

UNITED STATES TARIFF COMMISSION

CLINICAL THERMOMETERS

**Report to the President on Investigation No. TEA-IA-7 Under
Section 351(d)(2) of the Trade Expansion Act of 1962**



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Note.--The whole of the Commission's report to the President may not be made public since it contains certain information that would result in the disclosure of the operations of individual concerns. This published report is the same as the report to the President, except that the above-mentioned information has been omitted. Such omissions are indicated by asterisks.

REPORT TO THE PRESIDENT

U.S. Tariff Commission,
May 27, 1965.

To the President:

This report is made pursuant to section 351(d)(2) of the Trade Expansion Act of 1962 (76 Stat. 900), 1/ which provides that--

Upon request of the President or upon its own motion, the Tariff Commission shall advise the President of its judgment as to the probable economic effect on the industry concerned of the reduction or termination of the increase in, or imposition of, any duty or other import restriction pursuant to this section or section 7 of the Trade Agreements Extension Act of 1951.

Introduction

The investigation to which this report relates was instituted by the Tariff Commission on November 23, 1964, in response to a request from the President received on November 19, 1964. A public hearing in connection with the investigation was held on February 9, 1965; all interested parties were afforded opportunity to be present, to produce evidence, and to be heard.

Following a report by the Tariff Commission in 1958 2/ pursuant to an investigation conducted under section 7 of the Trade Agreements Extension Act of 1951, the President, by proclamation dated April 21, 1958, withdrew the concession in the General Agreement on Tariffs and Trade on clinical thermometers, finished or unfinished, wholly or in chief value of glass, provided for in paragraph 218(a) of the Tariff

1/ This report is also submitted as the Commission's annual report on clinical thermometers for the purpose of sec. 351(d)(1) of the act.

2/ U.S. Tariff Commission, Clinical Thermometers, Finished or Unfinished: Report to the President on Escape-Clause Investigation No. 63 . . . , 1958 (processed).

Act of 1930, effective after the close of business on May 21, 1958. 1/
 This action resulted in an increase in the duty on such thermometers
 from 42-1/2 percent ad valorem to 85 percent ad valorem, the rate
 originally fixed in the Tariff Act of 1930. Thereafter the Commission
 maintained a continuing review of developments with regard to clinical
 thermometers and made two reports respecting them pursuant to paragraph
 1 of Executive Order 10401. 2/

In May 1962 the Commission, on its own motion, instituted an
 investigation for the purposes of paragraph 2 of Executive Order 10401.
 Inasmuch as section 351(d) of the Trade Expansion Act of 1962 super-
 ceded Executive Order 10401, 3/ the Commission continued its investigation
 under the provisions of section 351(d)(2) of that act. In its report
 of that investigation 4/ the Commission advised the President of its
 judgment concerning the probable economic effect of a reduction or
 termination of the increase in duty on clinical thermometers. On
 September 23, 1963, the President announced that he had decided not to
 modify the duty then in force.

1/ Proclamation No. 3235; 3 CFR, 1954-1958 Comp., 151.

2/ U.S. Tariff Commission, Clinical Thermometers, Finished or Unfinish-
ed: Report to the President . . . Under Executive Order 10401, 1960 and
1961 (processed).

3/ Executive Order 10401 (3 CFR, 1949-1953 Comp., 901) was formally
 terminated by sec. 12(b)(3) of Executive Order 11075 (28 F.R. 473).

4/ U.S. Tariff Commission, Clinical Thermometers: Report to the
President on Investigation No. TEA-IA-1 Under Section 351(d)(2)(5) of
the Trade Expansion Act of 1962, TC Publication 90, 1963 (processed).
 This report was also submitted as the Commission's first report on
 clinical thermometers for the purpose of sec. 351(d)(1) of the Trade
 Expansion Act of 1962.

The most recent report of developments in the clinical thermometer industry under the provisions of 351(d)(1) of the Trade Expansion Act of 1962 was submitted to the President on May 1, 1964. 1/

As used in this report, the terms "U.S." and "domestic" refer to the customs territory of the United States. This territory embraces the 50 States, the District of Columbia, and Puerto Rico, but does not include the Virgin Islands of the United States. However, shipments from the U.S. Virgin Islands to the customs territory of the United States have been taken into account in the calculation of apparent U.S. consumption of clinical thermometers. Although articles received from the U.S. Virgin Islands are technically U.S. imports, in this report, unless otherwise indicated, such articles are referred to as "shipments" from the U.S. Virgin Islands, and the data on U.S. imports do not include such shipments.

1/ U.S. Tariff Commission, Clinical Thermometers, Finished or Unfinished: Report to the President (No. TEA-IR-3-64) Under Section 351(d)(1) of the Trade Expansion Act of 1962, TC Publication 127, 1964 (processed).

Probable Economic Effect of Reduction or Termination
of the Increase in Duty

The manufacture of clinical thermometers is, generally, a two-stage process, each involving many operations: the production of "blanks," which are glass tubes with attached bulbs including the enclosed mercury, and "finishing," which principally involves calibrating and marking the fever scale on the instrument.

The domestic industry, which consists of firms making thermometers from domestic blanks and firms making blanks for sale to others, has sold between \$5 million and \$7 million worth of thermometers in this country annually in recent years. There are virtually no exports. Six of the eighteen companies that make finished thermometers account for about 85 percent of the sales. Two of them, Becton, Dickinson & Co. and Eisele & Co., Inc., are multi-product organizations while the other four confine their operations exclusively or almost exclusively to the manufacture and sale of thermometers. Most of the remaining producers are small, family-owned-and-operated concerns.

