were escalating rapidly during this period, although we do not have figures on these.

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As a consequence of these divergent trends, it is clear why distillers felt they were under a cost-price squeeze during this period. Cost components were rising more rapidly than suppliers could (or perceived they could) raise prices. Rather than raise actual prices, they took two intermediate steps. First, they began reducing the age of their Bourbons, blended whiskies, and Canadian whiskies. This step was important, because aging is expense. During the aging process, suppliers must carry the products, tying up the capital used in producing and warehousing them. Second, there are product losses during the aging process through seepage from the wooden barrels in which the product is aged. The shorter the aging period, the less the loss from this source. During the period 1970-1976, producers typically reduced the age in two steps: from 54 months to 48 months; then from 48 months to either 40 months or 36 months.

Also in the 1970-1976 period, producers began reducing the proof of blends and Bourbons, generally from 86^o to 80^o. (The minimum allowable proof under BATF regulations is 80^o). This was an effective step in offsetting cost increases because of the F.E.T. of \$10.50 per proof gallon. This change saved suppliers who took the action \$.63 per gallon in federal taxes alone, or 12.6¢ per "fifth". This savings is approximately 4.8% of the supplier's selling price inclusive of the F.E.T. or 7.4% of the selling price exclusive of the F.E.T.

That suppliers took these steps rather than increase quoted prices is significant. Consumers traditionally relate proof and age to quality--the higher the proof and the longer a product is aged, the "better" it is. Yet suppliers took the chance that consumers

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would accept these changes more readily than higher prices. Once suppliers had taken these two steps to maintain profit margins, however, their only remaining option was to begin raising prices more rapidly than they had in the past. This shows up in the final 1976-1980 segment of the three time periods discussed. During this third period, suppliers raised spirits prices at 2.8% a year; more than double the rate between 1970 and 1976. While the majority of input prices also increased more rapidly during these years, the difference was not nearly as great as before. Thus, producers were beginning to price more aggressively during this period, partly to offset continuing cost increases, but also to recover past cost increases which they had not fully recovered previously.

C. Analysis of Price Changes

This section analyzes price change which occurred during and after the conversion process. The situation in which suppliers found themselves in late 1976 has already been discussed. They had avoided price increases until alternatives were exhausted, and the conversion opportunity came at a time when they were looking for a way to rebuild their profit margins, which had been slipping. The data may not necessarily show this in itself, but certainly appears to confirm repeated statements by industry officials to this effect.

Pricing behavior of suppliers before, during, and after the conversion period was analyzed by studying affirmation prices which were in effect on different dates. Again, these are prices charged by suppliers to wholesalers and are generally inclusive of F.E.T. but exclusive of state taxes. Project resource limitations required that attention be concentrated on a relatively few brands, and on a small number of dates during the period

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1974 through 1980. Price histories for 16 leading brands were examined. After the data were studied, it was found that consistent information was available only for 10 of these. Even though the number of different brands is small, they include the top 5 selling brands in the U.S. and comprise over 20% of the total annual distilled spirits sales in the U.S. Furthermore, they represent a wide spectrum of types of spirits, including blends, bonded Bourbon, rum, gin, vodka, cordials, Canadian Whisky, and Scotch Whisky.

Figure VI-3 summarizes the price changes of the 10 sample brands. When the 1.75 liter was introduced, suppliers tended to reduce the shelf price by about 6%. But since the half-gallon contained 64 ounces and the 1.75 liter only 59.2 ounces, this resulted in an approximate 1.6% price increase on a per-unit-of-volume basis. Likewise, per-unit-of-volume prices were increased when the other metric sizes were introduced. The smallest percentage price increase occurred in the miniature (0.2%); the largest in the 200ml size (12.6%).

To keep these price changes in proper perspective, it is important to keep in mind that in some instances prices had not been increased for a year prior to the introduction of the metric size. Because of the difficulties of changing prices due to affirmation, most suppliers followed a policy of changing prices only once or twice a year. The introduction of the new size, however, gave suppliers some flexibility which normally was absent. On the average, approximately five months had passed between the last price increase for the

Figure VI-3
Price Increases of Spirits Associated with Metric Sizes

Old Size	New Size	At time of Introduction (One-time%) ^a	Time of Introduction to 12/80 (ACGR) ^b	7/74 to 12/80 (ACGR) ^b
1/2 Gallon	1.75 Liter	1.6%	3.9%	5.2%
Quart	1.0 Liter	0.6%	1.4%	4.3%
1/5 Gallon	750ml	0.8%	1.9%	4.4%
Pint	500ml	0.8%	1.9%	5.7%
1/2 Pint	200ml	12.6%	33.0%	6.4%
1/10 Pint	50ml	0.2%	0.5%	5.3%
Weighted average ^c		1.6%	3.9%	4.8%

^aThese price increases occurred on the average five months after the last price increase.

^bAnnual compound growth rate.

^cWeighted based upon approximate gallonage of each size bottled during period.

Source: Affirmation price data from N.Y. State and Massachusetts

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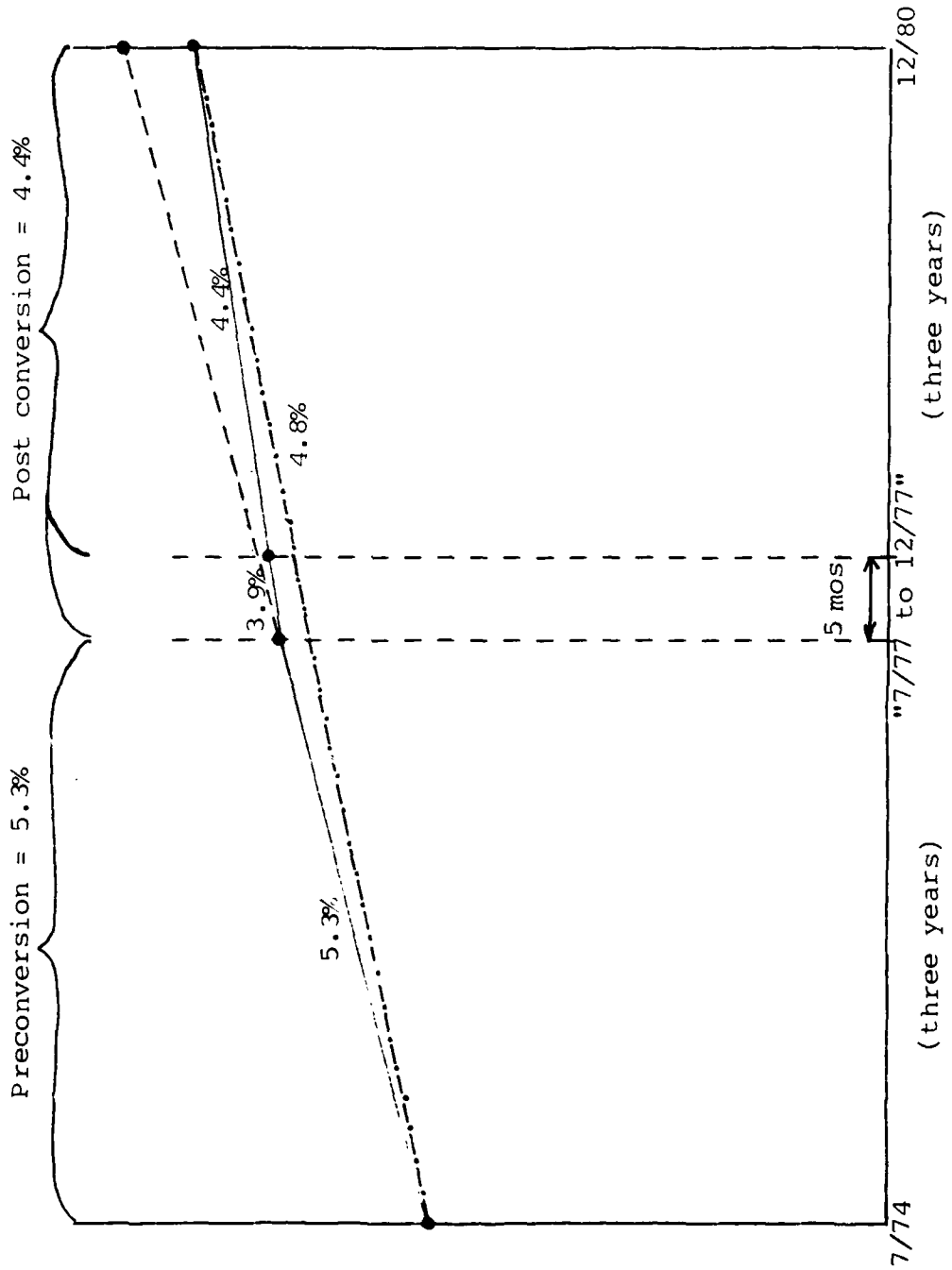
size in question and the price change associated with the introduction of *metric sizes*. Thus, the 1.6% one-time price increase on the 1.75 liter size mentioned above represents an annual growth rate of 3.9%; the 12.6% increase for the 200ml represents a 33% annual increase.

Pricing behavior following the introduction of the metric sizes, and for the entire study period (July 1974-December 1980) was also analyzed. These results are presented in the last two columns of Figure VI-3. On a volume weighted basis, suppliers raised prices on the metric sizes at an average annual rate of 4.4% between the time they introduced the new metric sizes and the end of 1980. In each instance, except for the 200ml, the one-time per-unit-of-volume price increase at the time of introduction was less than 2%, with larger increases taken later on during the optional period. When the one-time price increases are adjusted to a volume weighted annual growth rate, it is seen that a 3.9% annual increase was associated with the introduction. Thus, overall, suppliers took smaller price increases at the time of conversion than following conversion.

Over the entire period July 1974 to December 1980, prices (for both metric and customary sizes) rose at an annual rate of 4.8%. Brand prices were tracked after each was converted to metric. It was found that, once they had been converted and the one-time adjustment made, prices rose at 4.4%. Analysis revealed that prior to introduction of the metric sizes, prices were increasing at approximately 5.3%, which is greater than the 4.4% average registered over the entire period. The overall rates of increase over the three periods are depicted in Figure VI-4.

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Figure VI-4
Supplier Price Changes of Sampled Brands*
(not to scale)



*All percentages are annual compound growth rates, weighted according to gallonage of each size bottled during the period.

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Figure VI-4 illustrates that prices of the sampled brands increased faster before the conversion than afterward--5.3% versus 4.4%. The 5.3% annual rate of increase of the sampled brands is substantially higher than DISCUS' supplier price index (SPI) figures of 1.3% for 1970-1976 and 2.8% for 1976-1980, as well as the CPI figures of 1.6% and 1.7% for retail prices in 1967-1970 and 1970-1976, respectively. Differences in survey samples may explain some of the difference. However, a more likely explanation for the discrepancy is that the CPI is not adjusted for changes in proof or age, and DISCUS' SPI includes only "fifths" (and 750ml sizes) and is not adjusted for age. Our price survey, however, controlled for age and proof changes by longitudinally tracking the higher proof and older brands from July 1974 on for as long as possible. Even when a firm reduced the proof and age of a brand, it generally continued to also sell (although in much smaller quantities) the same brand at the old proof and age. These often became "premium" lines. Our price survey did not switch to the lower proof and age products until the higher proof and age products were no longer offered. Many firms never totally discontinued their higher proof and age products, and those that ultimately did still generally offered them well into 1978-1979. Thus, the CPI and SPI probably substantially understate the true rate of effective price increases. Even the 5.3% figure from our price survey may slightly understate pre-conversion price increases, since the methodology did not control perfectly for age and proof changes.

The study team compared the average per-unit-of-volume price increases associated with the sizes which required an increase in volume (1 liter, 500ml, and 50ml) with those which entailed a reduction in volume (1.75 liter, 750ml, and 200ml). The

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results are summarized in Figure VI-5. On average, metric containers which required more volume than the U.S. sizes they replaced (that is, were up-sized) were associated with a 0.5% per-unit-of-volume price increase at the time they were introduced. Interestingly enough, the rate at which these containers' prices were subsequently raised (point of conversion through December 1980) was only 3.9%--well below the 5.1% they registered over the entire period. This may reflect supplier concern that the higher shelf prices associated with the larger sizes would be meeting consumer resistance. In contrast to the up-sized containers, suppliers increased per-unit-of-volume prices of down-sized containers by an average of 5.1% at the time of introduction.

To test changes in the price relationships among the various sizes during and after the metric discussion and conversion period, ratios across sizes were computed of the price per ounce in July 1974 and December 1980. The results of these calculations appear in Figure VI-6. In each instance, the 1974 ratios apply to sizes in U.S. measures, and the 1980 ratios apply to metric sizes. Since all ratios relate to "per ounce" costs, however, this difference does not affect the result. In the first part of the table, the $\frac{1}{2}$ gallon and 1.75 liter sizes were given a ratio of "1.0" against which all other container sizes were compared. They provided the "best buy" for consumers in each period. In both periods, the cost per ounce increased for each smaller container size. Within this structure, however, some pre-versus-post conversion differences emerge. Compared to the $\frac{1}{2}$ gallon/1.75 liter, the quart/1 liter, "fifth"/750ml, and pint/500ml became better buys, while the two remaining sizes (1/10pt/50ml and $\frac{1}{2}$ pint/200ml) became more expensive

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Figure VI-5

Average Percentage Supplier Price Changes
by Direction of Container Size Change
New vs. Old

(unweighted)

	<u>Up-Sized</u>	<u>Down-Sized</u>
At Time of Introduction	0.5%	5.1%
Time of Introduction to December 1980	3.9%	5.1%
July 1974-December 1980	5.1%	5.3%

Source: Affirmation Price data from New York State and Massachusetts

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relative to the largest size. The second part of the table presents the before and after price ratios with the "fifth"/700ml given a ratio of "1.0".

Particular attention was given to the relative per ounce costs of the ½ gallon/1.75 liter and quart/1 liter sizes, as suppliers had argued that the economics of producing the larger size did not justify a discount. Yet, they felt unable to eliminate the discount because they feared adverse consumer reactions. Figure VI-7 presents the discount offered for the ½ gallon/1.75 liter over the quart/1 liter at different points in time. In July 1974, the ½ gallon was priced at 94.6% as much as two quarts. Between July 1974 and December 1976, the ½ gallon discount increased from 5.4% to 6.9%. Suppliers eliminated most of this discount when they introduced the 1.75 liter size (.8% discount), thus meeting one of their main objectives in the conversion.

D. Analysis of Bottle Costs and Their Impacts on Prices

During the discussions regarding the selection of the metric sizes, a great deal of attention focused on the manufacture of the glass container. Both the distilled spirits industry and the glass container manufacturers argued that the larger sizes of containers were not economical to produce, particularly sizes larger than 1.75 liters. They argued that prices of large containers increased more rapidly than the volume of spirits which they would hold. Because of this, empty liquor bottle prices were examined for 1977 and year-end 1980. The results appear in Figure VI-8.

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Figure VI-6

Relative Price per Ounce, by Container Size
July 1974 and December 1980
($\frac{1}{2}$ gal/1.75 liter = 1.000; "fifth"/750ml = 1.000)

Size	$\frac{1}{2}$ gal/1.75 l = 1.000		fifth/750ml = 1.000	
	July 1974	Dec. 1980	July 1974	Dec. 1980
1/2 gal/1.75 liter	1.000	1.000	.933	.976
Quart/1.0 liter	1.059	1.001	.988	.977
"Fifth"/750ml	1.072	1.025	1.000	1.000
Pint/500ml	1.100	1.057	1.026	1.031
1/2 pint/200ml	1.111	1.163	1.036	1.135
1/10 oz/50ml	1.267	1.270	1.118	1.239

Source: Affirmation price data from New York State and Massachusetts

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Figure VI-7

Discount or Difference in Price per Ounce
1/2 Gallon vs. Quart,
and 1.75 Liter vs. 1 Liter

<u>Date</u>	<u>Discount</u>
July 1974	5.4%
December 1976	6.9%
At time of 1.75 liter introduction	0.8%
December 1980	0.3%

Source: Affirmation price data from New York State and Massachusetts

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Figure VI-8

Liquor Container Costs 1977 and 1980

Container Size	12/1977		12/1980		1977-1980 % Price Increase ^a
	Cost per Container	Cost per Fl Ounce	Cost per Container	Cost per Fl Ounce	
1/2 Gallon	41.93¢	.655¢	-	-	--
1.75 liter	37.03¢	.626¢	51.81¢	.876¢	39.9%
1 liter	18.39¢	.544¢	24.22¢	.716¢	31.6%
Quart	18.30¢	.572¢	-	-	-
1/5 Gallon	17.06¢	.666¢	-	-	-
750ml	17.06¢	.673¢	23.06¢	.909¢	35.1%
500ml	15.82¢	.936¢	21.35¢	1.263¢	34.9%
Pint	15.76¢	.985¢	-	-	-
1/2 Pint	10.54¢	1.318¢	-	-	-
200ml	10.38¢	1.535¢	13.81¢	2.042¢	33.0%
1/10 Pint	6.88¢	4.300¢	-	-	-
50ml	6.88¢	4.069¢	8.98¢	5.310¢	30.5%

Source: Derived from data supplied by a major container manufacturer.

^aVolume-adjusted

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In 1977, glass bottle manufacturers were offering containers in both U.S. and metric sizes. Figure VI-8 contains list prices for the minimum order size, including a premium for an upgraded carton beyond a standard corrugated carton. The reader is alerted that the pricing structure of glass containers is very complex, and the table represents a simplification of actual options open to distillers. Nevertheless, the data offer some insight into the role played by containers in the pricing structure of the industry.

Figure VI-8 shows that the largest containers cost more per ounce than the next smaller size. In 1977, the lowest price container on a volume basis was the 1 liter container, at .544 per ounce. The 1.75 liter containers costs 15% more per ounce and the ½ gallon container 20% more per ounce than the 1 liter container.

Costs per ounce rose rapidly for the smaller sized containers. The pine container, for example, cost .985¢ per ounce, 81% greater than the 1 liter container. In December 1977, the miniature in U.S. measure (few suppliers had introduced a metric miniature at that point) cost 7.9 times as much on a per-unit-of-volume basis as the 1 liter container. We see from this analysis that both larger and smaller containers were more expensive relative to their capacities than the medium-sized containers. In fact the small containers are substantially more expensive on this basis than the larger containers.

Also contained in Figure VI-8 are December 1980 (for 19810 prices for the metric container sizes. While fewer prices can be observed, once again the 1 liter container is the least expensive on a per ounce basis. The liter container cost .716¢ per ounce in

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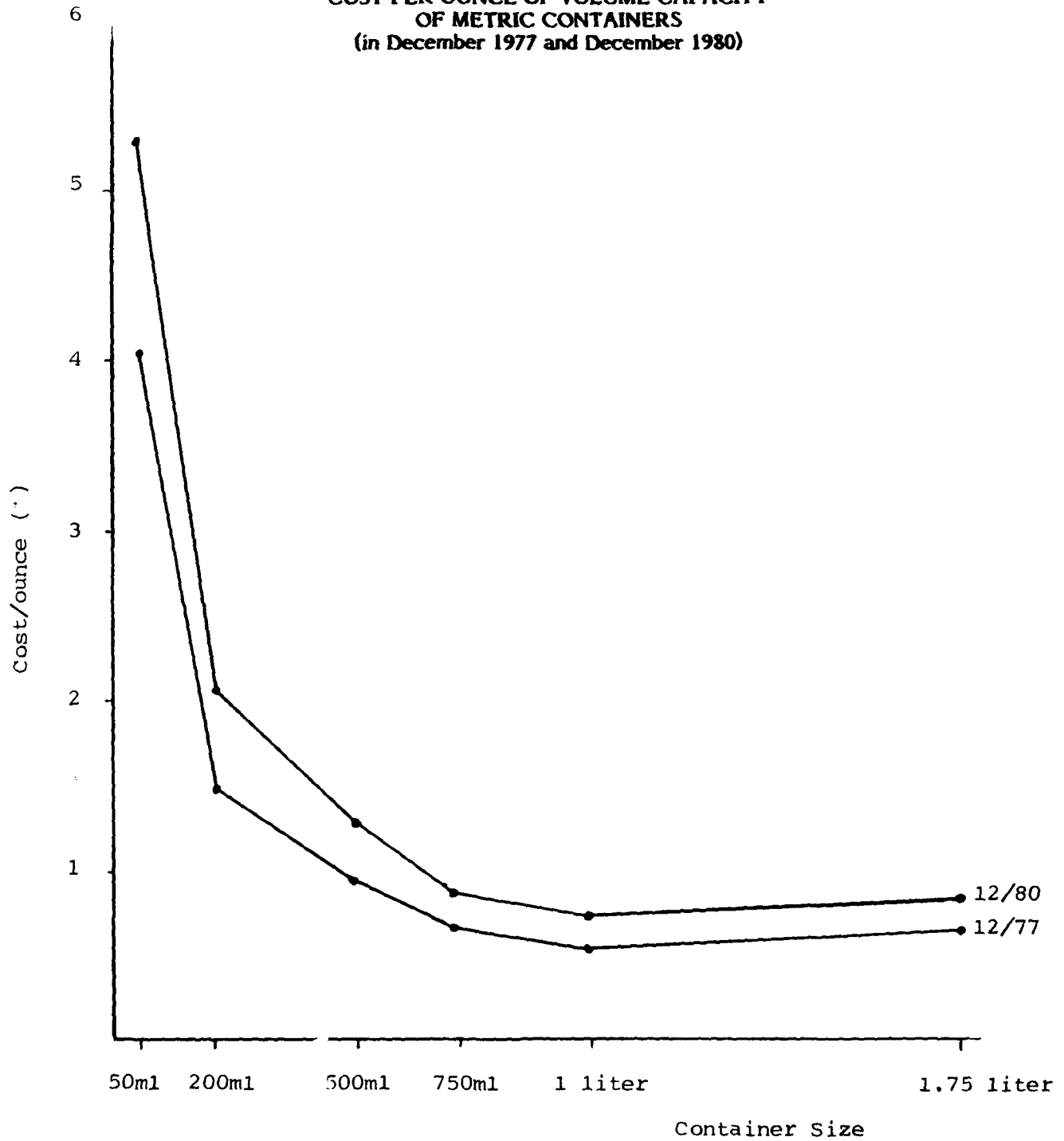
December 1980, 31.6% more than three years previously. A brief examination of the December 1980 container prices reveals that the internal pricing structure of containers did not change during these three years, though the 1.75 liter container increased in price the most, consistent with the tendency of distillers to raise selling prices of this size relative to the liter size. As mentioned earlier, however, double-gobbing was not the driving factor behind the price differences of the largest sizes.

Containers comprise an important segment of distillers' selling price (net of federal excise taxes). Figure VI-10 shows the container cost as a percentage of final selling price for each of the metric sizes in December 1976 and December 1980. Note that the 1.75 liter container comprises a larger percentage of selling price than does either the liter or 750ml. This was true both in 1976 and 1980. The container made up only 4.4% of the liter selling price in December 1976, and held nearly steady in 1980 at 4.5%. At smaller sizes, container cost becomes a more important factor. It rises to 11.0% in 1980 for the 200ml size and to 26.1% for the 50ml size. Given the known production problems associated with the 50ml size, we hypothesize that the airlines' buying power did prevent suppliers from pricing the miniature sufficiently high to permit them to make a return equivalent to other sizes. They evidently have resigned themselves to using the miniature as a promotional item to the high-income airline traveller. In fact, several suppliers stated they regard this size as a promotional size and treat the associated losses as a promotional expense.

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Figure VI-9

COST PER OUNCE OF VOLUME CAPACITY
OF METRIC CONTAINERS
(in December 1977 and December 1980)



Source: Derived from information supplied by a major container manufacturer.

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Figure VI-10
Container Cost
as a Percentage of Supplier Selling Price
of the Finished Product

<u>Container Size</u>	<u>December 1976</u>	<u>December 1980</u>
1.75 liter	5.2%	5.5%
1.0 liter	4.4%	4.5%
750ml	5.0%	5.5%
500ml	7.4%	7.5%
200ml	9.5%	11.0%
50ml	27.2%	26.1%

Percentages are net of federal excise tax.

Source: Derived from data supplied by a major container manufacturer.

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Figure VI-11

Volume-Adjusted Price Differentials
between
U.S. Measure and Metric Containers
in 1977

<u>Container Size</u>	<u>% Price Change in Metric Container vs. U.S. Measure Container (volume adjusted)</u>
1/2 Gallon - 1.75 liter	- 4.4%
Quart - 1 liter	- 4.9%
"fifth" - 750ml	+ 1.1%
Pint - 500ml	- 5.0%
1/2 Pint - 200ml	+16.5%
1/10 Pint - 50ml	- 5.4%

Source: Computed from information supplied by a major container manufacturer.

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A comparison of relative container prices between the U.S. customary measures and metric measures when both were offered for sale is presented in Figure VI-11. The 1.75 liter container was offered at a 4.4% discount to distillers even after adjusting for the slightly smaller capacity of the container. The liter (a slightly larger replacement) was also offered at a lower price (adjusted for capacity) than the quart. It appears from this and the data in Figure VI-8 that the most economical (least-cost) container size lies somewhere between the liter and 1.75 liter sizes.

For both the 750ml and 500ml containers, glass manufacturers evidently considered the size differences as being insignificant since they offered them at almost the same unadjusted prices as their customary measure counterparts. The largest change came in the ½ pint/200ml container change. The 200ml container cost 16.5% more than its ½ pint counterpart after adjusting for the differences in capacities. The adoption of this particular size obviously was associated with a major cost increase for distillers. We refer the reader back to the price change of the 200ml size as offered by distillers. The 12.6% price increase registered by distillers for this container is at least partly a reflection of the higher container costs of this size.

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CHAPTER VII

ANALYSIS OF THE IMPACTS UPON CONSUMPTION, PROFITABILITY, INDUSTRY STRUCTURE, AND SIZE, PRODUCT, AND BRAND PREFERENCES

A. Introduction

This chapter presents study results on impacts upon overall consumption, profitability, industry structure, and size, product, and brand preferences.

B. Impacts on Aggregate Consumption of Distilled Spirits

Aggregate consumption of distilled spirits does not appear to have been impacted by the conversion. As shown earlier in Figure I-2 and I-3, distilled spirits consumption per capita of the adult population has fluctuated around 3 gallons each year between 1972 and 1979. The long-term trend of decreasing consumption per dollar of income has also continued as before. Annual increases in case sales and apparent consumption did not evidence any sharp perturbations over the 1977-1979 time frame¹. Furthermore, no suppliers or anyone at DISCUS or BATF with whom we discussed the impacts of the conversion believed it impacted aggregate consumption.

C. Impacts on Product/Brand Preferences and Supplier Profitability

Since World War II, overall profit margins on sales for the distilled spirits industry have trailed those for leading U.S. manufacturers². In 1978 and 1979, for the first time since World War II, margins increased to the point where they became higher than the average for U.S. leading manufacturers. Whether these margins will continue is unknown.

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The increased margins are probably explained by numerous factors: more aggressive pricing strategies; increased shares of premium and superpremium products (which generally sell at higher margins); market success of high-profit specialty items; and a moderation of increases in input factor costs. Within the resources of this study, we cannot estimate the contribution of each of these factors.

Most supplier executives expressed a strong overall satisfaction with the conversion. Most stated that, to some extent at least, the conversion has helped increase their profitability.

While the overall impact of the conversion on the industry was positive, several types of suppliers may have been impacted negatively. The three main types of suppliers which may have been impacted negatively are:

1. Suppliers heavily involved in quart production, particularly those who, for whatever reasons, converted early or who could not stockpile before the mandatory period. These suppliers suffered because their liter sizes competed with quarts during and/or after the optional period.

One small supplier, whose primary size before conversion was the quart, blamed the conversion for a large loss of its customer base. When it converted the quart to the liter, its sales in this size range dipped substantially, in terms of both bottles and gallonage. Also, its customers did not shift to its 750ml size or to its other sizes. To this day sales

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have not recovered. The explanation for this may be that the firm converted to liters too early, or could not or did not stockpile quarts before the mandatory period. In either case, its new liter sizes would have had to compete head on with quarts for many months. Consumers may be more sensitive to total shelf price than to volume-adjusted price. This could explain this supplier's loss of sales to competing brands still offered in quarts. This particular supplier evidently lost some brand loyalty too, since sales still have not fully recovered. We do not know the extent to which an early quart conversion or lack of stockpiling occurred or, if either did, the extent to which it was due to the firm's unsuccessful marketing strategy or to its lack of ability to adequately control the bottle sizes its bottle supplier made available.

2. Suppliers of Scotch, brandies, and liqueurs which had generally sold in 4/5 pints, 3/4 pints, or 3/4 quarts. When these brands were produced in 500ml or 750ml, sizes their shelf prices generally became higher than more standard products, e.g. Bourbon, gin, etc. This especially depressed sales of some brands of Scotch, for which domestic and Canadian whisky is a close substitute.

3. Suppliers of liqueurs, cordials and other specialty items which had commonly been sold in 1.0 oz miniatures. The main market for miniatures was dominated by the airlines, which refused to accept price increases to levels above those for miniatures of more standard products (whiskies, vodkas, etc.) when these were converted to 50ml (1.7 oz).

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D. Impacts on Size Preferences

Market shares of the different size categories are plotted in Figure VII-1 and Figure VII-2 for 1970 through the third quarter of 1980. Figure VII-1 presents market shares by volume and Figure VII-2 by the number of bottles used. The miniature size gallonage share is not shown since it accounts for less than .1% of the total.

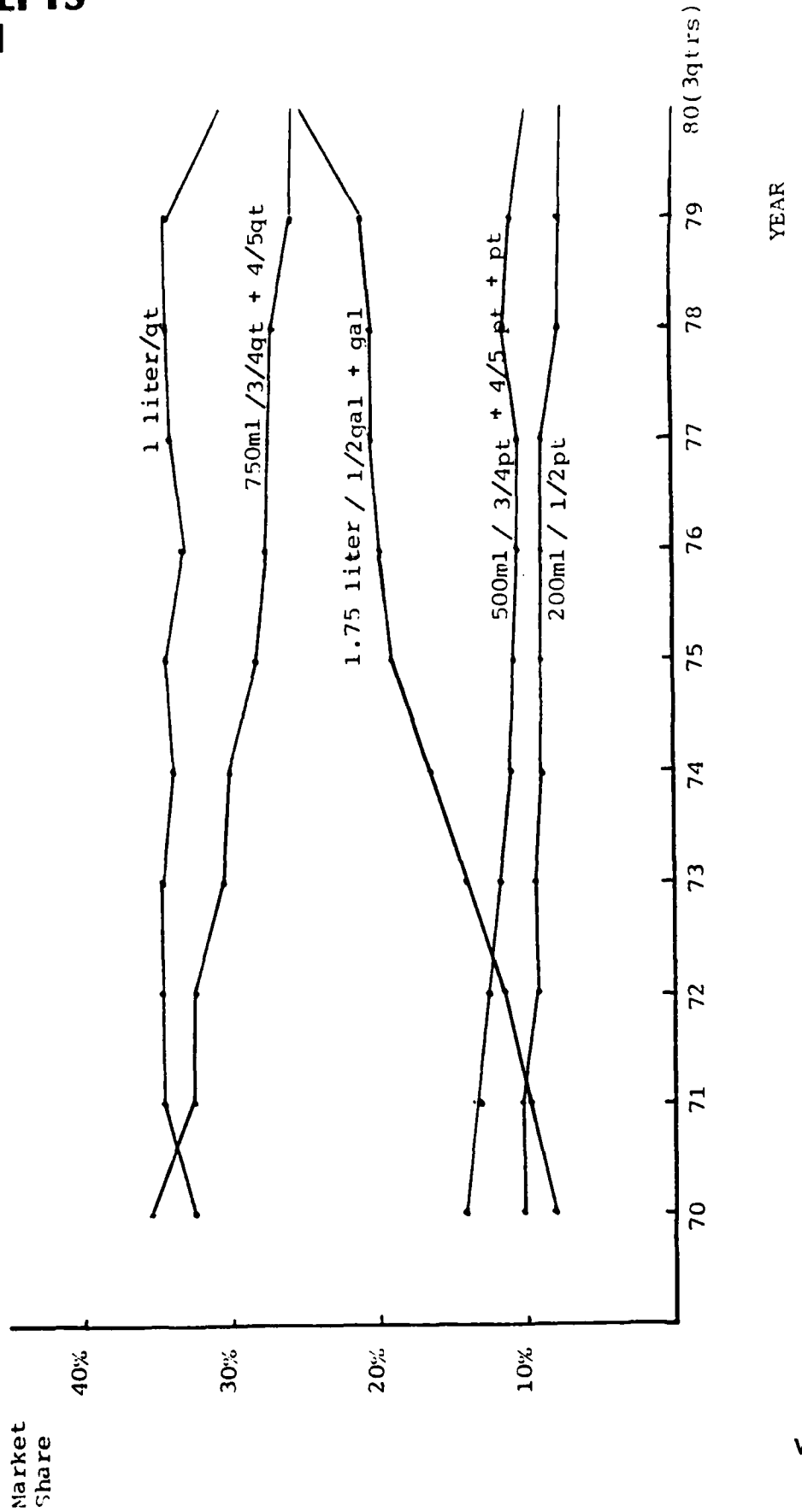
In interpreting the graphs for the phase-in period (1977-1980), the reader is cautioned that they reflect different rates of metric phase-in (and thus all metric sizes were not competing against each other) and deliberate stockpiling of quarts and pints. These may account for the substantial changes in market shares of some of the sizes. One or two years of post-conversion data will be needed before it will be possible to estimate long term changes in sales of the various sizes.

Two trends indicated by the graphs, however, have been corroborated by supplier executives as continuing, at least through the spring of 1981. First, market share of the 1.75 liter size is increasing faster than at pre-conversion rates. Second, the conversion has reversed the pre-conversion trend of increasing quart sales and decreasing liter sales. Now, 750ml sales are increasing and liter sales are decreasing.

The reader is cautioned that metrication per se is not necessarily the causal factor for changes in these trends. Changes in product pricing and marketing strategies, which occurred simultaneous with the metrication, may be more important causal factors.

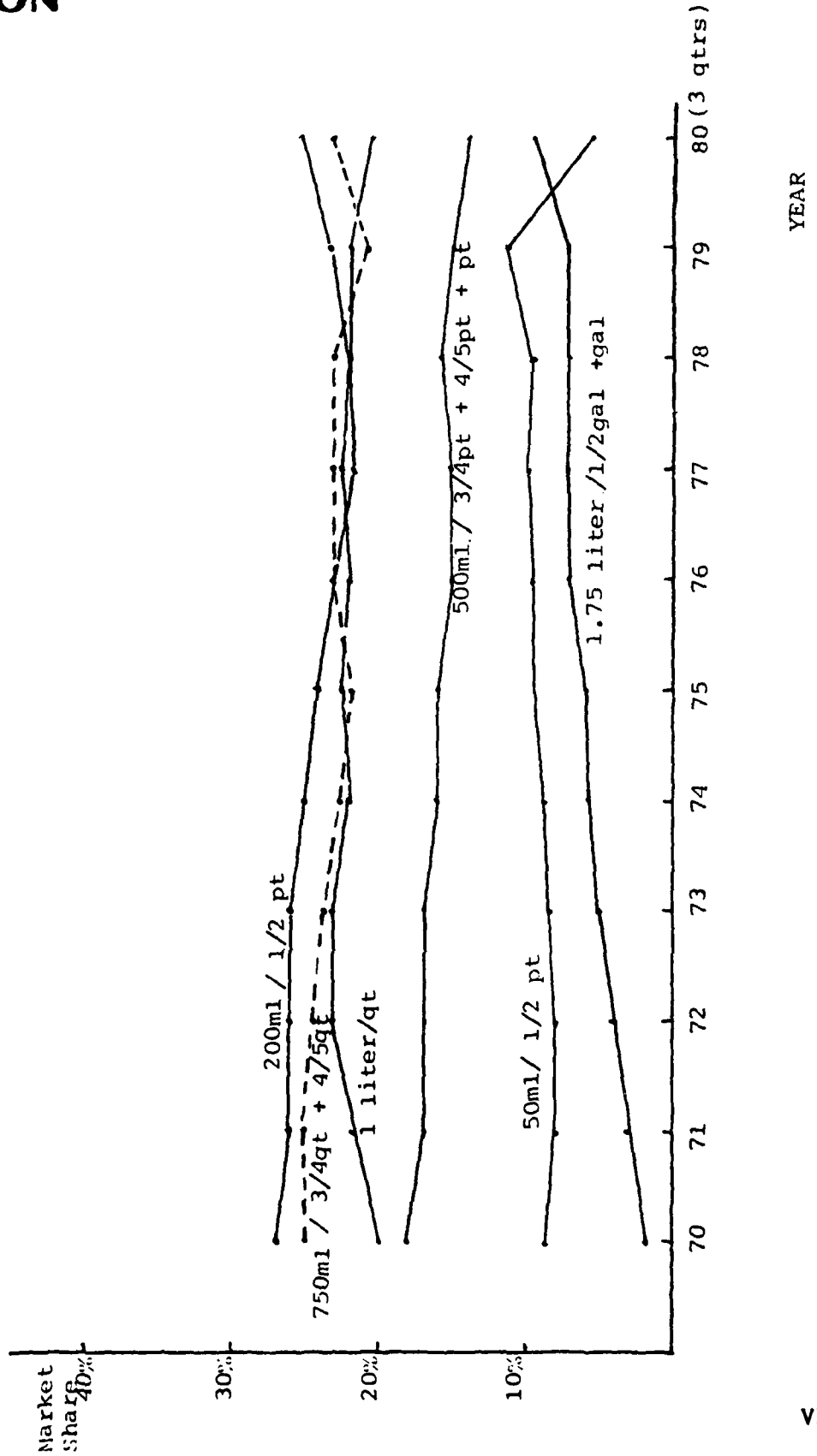
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Figure VII-1
Market Share by Container Size In Gallons



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Figure VII-2
Market Share by Container Size In Bottles



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E. Impacts on Industry Structure

The latest available data on the number of permits for distilling, warehousing, and bottling, rectifying, importing, and wholesaling is for 1977³. These data do not show any major changes in numbers or trends between 1975-1977. Later data reveal that retail sales have continued to exhibit a steady, upward trend, and do not appear to have been affected. No indication was obtained during discussions with industry officials that there was any impact from the conversion on the structure or operations (buyer-supplier relationships, etc.) of the retail or wholesale sectors.

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Chapter VII - Footnotes

1. 1980 Liquor Handbook, p. 106.
2. Ibid., p. 122.
3. Ibid., p. 116.

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CHAPTER VIII SUMMARY OF FINDINGS AND CONCLUSIONS

A. Introduction

This chapter summarizes the main findings and conclusions of the study of the metric conversion of distilled spirits containers. It is organized into sections on motivation, planning, implementation, and impacts.

B. Motivation

1. Large, internationally active firms were the driving force behind the conversion because they would benefit the most from the cost savings and pricing adjustments which the conversion would allow.

2. DISCUS, the industry trade association, played a key role in promoting the conversion and in obtaining support from related industries and other groups which the conversion would impact. There are three main reasons why it was successful in persuading the industry. First, its membership includes most of the industry. It is the only national industry trade association, and its members account for more than 90% of all spirits sold in the U.S. Second, it is credible with its members. It is perceived to be highly competent in protecting the interests of its members with the U.S. government. Third, it had adequate staff and resources to do the job.

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3. The industry publicly presented numerous reasons why it desired to convert but, while important, these did not include two of its main reasons. The publicly stated reasons were: cost savings from increased standardization; the elimination of the competitive advantage and potential consumer deception posed by under-sized imported products; and the promotion of international trade. Two other primary objectives of the industry--which were never stated publicly--were to restructure prices and eliminate unprofitable sizes.

4. BATF supported the concept of metrication of distilled spirits containers due to a combination of factors. They were already convinced of the appropriateness of metric standards for wine. BATF asserted that a dual conversion offered possibilities for inter-industry standardization of bottles, with potentially large cost savings. A conversion also offered a large number of other cost savings to industry which would ultimately be passed on to consumers. Most importantly, however, a conversion to metric sizes offered BATF a way to require that imported liqueurs and specialty items comply with U.S. standards of fill (which the U.S. industry also wanted) without requiring them to convert to U.S. measure.

5. Metrication was a necessary as opposed to merely a convenient mechanism to increase standardization. Since BATF would not require imports to convert to U.S. measure, size standardization could only be achieved by adopting metric sizes.

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6. In spite of the strong public position of the industry trade association and many of its members regarding the need to convert, some firms in the industry were neutral on this issue. However, few, maybe none, opposed the conversion.

7. An industry consensus regarding the attractiveness of a metric conversion did eventually evolve, through the DISCUS context. It was not a case of a few large firms forcing metrication upon the rest of the industry.

C. Planning

1. DISCUS coordinated the industry's discussions regarding the desirable metric size standards. These discussions included all affected U.S. industry segments, as well as many foreign interests. Consumers and consumer interest groups did not participate in this process.

2. In the negotiations and discussions on sizes and other aspects of the conversion, each group made decisions based on its perceived economic self-interests. The arguments used to support their positions, however, often referred to broader industry-wide or consumer benefits which would result. An example of this are the reasons DISCUS gave BATF for its proposed miniature restrictions: (1) that miniatures are attractive to minors and to those who are tempted to drink surreptitiously while driving and, (2) careless disposal of miniatures creates a waste problem. The major concern was the poor profitability of the miniature size.

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3. The international interface appears to have been poorly coordinated. Key information regarding foreign activities came very late in the decision-making process. The selection of the 200ml size over the 250ml size was based partly on information that the EEC was going to establish the 200ml as a standard. The industry did not have a chance to analyze and comment upon this. Information on the EEC sizes should have been obtained much earlier and incorporated into the hearing and discussions. Any U.S. concessions on sizes could have been linked to European concessions on product standards or labelling requirements, or perhaps reductions in their high import duties on U.S. distilled spirits products.

4. BATF operated according to its prescribed policies and procedures to meet its prescribed mission and objectives. It took no extraordinary steps to coordinate planning, to ensure consumer input, or to coordinate the implementation of conversion. It was more concerned with the impacts of metrication on its own mission than with stimulating a good planning process or monitoring and guiding the conversion to a successful conclusion. However, there is no reason to believe that any other agency of the Federal Government would have performed any better than, or even as well as, BATF in the planning and implementation of this conversion.

5. A long phase-in period (3½ years) was established to allow an optimal, planned, least-cost conversion. As bottle molds were amortized and inventories of bottles, caps, and bottle dressings depleted, the new sizes could be gradually phased in. However, it did not turn out this way. Suppliers converted the down-sized containers as rapidly as

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possible, and the up-sizes as late as possible. This conversion pattern emerged because firms perceived costs as being less important to their profitability than pricing considerations. Thus, overall, the planning process did not adequately address industry pricing and marketing practices or market and production considerations.

6. Thorough analyses of empty container prices and how changes in technology might affect them were not conducted by BATF. This should have been done as part of the planning process. This would have generated information which would have allowed BATF to weigh more accurately the trade-offs of alternative sizing strategies.

7. Suppliers were required by BATF regulations to phase in brands on a market-by-market and size-by-size basis. This eliminated many of the competitive disadvantages of the conversion to small suppliers. It also benefitted wholesalers and retailers, since it lessened the chance that they would receive shipments of a brand in both customary and metric sizes. These BATF regulations on irrevocability were helpful, perhaps essential, in ensuring a smooth conversion.

8. BATF had no metrication "model" to follow and its staff had no technical training in metric matters. It did not know what procedure to follow or factors to consider in selecting a sizing scheme. It thus attached great importance to the comments it received from representatives of metric groups. These generally supported a 1-2-5 sizing scheme, claiming it to be the "optimal" approach and a "true" metric sizing scheme.

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BATF's selection of the 200ml instead of the 250ml size was due partly to these comments. This selection was probably not optimal for either the industry or consumers.

9. Consumer input into BATF's decision-making on this conversion was unplanned and ineffective. BATF employed trade statistics to obtain an understanding of basic consumer size preferences. No effort was made to obtain a consensus of consumer opinion on a sizing scheme. BATF relied upon the metric groups which commented, individual consumers who commented by letter, and industry testimony. Although no consumers supported the 1.75 liter size, it was accepted by BATF.

10. In industry discussions, the 750ml size was selected as the standard size and starting point for determining both larger and smaller sizes, with a variety of size combinations considered. DISCUS modified its proposals to BATF several times, each time gaining wider concurrence by various industry segments. The final proposal from DISCUS included both a miniature and a half-gallon equivalent.

11. The BATF's proposed sizing scheme of 50ml, 250ml, 500ml, and 750ml, 1 liter, and 1.75 liter was based upon a 1 liter standard size. BATF eventually decided on a 1-2-5 sizing scheme, but kept the 750ml and the 1.75 liter as exceptions to this framework.

D. Implementation

1. Suppliers phased in their most economically attractive new sizes first. Since the down-sizes were best in this regard, these were phased in first. These down-sizes

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were the most economically attractive because they enabled suppliers to make per-unit-of-volume price increases without raising shelf prices. Up-sizes were phased in much later, near or at the end of the optional period. Thus, there were essentially two conversions--one of the down-sizes beginning immediately after the start of the optional period and one for the up-sizes at the very end of the optional period.

2. Foreign producers did not deluge the U.S. market with imports during the conversion period. Indeed, due to shipping time and customs bond, as well as the fact that many imports were up-sized, metric-sized imports generally appeared on the shelves later than metric-sized U.S. bottled products.

3. Many suppliers chose to install new, high efficiency bottling line equipment rather than modify old bottling lines.

4. The distilled spirits industry is not "working metric". Only the containers are in metric measure. Reports, statistics, the federal excise tax, most state taxes, and customs duties remain in customary units. There is no push by the industry to convert state and federal taxes due to the fear of tax increases.

5. There does appear to have been adequate "follow through" in this conversion. This was provided by DISCUS. It monitored the progress of the conversion, identifying solutions for industry-wide problems and often assisting BATF in implementing the solutions.

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6. Suppliers developed metric information for consumers around promotions for individual brands, but did not extensively publicize metric sizes per se. BATF provided minimal publicity, writing only a few press releases, and depending heavily on distribution of posters for industry and consumer education.

7. A number of problems arose during the voluntary conversion period--some anticipated and others unanticipated. Most stemmed from the extent of regulation under which the industry operates and the number of different regulatory jurisdictions which had to change laws and regulations to accomodate metric sizes. These usually were solved by joint government-industry cooperation.

E. Impacts of the Conversion

1. The net one-time cost of conversion--approximately \$21 million--was extremely small in proportion to the size of the industry--approximately \$3 billion in expected annual sales in the early 1980's. Label re-designs and premature bottle mold obsolescence accounted for over 3/5 of all one-time costs.

2. A great many suppliers took advantage of the changes being made for the metrication to standardize aspects of their packaging, which resulted in substantial recurring savings. Bottles, labels, and caps were often standardized and bottles re-configured to contain less glass. Adequate planning time before the optional period helped make this possible. Due to marketing considerations, however, the industry took less advantage of these opportunities than they otherwise might have. Recurring annual

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savings to the U.S. distilled spirits industry as a whole is estimated at approximately \$8.5 million.

3. The net down-sizing of containers has led to a recurring cost, since more bottles are now required to move the same amount of distilled spirits volume. Estimates of the recurring dollar costs from down-sizing are tenuous, since these impacts are tied in with pricing and marketing changes which occurred at the same time as metrication. However, the recurring cost from down-sizing offsets at least part, perhaps all, of the previously mentioned recurring savings.

4. Suppliers' perceptions of the metric conversion of distilled spirits, both as a concept and as to how it was actually carried out, are generally favorable, and in many cases highly favorable. Only among some small firms does there appear to be a lack of positive perception of the metrication.

5. The conversion does not appear to have impacted industry structure or competition. It is likely that it has helped improve supplier profitability, largely due to the price restructuring which it permitted.

6. Financial impacts upon wholesalers and retailers appears to have been miniscule.

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7. Suppliers used the introduction of the metric sizes to raise per-unit-of-volume prices. For down-sized containers the increases at the time of introduction averaged 5.1%; for up-sized containers the increase averaged 0.5%. The 200ml size exhibited the greatest price increase, at 12.6%. On a volume weighted basis for all sizes, a 1.6% overall per-unit-of-volume price increase was taken at the time of introduction of the new metric sizes.

8. During and after the phase-in period, suppliers raised overall (volume weighted) prices of all sizes at approximately 4.4% per year. This is less than price increases before the conversion (5.3%) on a constant age and proof basis. It is not clear whether the metrication has influenced the overall level of prices of distilled spirits, or simply affected the timing of price adjustments.

9. During and after the phase-in period, suppliers brought the per-unit-of-volume price of the 1.75 liter size in line with that of the 1 liter. Thus, they met one of their main objectives of the conversion--the elimination of the large discount on the "economy" size.

10. Shelf prices of distilled spirits products before the conversion had risen at very modest annual rates--only 1.7% between 1970-1976 for retail prices as measured by the CPI. However, the relative stability of distilled spirits shelf prices masks a much higher rate of real price increase, considering the reductions in age and proof which suppliers

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made during this period. Holding age and proof constant on our sample of brands showed a 5.3% annual rate of price increase over the three year pre-conversion period.

11. Distillers have exhibited a historical tendency to avoid raising shelf prices. Before the conversion they began reducing age and proof to avoid price increases. In this context, the introduction of metric sizes was just another avenue to increase effective prices without causing shelf prices to rise substantially more rapidly than the rate to which consumers had become accustomed.

12. The industry was correct in its assertions that larger containers (e.g. 1.75 liter and above) become more costly on a capacity-adjusted basis. Larger price increases to consumers might have resulted had a 2 liter size been adopted. The "double-gobbing" issue regarding the 1.75 liter size appears to have been irrelevant, however.

13. As part of the overall metric conversion of all wine and spirits products, the conversion of distilled spirits containers has benefitted the consumer by reducing the potential for size deception from imported products. The consumer must pay a higher price for the distilled spirits product, but it is not clear that this would not have been the case had there been no conversion.

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APPENDIX

**Detailed Chronology of Events
in the Metric Conversion
of Distilled Spirits Containers**

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DETAILED CHRONOLOGY OF EVENTS IN THE METRIC CONVERSION OF DISTILLED SPIRITS CONTAINERS

Note: All events refer to the distilled spirits conversion unless specifically stated otherwise (i.e. wine or soft drinks)

- 10-71 The Wine Institute petitions the Bureau of Alcohol, Tobacco, and Firearms to restrict imported wine to the same sizes as domestic wines. The request is made because many imported wines are being sold in bottles containing slightly less product than comparative U.S. sizes, but appear to contain the same amount. The industry believes the practice is deceptive to consumers and gives foreign producers an unfair competitive advantage. A hearing was later held where opponents of the petition argued that since a National Bureau of Standards study had recommended that the United States convert to the metric system over a 10-year period, it would be inappropriate to require imported wines to be in customary-sized bottles. Subsequently, BATF denied the petition.
- 04-16-72 National Alcoholic Beverage Control Association's (NABCA) Executive Committee adopts a resolution urging the alcoholic beverage industry to: "... study the problems expected to arise with conversion to the metric system and to publicly report as soon as practicable on the preliminary steps which might profitably be taken to avoid confusing the public and incurring undue expenses during the change-over period".
- 07-13-72 The Distilled Spirits Institute (DSI), one of the precursors to DISCUS, distributes to its Board of Directors and working committees correspondence between it and the Association of Canadian Distillers, the Canadian Department of Industry, Trade, and Commerce, and the Canadian Preparatory Commission for Metric Conversion (which later became the Canadian Metric Commission). These groups are studying the possible metric conversion of Canadian distilled spirits bottles, had heard of DSI's interest in conversion, and express a desire to coordinate efforts with the U.S.
- 10-02-72 DSI prepares a short study of current and potential U.S. and foreign bottle sizes and distributes this to all members of its Laws and Regulations Committee with the question: "Is a petition in order for a new standard U.S. bottle size of 70 cl. or 3/4 qt. (24 oz vs. 23.67 oz)?"

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- 10-03-72 DSI Board Meeting. Problems of metrication are discussed at length. DSI legal staff are instructed to "assemble, evaluate, and report on available materials relating to the status of this problem in the U.S., Great Britain, and Canada.
- 10-17-72 A large distilled spirits firm recommends to DSI that it select the same sizes as the Canadian distillers, whatever their sizes turn out to be.
- 12-12-72 At a DSI Laws and Regulations Committee meeting, there is a brief discussion of metrication, bottling practices of the various companies, and some of the problems resulting from differences in foreign and domestic sizes. A list is handed out which presents the Wine Institute's recommended metric sizes for wine, (250ml, 500ml, 750ml, 1 liter, 2 liters, 3 liters, and 4 liters) and their suggested sizes for distilled spirits (i.e. 50ml, 250ml, 500ml, 750ml, 1 liter, 2 liters, and 4 liters).
- 01-04-73 S.100 ("Metric Conversion Act of 1973") is introduced in the House of Representatives.
- 02-27-73 H.R. 5749 ("Metric Conversion Act of 1973") is introduced in the House of Representatives.
- 03-73 The Distilled Spirits Council of the United States is formed from a merger between DSI, the Bourbon Institute, and Licensed Beverage Industries, Inc.
- 04-03-73 Meeting of DISCUS, the Bureau of Alcohol, Tobacco, and Firearms (BATF), Seagrams, National Association of Alcoholic Beverage Importers (NAABI), State Department, and the Wine Institute to review authorized and proposed sizes of distilled spirits in the U.S., Canada, Germany, U.K., Italy, Japan, and the EEC.
- 07-11-73 DISCUS' Laws and Regulations Committee resolves that all members will go back and discuss with their marketing people their recommendations for metric sizes, particularly their choice of the 750ml or 700ml, and report to DISCUS on the results by August 1, 1973, in time for the Export Committee meeting. A board recommendation is to be made based upon the results of these reviews and meetings. A short study is presented which analyzes the impacts of S.100 upon the distilled spirits industry. Also, a DISCUS member objects to a 1.5 liter size, and suggests a 1.75 liter size, or if there is objection to that, a 1.25 liter size (no reason given).
- 07-31-73 A large U.S. distiller recommends (to DISCUS) the 750ml as a substitute for the "fifth", as opposed to the 700ml.

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- 08-02-73 Another large U.S. distiller recommends (to DISCUS) the 1.75 liter bottle.
- 08-21-73 A major U.S. spirits firm recommends (to DISCUS) the following sizes: 187ml, 375ml, 750ml, and 1 liter.
- 09-04-73 DISCUS prepares and distributes to its Board members two options for discussion at the next Board meeting. Option I: 187ml, 375ml, 750ml, and 1 liter. Option II: 250ml, 500ml, 750ml, 1 liter. DISCUS states that action is needed as soon as possible in order to submit U.S. recommendations to the EEC. The EEC is rapidly pursuing uniform sizes and it appears that it will select the 700ml as the standard for distilled spirits, with exceptions for the U.K. and Ireland.
- 09-11-73 After much discussion, DISCUS' Board of Directors recommends the following sizes: 250ml, 375ml, 500ml, 750ml, and 1 liter. This is to be a "starting position only".
- 10-03-73 The Wine Institute petitions BATF to restrict wines to 6 metric sizes (instead of the 16 customary sizes), allow a two year phase-in, require imported wine to comply with these sizes, and to establish uniform standards for the number of bottles per case. The Wine Institute stated that they selected 750ml (25.4 oz) as the primary size because it was very close to the "fifth" or 4/5 qt. (25.6 oz), which comprised about 48 percent of the industry's sales, and was also in wide use internationally. Four other metric sizes--the 3 liter, 1.5 liter, 375ml, and 187ml--were recommended by the Wine Institute because they were multiples or submultiples of the 750ml and thus would facilitate price comparisons by consumers between sizes. The 1 liter was also recommended because it was a standard metric unit, was in wide use internationally, and was a close approximation to the quart, which was a popular wine size in the U.S.
- 10-12-73 DISCUS' President addresses the National Conference of State Liquor Administrators convention. He states that by 1980, the EEC will adopt uniform standards of fill, in metric sizes, for alcoholic beverages and that the U.S. alcoholic beverage industry had better act quickly (i.e. decide on its metric sizes) in order to have a voice in this decision. This will enable us, he states, to ensure that future world sizes are advantageous for us and our markets. He then presents the sizes recommended by DISCUS (i.e. the 250ml, 375ml, 500ml, 750ml, and 1 liter).
- 12-10-73 DISCUS petitions BATF to amend regulations in Part 5 of Title 27CFR to provide for the following sizes: 250ml, 375ml, 500ml, 750ml, and 1 liter.

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The petition also requests a sufficient phase-in period for conversion of existing equipment and bottles to the new sizes, and that spirits bottled prior to the mandatory metric period be allowed to be sold. A hearing on these matters is also requested. (Note that elimination of miniatures is proposed.)

- 12-14-73 DISCUS sends letters to Wine and Spirits Wholesalers of America, Inc. (WSWA), and National Liquor Stores Association (NLSA) advising them of the 12-10-73 DISCUS petition to BATF and soliciting their study of the recommendations and their support.
- 12-27-73 At DISCUS' Laws and Regulation Committee meeting, DISCUS hands out information sheets on the U.K.'s metrication of its alcohol beverage tax code and gauging practices.
- 01-18-74 Heublein requests BATF also provide for 50ml and 1.5 liter sizes, in addition to the sizes recommended by DISCUS. (The 50ml size was later incorporated into BATF's proposed alternative set of sizes. The 1.5 liter size was rejected.)
- 03-11-74 DISCUS' Executive Committee reviews industry and government comments it previously had solicited on its recommended sizes. Extensive differences exist.
- 04-01-74 Kobrand Corporation recommends to BATF 50ml and 2 liter sizes.
- 05-06-74 At DISCUS' Board of Directors Meeting, the Executive Committee recommends the original proposals be revised to 187.5ml, 375ml, 700 or 750ml and 1 liter. The Board votes not to propose a one-half gallon equivalent and not to retain a miniature size.
- 05-07-74 H.R. 11035, which called for a coordinated, 10-year national conversion to metric measurement, is defeated in the House of Representatives.
- 05-09-74
to 06-14/74 Seven airlines protest to BATF the elimination of miniatures proposed by DISCUS.
- 05-28-74 DISCUS presents its proposed sizes (187.5ml, 375ml, 750ml, and 1 liter) to the 23rd General Assembly of the Federacion International on Wines and Spirits, held in Vienna, Austria. DISCUS' objective is to obtain a Federacion resolution recommending EEC adoption of the DISCUS sizes. Opposition from Germany, which wants a 700ml size, and NAABI, which recommends 50ml, 250ml, 375ml, 500ml, 750ml, 1 liter and 2 liter sizes, thwarts their efforts.

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- 06-10-74 Electronic Dispensers International requests BATF consider limiting the number of thread sizes on bottles. (BATF took no action on this since it is outside its regulatory authority.)
- 06-11-74 Hawaiian Distillers notifies BATF that it opposes eliminating the miniature and proposes a size comparable with or equal to the one-half gallon.
- 06-11-74 A public hearing is conducted on proposed regulatory changes regarding metric standards of fill for wine. There is no significant dissent, although some parties wanted slightly different sizes than those proposed. Of 40 written comments received, only three opposed converting to metric sizes.
- 06-20-74 DISCUS requests BATF delay action on its 12-10-73 petition due to disagreement among members on sizes.
- 07-03-74 DISCUS reports results of internal study of state level legislative changes required to implement metric sizes and possible tax impacts of metric sizes.
- 08-01-74 Meeting between DISCUS representatives and representatives of 13 airlines, the Air Transportation Association, and Marriott Corporation to discuss DISCUS' proposal to eliminate miniatures. These groups want miniatures and state that they are prepared to petition BATF to keep them. The problems with eliminating miniatures are: fewer brands could be offered; time problems on short flights; high equipment costs (gallies and carts); service, control, and storage problems; and safety problems.
- 08-05-74 The Glass Container Manufacturer's Institute (GCFI) notifies BATF that, since the wine and distilled spirits conversions will be occurring at the same time, it recommends a size-by-size phase-in. This will help avoid obsolescence of customary-sized bottles and a severe crunch in the conversion of bottle molds.
- 08-13-74 Schenley requests BATF to allow a 4 oz size.
- 10-11-74 DISCUS amends its original petition to BATF, proposing sizes of 46.8ml, 187.5ml, 375ml, 750ml, and 1 liter. The 46.8ml miniature is to be allowed only on means of public transportation, and DISCUS states that it will request a hearing within one year to deal with a size larger than 1 liter. A three year phase-in is requested and uniform standards for case packings are proposed.

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- 10-23-74 NAABI notifies BATF that it supports the new DISCUS sizes except that it also supports a 500ml size and a size larger than 1 liter. In a meeting with BATF officials, NAABI states that a 500ml is needed because the high cost of sugar has driven up the cost (and thus price) of liqueurs and that they desire a bottle that can be priced between the 750ml and the 375ml.
- 11-08-74 WSWA notifies BATF that it supports the new DISCUS sizes except for the restrictions on miniatures. It also proposes a one year option to consider a size larger than 1 liter.
- 11-14-74 NAABI notifies BATF that it supports DISCUS' proposed restrictions on miniatures. In a meeting with BATF officials, NAABI states that if restrictions cannot be imposed, it desires a miniature (where DISCUS only wants a miniature if it can be restricted).
- 11-22-74 The Kentucky Wholesale Liquor Dealers Association notifies BATF that it supports DISCUS' new sizes but opposes restrictions on miniatures. It also states that it opposes the 500ml size proposed by NAABI.
- 12-27-74 GCMI notifies BATF that it recommends a 4 year phase-in (instead of a 3 year phase-in as proposed by DISCUS), that it opposes restrictions on miniatures, and that it recommends having a size larger than 1 liter.
- 12-31-74 Treasury Decision T.D. ATF-12 is issued, changing the standards of fill for wine to metric. The six sizes requested by the Wine Institute are selected plus the 100ml which had been requested by foreign wine producers, importers, and airlines. Imported wines must also comply with the metric standards of fill. It establishes a 4 year conversion period beginning January 1, 1975 and ending December 31, 1978. All wine bottled for sale in the U.S. after December 31, 1978 is required to be in the authorized metric sizes. Standardized case packings are also established.
- 01-01-75 The wine conversion (optional period) begins.
- 01-06-75 The Kentucky Department of Alcoholic Beverage Control notifies BATF that it supports DISCUS' proposal (46.8ml, 187.5ml, 375ml, 750ml, and 1 liter) except for restrictions on miniatures.
- 02-10-75 The Puerto Rico Rum Producers Association notifies BATF that it endorses the new sizes recommended by DISCUS, but that it has not yet decided whether it supports a size larger than 1 liter.

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- 03-11-75 DISCUS amends its previous petition to BATF to add a 1.75 liter size and to recommend 01-01-79 as the mandatory date and a voluntary date as soon as possible.
- 03-12-75 NAABI notifies BATF that it supports a 1.75 liter size.
- 03/27/75 The Scotch Whisky Association notifies BATF that it supports a 2 liter size and a 50ml size as opposed to the proposed 46.8ml size.
- 04-75 The first metric-sized soft drink containers are introduced in the U.S.
- 04-02-75 The Puerto Rico Rum Producers Association notifies BATF that it supports a metric equivalent to the one-half gallon.
- 04-08-75 Safeway notifies BATF that it opposes the 1.75 liter and recommends a 1.5 liter size. It cites as its reasons potential consumer deception and confusion, difficulties in obtaining 1.75 liter bottles on the West Coast, and the benefits of having wine and spirits in identical sizes.
- 04-11-75 GCMI recommends to BATF that it require a size-by-size phase-in in order to systematically spread the load over the limited mold-making facilities available.
- 04-14-75 California Distilled Spirits Rectifiers Association urges BATF select a 1.5 liter as opposed to the 1.75 liter. They state that the 1.75 liter would require much greater conversion costs and that consumers could more easily make price comparisons with the 1.5 liter size.
- 04-17-75 A consumer (Consumer "A") notifies BATF that he opposes the miniature restrictions.
- 04-17-75 Diamond Glass Company notifies BATF that it opposes any restrictions on the miniatures. It also states that there is very little capacity in the industry to double-gob large sizes, and that their company is technically able to double-gob a 1.75 liter but not a one-half gallon bottle.
- 05-22-75 DISCUS amends its petition to propose a 50ml size instead of the 46.8 size (still for use on airlines and railroads only.)
- 06-03-75 NABCA notifies BATF that it supports DISCUS' recommendation for a 1.75 liter size. It states its reasons as: the one-half gallon size is popular with consumers; the 1.75 liter can be manufactured, filled, and labeled at substantially lower cost than a more exact equivalent of the one-half gallon, and a 1.75 liter size meets the basic consumer demand for a size larger than 1 liter.

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06-05-75 A consumer (Consumer "B"), in two letters to two different BATF officials, requests a hearing on metrication of distilled spirits containers and requests that his proposed sizes--50ml, 250ml, 500ml, 1 liter, 2 liters, and 4 liters--be listed for discussion. He also suggests permissive fills.

06-25-75 Goldwell, Ltd. proposed a 125ml size to BATF.

07-08-75 The Vendo Company requests BATF to allow miniatures to be sold by the lodging industry.

07-16-75 Notice of proposed Rulemaking and public hearing on Metric Standards of Fill for Distilled Spirits (No. 281) is issued. Discussion is to be limited to two proposals: the DISCUS proposal and a BATF proposal. The DISCUS proposal is as follows:

1. Proposed sizes: 1.75 liter, 1 liter, 750ml, 375ml, 187.5ml, and 50ml.
2. Restriction on sale of miniatures (50ml) to public transportation facilities only.
3. Once a bottler converted a product to a metric standard, he would be prohibited from bottling that product in a comparable U.S. standard.
4. For the sizes listed above, cases would be packed 6, 12, 12, 24, 48, and 120 bottles per case, respectively.
5. During a transition period from 01-01-76 through 12-31-78, metric standards of fill would be optional. The mandatory period would begin on 01-01-79.

The BATF proposal is as follows:

1. Standards of 500ml and 250ml instead of the 375ml and 187.5ml sizes.
2. Revocation of the exemption granted to cordials.
3. No restriction on the sale of miniatures.

The hearing is scheduled for 09-10/11-75.

07-16-75 A consumer (Consumer "C") notifies BATF that he believes the 187.5ml, 375ml, and 1.75 liter are poor sizes. He suggests sizes of 50ml, 250ml, 500ml, 750ml, 1 liter and 2 liters.

07-17-75 A consumer (Consumer "D") notifies BATF that he favors 250ml and 500ml sizes and opposes the DISCUS sizes.

07-17-75 A consumer (Consumer "E") notifies BATF that he favors sizes of 250ml, 500ml, 750ml, 1 liter, 2 liters, and 4 liters.

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- 07-17-75 A consumer (Consumer "B") notifies BATF that he favors sizes of 50ml, 250ml, 500ml, 1 liter, 2 liters, and 4 liters. He also requests notification, in advance, of the hearing date.
- 07-10-75 A consumer (Consumer "F") notifies BATF that he supports the adoption of metrics for alcoholic beverages in general. He also suggests modifying import restrictions (U.S. Customs regulations) so that tourists, in bringing back alcoholic beverages to the U.S., are never just under or just over the duty-free limit.
- 07-23-75 A consumer (Consumer "B") suggests to BATF sizes of 250ml, 500ml, 1 liter, 2 liters, 4 liters, 5 liters, and 10 liters. He also suggests letting consumers recommend sizes, in addition to the sizes presented by BATF and DISCUS.
- 07-30-75 A consumer (Consumer "B") requests BATF notify him when the hearing is to be held.
- 07-31-75 NABCA notifies BATF that it supports the DISCUS sizes and standardized case packings.
- 07-31-75 A consumer (Consumer "B") notifies BATF that he favors sizes of 50ml, 250ml, 500ml, 1 liter, 2 liters and 4 liters.
- 08-11-75 WSWA notifies BATF that it endorses DISCUS' sizes of 375ml and 187.5ml and opposes BATF's alternatives of 500ml and 250ml.
- 08-18-75 The Austrian National Association of Wine and Spirits Wholesalers requests BATF select the 700ml or 720ml instead of the 750ml.
- 08-19-75 Syndicat National des Fabricants de Spiritueux, a French trade association of producers of "spiritous liquors", notifies BATF that they have adopted a range of sizes set forth in EEC guidelines, further simplified to 50ml, 100ml, 200ml, 350ml, 500ml, 700ml, 1 liter, and 1.5 liters. They support a free choice of volumes over 1.5 liters and under 50ml. They suggest the U.S. and Europe should begin discussions to reach a totally unified range of volumes within 5 years.
- 08-19-75 Syndicat National des Fabricants de Liqueurs (France) notifies BATF that it supports sizes of 50ml, 250ml, 500ml, 750ml, 1 liter, and 1.75 liter (i.e. the BATF sizes), but requests BATF to allow all EEC-approved sizes to be imported from EEC nations.
- 08-21-75 Girolamo Luxando s.p.a., an Italian liqueur producer, notifies BATF that they have produced their product in 250ml and 500ml sizes since 1821,

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that they support the BATF sizes of 250ml and 500ml and oppose the DISCUS sizes of 187.5ml and 375ml, and that they can accept a revocation of the exception for cordials and liqueurs provided 250ml and 500ml are authorized sizes.

- 08-22-75 Vin and Spiritcentraler, the sole producer and importer of distilled spirits in Sweden, notifies BATF that they favor sizes of 750ml and 375ml.
- 08-25-75 A U.S. Metric Association official notifies BATF that he supports the BATF's recommended sizes of 50ml, 250ml, 500ml, 750ml, and 1 liter, but not the 1.75 liter size or DISCUS' recommended sizes of 187.5ml and 375ml. He states that the industry wants to sell the public smaller amounts at the same prices they charge for larger, customary bottles. He suggests a 2 liter bottle, and points out that 2 liters is closer in size to the half gallon than 1.75 liters.
- 08-25-75 A consumer (Consumer "B") submits a brief for the public hearing, recommending sizes of 50ml, 250ml, 500ml, 1 liter, 2 liters, 3 liters, and 4 liters.
- 08-26-75 Diamond Glass Company notifies BATF that it opposes restrictions on miniatures and recommends a size-by-size conversion, i.e., a timetable for each size over a three-year transition period, in order to avoid "chaos" in the conversion of bottle molds.
- 08-26-75 A U.S. Metric Association official notifies BATF that he favors their recommended sizes as opposed to DISCUS'. Ideally, however, the sizing scheme should be 1-2-5, i.e. 50ml, 200ml, 500ml, 1 liter and 2 liters.
- 08-26-75 The Irish Liqueur Manufacturers Association requests a special exemption for cordials and liqueurs, since they would have to increase the volumes and thus the prices under the proposed metric standards of fill.
- 08-27-75 Sazerac, a U.S. importer, notifies BATF that it supports the BATF sizes except for the miniature. They recommend it be restricted to airlines and railroads. They state that it will not be greatly missed since only 21 of the 50 states and the District of Columbia permit the sale of miniatures and only 3 states require miniatures for on-premises consumption. They support the standard case packings proposed by DISCUS, and the revocation of the exception for cordials, liqueurs, cocktails, highballs, bitters, and specialties. They request that dual labelling not be required, or if required, to be allowed in the glass and to remain after the conversion.

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- 08-27-75 The Irish Whisky Distillers Association notifies BATF that it supports the DISCUS sizes of 375ml and 187.5ml, not BATF's 500ml and 250ml sizes.
- 08-27-85 Goldwell USA, Inc. notifies BATF that it supports an intermediate size between 50ml and 250ml. They are a British firm which produces a specialty ten proof drink in a 111ml bottle. This is the firm's only product. They have purchased land and are preparing to construct a plant in Maryland to produce this product for U.S. and export markets. They state that the proposed metric sizes threaten their ability to market their product in the U.S., since it is marked as "one bottle, one glass, one drink". Any size larger than 125ml would mean that the product would not fit into standard-sized glasses; sizes much smaller than 111ml would not completely fill up a standard size glass. They state that the 50ml and 250ml are fine for "hard liquor", but bad for specialty products. They support the conversion to metric, but request a 125ml size or retaining the exemption for specialties.
- 08-28-75 Confederation Nationale Belge des Industries et du Commerce des Vins, Spiritueux et Liqueurs (Belgium) requests BATF to allow both the 700ml and 750ml sizes, at least until 1980.
- 08-28-75 A consumer (Consumer "G") recommends to BATF that it authorizes sizes of 100ml, 200ml, 500ml, 2 liters, and 5 liters.
- 08-28-75 A retailer recommends to BATF that the same fractions as we use in our currency be used to establish the metric sizes (except for the dime), i.e., nickel = 50ml, quarter = 250ml, half dollar = 500ml, dollar = 1 liter, 2 dollar bill = 2 liter, plus a 4 liter.
- 08-28-75 Oy Alko, Ab (the State Alcohol Monopoly of Finland) notifies BATF that it finds DISCUS' proposed sizes preferable to BATF's.
- 08-29-75 The Association of Canadian Distillers notifies BATF of their "full and complete support" for the DISCUS sizes.
- 08-30-75 The Federation of Greek Industries notifies BATF that it supports the DISCUS sizes and not BATF's recommended sizes. It states that 250ml and 500ml sizes would require a large number of new molds. They also recommend a long (3-4 years) transition period.
- 09-03-75 Associacao dos Exportadores de Vinho do Porto (Portugal) notifies BATF that it supports BATF's proposed sizes.
- 09-03-75 Latchford Glass Co. notifies BATF that it supports a 1.5 liter as opposed to a 1.75 liter because a 1.75 liter is too large for it to double-gob.

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- 09-10-75 The public hearing is held on metric standards of fill for distilled spirits. Some key oral testimony is presented below:
1. DISCUS drops its proposed restrictions on miniatures at the beginning of the hearing.
 2. Several industry spokesmen argue against BATF's proposed sizes of 250ml and 500ml, saying they will require price increases. This is because both of these sizes are slightly larger than their nearest customary-sized equivalents (.5 oz and .9 oz respectively).
 3. Most testimony supports the DISCUS proposal.
 4. GCMI wants a longer phase-in period and a mandated size-by-size phase-in schedule.
 5. No consumers or representatives from consumer groups testify.
 6. California brandy suppliers argue against the 1.75 liter and for a 1.5 liter size due to unavailability of bottles and required bottling equipment on the West Coast.
- At the hearing, a 60 day comment period was established for the filing of additional views.
- 09-11-75 A consumer (Consumer "H") notifies BATF that he supports a 1-2-5 sizing scheme, in order that the consumer would never have to do more than divide or multiply by two when making unit price comparisons. He also states that he opposes the 1.75 liter size.
- 09-12-75 The Italian Embassy notifies BATF that it favors BATF's proposed sizes.
- 09-14-75 A consumer (Consumer "G") recommends to BATF that it allows any multiple of 1, 2, or 5 times a decimal fraction of a liter, and states that he specifically recommends a liter instead of a 1.75 liter size.
- 09/16/75 The Canadian Metric Association notifies BATF that it supports sizes of 50ml, 200ml, 500ml, 1 liter, and 2 liters, i.e. an approximate 1-2-5 sizing scheme.
- 10-08-75 The Delegation of the Commission of the European Communities notifies BATF that it prefers a 200ml size as opposed to the 250ml size and that it prefers a 20°C reference temperature.
- 10-08-75 The Austrian Embassy notifies BATF that it favors 700ml and 720ml sizes and that it would consider a 750ml as a non-tariff trade barrier.
- 10-10-75 A consumer (Consumer "I") notifies BATF that he favors sizes of 2 liters, 1 liter, 500ml, 250ml, and either a 75ml or 100ml for a miniature.

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- 10-17-75 WSWA notifies BATF that it favors the proposed number of bottles per case.
- 10-20-75 Maloney-Davidson Co. suggests to BATF that it require all cases to contain 9 liters, and since the 1.75 liter would not fit into this scheme, Maloney-Davidson opposes it.
- 10-21-75 NAABI petitions BATF for a 60ml wine size (which is later denied on 9-16-76).
- 10-22-75 U.S. Mission to EEC in Brussels notifies BATF that the EEC will adopt the 200ml as a standard size and not the 250ml.
- 10-27-75 A consumer (Consumer "J") notifies BATF that he opposes the DISCUS sizes.
- 10-31-75 A consumer (Consumer "B") notifies BATF that he opposes the 1.75 liter and favors a greater selection of sizes in general. He favors a 2 liter and a 4 liter size.
- 11-04-75 DISCUS requests BATF to extend the comment period in order for it to poll its members regarding the size-by-size phase-in proposed by GCMI.
- 11-07-75 A U.S. Metric Association Regional Officer notifies BATF that he supports sizes of 50ml, 100ml, 200ml, 500ml, 1 liter, 2 liters, and 5 liters, i.e. a 1-2-5 sizing scheme.
- 11-10-75 A consumer (Consumer "K") notifies BATF that he favors a 1-2-5 approach to conversion.
- 11-17-75 Notice No. 285 is issued, extending the comment period on the proposed regulations regarding metric standards of fill for distilled spirits to December 10, 1975.
- 12-04-75 The Independent American Whiskey Association notifies BATF that it opposes a size-by-size phase-in.
- 12-02-75 Goldwell USA, Ltd. notifies BATF that it desires a 125ml standard of fill (they note that 19 states already exclude specialty products) or at least retention of exemptions on standards of fill for cordials.
- 12-09-75 DISCUS notifies BATF of its following positions:

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1. Prefers 20° Celsius reference temperature for a metric standard.
2. Opposes NLSA's recommendation to have a 24 bottle case for the 187.5ml and a 12 bottle case for the 375ml (instead of 48 and 24 respectively). This would cause an increase in costs of \$.08 per case. DISCUS recommends that case size not be specified in the regulations, but be left to the discretion of the individual states, as before.
3. Recommends a 90-day delay between date of publication of the regulations and the starting date for the optional period, to allow for systematic firm and industry planning.

- 12-10-75 NAABI notifies BATF that it supports standardized cases as proposed but opposes a size-by-size phase-in.
- 12-23-75 The Metric Conversion Act of 1974 (P.L. 94-168) is enacted, establishing national policy to be to coordinate and plan for the increasing use of the metric system in the U.S., and establishing the United States Metric Board to coordinate the voluntary conversion to the metric system.
- 03-10-76 Treasury Decision T.D. ATF-25 is issued. In this, BATF adopts final regulations establishing metric standards of fill for bottled distilled spirits in interstate or foreign commerce. These regulations are promulgated under the Federal Alcohol Administration Act, 27 U.S.C. Chapter 205. The sizes selected are 50ml, 200ml, 500ml, 750ml, 1.0 liter, and 1.75 liter. It rescinds the exemption from size requirements for cordials and specialty items, and establishes uniform packing sizes for cases. There are no restrictions on the sale of miniatures. The effective voluntary date is October 1, 1976; the effective mandatory date is January 1, 1980. Labels used on metric bottles during the phase-in must list contents in both metric and U.S. equivalents.
- 03-10-76 BATF issues a press release pointing out the differences between the customary and new metric sizes.
- 03-16-76 Treasury Decision T.D. ATR-25 is issued, containing minor corrections to T.D. ATF-25, the final regulations establishing metric standards of fill for bottled distilled spirits. There are no substantive changes to T.D. AFT-25.
- 03-29-76 DISCUS petitions BATF to change the regulations to provide that 200ml bottles be packed 48 per case in lieu of 60. The reasons given are that existing equipment is unsuitable, and difficulties in palletizing, warehousing, and handling the cases (this was granted on June 14, 1976).

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- 04-23-76 BATF Circular No. 76-9 is distributed to clarify the requirements of the conversion phase-in. Conversion of one size to metric does not require simultaneous conversions of other sizes even if of the same brand. Also, a proprietor who operates more than one plant bottling the same product may convert a size to metric at one plant but continue to bottle in existing sizes at the other plant or plants.
- 06-14-76 BATF amends 27 CFR Part 5 as contained in T.D. ATF-25 to provide that 200ml bottles be packed 48 per case in lieu of 60.
- 06-22-76 DISCUS representatives meet with BATF to discuss what can be done about expected phase-in problems and floor stock adjustments.
- 07-30-76 BATF rules that imported bottled goods in metric sizes may be entered in Customs bond or foreign trade zones prior to October 1, 1976, for release for domestic sale on or after October 1, 1976.
- 08-23-76 Notice of Proposed Rulemaking No. 299 is issued by BATF proposing conversion to metric standards of fill on a state-by-state basis. Two reasons are given. Some state laws and regulations prevent the sale of metric-sized distilled spirits bottles. Thus, a proprietor could lose one or several market areas by converting to metric. Also, a multi-plant company could use one of its plants to supply liters of brand X, for example, to those states allowing the metric sizes. It could then use another of its plants to supply quarts of brand X to those states not permitting the metric size. A single plant company could not do this and thus would be at a competitive disadvantage. Under this proposal, when a plant begins bottling a given brand of a product in a metric size for distribution to a particular state, it can no longer ship the corresponding customary size into that state.
- 08/30/76 Notice of Proposed Rulemaking No. 302 is issued. This prescribes case marking requirements for metric size bottles; requires separate strip stamp accounting for metric sizes; liberalizes record keeping requirements; and prescribes a conversion factor to use when converting metric units to customary U.S. units.
- 10-01-76 The optional period for metric sizes begins.
- 10-26-76 Treasury Decision T.D. ATF-34 is issued, essentially the same as Notice No. 302 of 08-30-76. This adopts final regulations for implementing metric standards of fill for distilled spirits under the authority of the Internal Revenue Code of 1954, 26 U.S.C. Chapter 5301. It removes the exception for the 4 oz size for intrastate commerce.

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- 10-26-76 Treasury Decision T.D. ATF-35 is issued, allowing a state-by-state phase-in of metric sizes as proposed in Notice No. 299 of 08-23-76.
- 01-21-77 Treasury Decision T.D. ATF-39 is issued, clarifying the required method of converting between metric and U.S. units for tax assessments and reporting.
- 03-77 BATF issues a press release advising consumers to be certain of the sizes they buy because of the potential for confusion between bottles of different sizes which appear to look alike.
- 03-77 BATF begins distributing metric conversion posters to suppliers, wholesalers, importers, state liquor control agencies, and retail stores.
- 05-26-77 NAABI petitions BATF to allow the importation of miniature bottles into the U.S. in case packings which are legal in the country of origin. The main objective is to enable Scotch whisky to be shipped to the U.S. in 50ml bottles packed 192 to the case, as opposed to 120 as required by BAFT. (This is later rejected by BATF on 09-19-77, and then approved on 01-01-80.)
- 07-06-77 BATF distributes Industry Circular No. 77-15, informing of ATF Ruling 77-21 which sets labeling requirements for wine and distilled spirits bottled in metric standards of fill.
- 08-22-77 BATF publishes in the Federal Register proposed rules to permit wine sizes larger than 3 liters, redefine a liter of wine at a reference temperature of 20° Celsius, and permit the Director of BATF to grant exemptions to the bottles per case requirements in certain instances.
- 09-29-77 BATF rejects NAABI petition of 05-26-77.
- 10-05-77 NAABI petitions BATF for a 50ml wine bottle size, mainly for imported Sherry. (This was approved in February 1981.)
- 10-20-77 The Consumer Liaison Committee of the American National Metric Council notifies BATF that it supports allowing wine sizes larger than 3 liters. It favors sizes of 5, 10, 15, and 20 liters. It states that these would provide for easy price comparisons by the consumer.
- 10-27-77 DISCUS argues to BATF against additional, extra large metric sizes for wine. DISCUS argues that it will lead to a proliferation of new sizes and result in loss of conversion benefits to consumers and industry.

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- 12-07-77 The Scotch Whisky Association requests BATF to allow the spelling "litre" in addition to "liter" in the size descriptions on the bottle and bottle label. This was granted by BATF (BATF said it had been permitted all along).
- 12-22-77 NAABI petitions BATF to change the designation of measurements to centiliters as opposed to milliliters. It also requests acceptance of "litre" in addition to "liter" designations. BATF denied the use of centiliters, allowed "litre".
- 05-09-78 Treasury Decision T.D. ATF-49. This permits the use of any wine container sizes between 4 and 17 liters that are in even liter amounts. It also changes the reference temperature to 20^o Celcius, allows exemptions to the bottles per case requirements where good cause can be demonstrated, and exempts containers 18 liters and larger from the standards of fill.
- 07-06-78 DISCUS completes a study on the progress of the conversion phase-in, including price changes. It is based upon DISCUS' Supplier Price Index (SPI) and traces the introduction of the 750ml as a replacement for the 4/5 quart for 81 brands. Some of the findings are: 1) 63% of the brands representing 76% of the SPI market have already converted; 2) the majority of brands remaining to be converted are imported products primarily in non-whiskey categories; 3) there has been a tendency for larger volume suppliers and brands to convert more rapidly than smaller ones; and 4) quoted prices have decreased, as well as increased, when the 750ml size has been introduced, the dominant pattern being small price increases (on a volume-adjusted basis) ranging from about .5% to several percentage points.
- 09-18-78 At a DISCUS Executive Committee meeting, discussions are held regarding a perceived need by a DISCUS member for other metric sizes, particularly sizes between the 200ml and 500ml. The Committee agreed that nothing should be done at the present time and that they should wait for experience with the new sizes prescribed by BATF.
- 01-01-79 The mandatory period for metric wine containers begins.
- 01-01-80 The mandatory period for metric distilled spirits containers begins.
- 01-01-80 BATF eliminates the standard case packing requirements. The main reason given was the numerous applications for exemptions from the requirements.

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- 02-29-80 The U.S. District Court for the District of Maryland rejects the challenge to BATF's prohibition on the bottling after 01-01-80 of 4 oz. sizes for intra-state sale. The case was initiated by the Overbrook Egg Nog Corporation and Heublein, Inc. A stay of decision was requested and an appeal filed later by the plaintiffs and the State of Maryland. The appeal was subsequently rejected, leaving BATF's intrastate authority intact.
- 03-17-80 Notice of Proposed Rulemaking No. 335 is issued, proposing to permit a 50ml miniature bottle size for wine. It states the reason is to replace the 2 fl. oz. size (now obsolete) which was commonly used for serving sherry or port wines in transportation service.
- 03-18-80 DISCUS completes a study on state laws and regulations concerning case sizes. Twelve states were found to have regulations on statutes which address case packings for distilled spirits. Four permit a variance for good cause, only one requires all containers in a case to be of uniform size, one state's enabling statute for the regulation has been repealed, and one state follows federal guidelines.
- 04-21-80 DISCUS completes a study of state measures (liters or gallons) for assessing taxes and for other reporting. By 1981, 14 states are expected to use liters solely for publication of statistics on sales and shipments compared with only one in 1980. Six states will use both gallons and liters and 21 are expected to continue to use gallons only. Regarding tax revenue statistics, by 1981 14 states are expected to have shifted to using liters only from three in 1980, with the number using gallons only dropping from 27 to 32. Three will use both gallons and liters in 1981 compared with 10 in 1980.
- 03-20-81 Overbrook Egnog petitions BATF to allow a 100ml distilled spirits container.
- 03-30-81 BATF adopts T.D. ATF-76, allowing a 50ml size for wine and eliminating standard case packings for wine.
- 06-19-81 BATF issues T.D. ATF-86, authorizing a 100ml distilled spirits container for use in intrastate commerce.

IMPORTANT NOTE

There is some confusion about the role of the U.S. Metric Board and the national policy on metric conversion

Congress established the Board to plan and coordinate the voluntary increasing use of the metric system. It is not, however, the role of the Board to promote metric usage.

The Board is an independent Federal agency responsible for conducting public information and education programs and appropriate research, coordination and planning activities.

Metric Conversion in this country is voluntary. When Congress passed the Metric Conversion Act in 1975 it did not make conversion mandatory; nor did it establish a target date or deadline for conversion.

The Board has no compulsory power. It is a public service agency consisting of citizen representatives from all walks of American life. Its 17 members are appointed by the President and confirmed by the Senate. Members are nominated to represent labor, retailing, small business, industry, construction, state and local governments, science, engineering, consumer groups and the public at large.

Please contact us if you have any questions about the role of the Board or the national policy on metric conversion.



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