Consumption of thermometers in the United States has increased by about one-third since the higher duty rate (85 percent ad valorem raised from 42-1/2 percent ad valorem) was imposed under escape-clause procedures in 1958. With increased family formation, rising consumer income, and more medical care for all segments of the population, U.S. consumption can be expected to continue to grow. (For the larger producers, profits have also improved since the escape-clause action was taken.)

Thermometers move through two well-defined marketing channels: in bulk, for institutional use by hospitals and Government agencies, and individually packaged for the retail trade. Somewhat more than half of the domestic thermometers are sold at retail. In general, sales of imported thermometers--which rose from 16 percent of U.S. consumption in 1957 (before the escape-clause action) to 20 percent in 1964--have been concentrated in the bulk trade, where brand name and style of packaging are less important and sales are made primarily on the basis of price. By the same token, the smaller U.S. producers have sold their thermometers principally to the same segment of the market, the retail trade being supplied mainly by the larger companies.

There have been several significant changes in the industry in the past several years. For one thing, several of the larger producers have moved toward integration, manufacturing all or nearly all of their own blanks instead of purchasing them from domestic blankmakers. As a result, there are now only eight firms producing blanks in the United States, * * *.

Secondly, the large producers have invested a considerable amount of capital in new machinery and new plants and thus reduced their costs markedly. The smaller companies have not had access to the necessary resources to mechanize and their aggregate sales have declined.

A new process known as "flush marking," a system for annealing the fever scale in the glass instead of etching and pigmenting it, is being used by several firms. This technological development may prove to be significant in that the marking will be permanent and the possibility

of cross infection, which particularly concerns hospitals, will be greatly reduced.

After the 1958 duty increase, a thermometer importing concern established a plant in the Virgin Islands to convert Japanese made blanks into finished instruments. Shipments to the United States, none of which are subject to the 85-percent duty applicable to imports from foreign countries, rose from nil in 1957 to about 10 percent of total U.S. consumption in 1964.

Virtually all imports come from Japan, and there have been significant changes here as well. An export quota was established, which has tended to prevent sharp fluctuations in U.S. imports and to deter shipments in some years, although it has been increased a number of times since it was first imposed. Because of changes in Bureau of Customs marking regulations, the composition of the imports has changed from blanks to finished thermometers. Producers in Japan apparently have lagged behind the U.S. firms in mechanization and technological developments in the past, although the acceptance of flush marking in the United States may force them to catch up in the latter field in the near future. The lack of uniformity of bore in the thermometer tubing used by Japanese producers and the size of the investment needed to overcome this handicap pose a severe obstacle to mechanization. Finally, production costs in Japan in this industry, as in so many others, have been increasing in recent years.

Restoration of the trade-agreement rate of duty would not likely have a material effect on most of the larger domestic producers of thermometers, i.e., those that account for about three-fourths of the U.S. output. They are in a stronger position than before to meet import competition, and they sell the major share of their output to the retail trade, which has not been subject to great pressure from imports.

Whether or not the U.S. duty is reduced, imported thermometers will probably continue to be sold primarily in the institutional markets, along with domestic thermometers, where the emphasis is on price competition. Likewise, domestic thermometers will probably continue to dominate the retail markets by virtue of their nonprice competitive advantages such as national advertising, product prestige, packaging and casing, and marketing techniques.

Most of the small producers would be adversely affected by a reduction in the duty. These producers have been unable to mechanize their operations, they cannot afford large sales forces or national advertising, and hence they are forced to sell in the highly competitive local markets. They do not have adequate financial reserves for the product improvements, such as improved packaging and casing, which are necessary for successful competition in the retail markets, and thus must meet Japanese price competition head on. In the Commission's opinion, attrition among these small producers and the independent blankmakers is inevitable irrespective of future duty changes, but a duty reduction would accelerate the process.

The likely consequence of a duty reduction on purchases by the U.S. Government, under the present procurement regulations, probably would be an increase in the proportion of imported thermometers obtained by the procuring agencies. The increase would not be great, however, inasmuch as the Government is now purchasing most of its requirements from importers (85 percent in 1964). Further, there may be other pending changes which would make the Japanese less competitive in this market.

* * * * *

Reduction of the duty to 42-1/2 percent ad valorem would discourage further development of the finishing of thermometers in the Virgin Islands. * * *

* * * * *

Information Obtained in the Investigation

Description and uses

A clinical thermometer, or "fever" thermometer, is a self-registering instrument for measuring body temperatures. It consists of a glass capillary tube approximately 4 inches long to which a small glass bulb is attached. The opening of the bulb connects with one end of the bore of the tube; the other end of the bore is sealed. Mercury is sealed in the bulb and part of the tube, which is so constructed as to magnify the column of expanded mercury and restrict its contraction back into the bulb. A temperature scale is marked on the tube's surface. An enamel strip, usually white, is embedded in the glass to serve as a contrasting background for the mercury column. Thermometers used in the

United States are usually calibrated in degrees and fifths of degrees Fahrenheit, with a scale ranging from 96° to 106° .

The manufacture of clinical thermometers has two distinct phases. The first, the manufacture of the thermometer blank, comprises more than 100 operations; the second, the finishing of the thermometer, consists of 25 or more operations involved in making the temperature scale, engraving, pigmenting, and testing. Until recently, clinical thermometers were manufactured almost entirely by hand. During recent years, however, a number of the larger producers have successfully mechanized certain of these manual operations. 1/

Customs treatment

Clinical thermometers, finished or unfinished, are dutiable in item 930.00 of the Tariff Schedules of the United States (TSUS) at the temporary rate of 85 percent ad valorem. 2/ This rate supplants the trade agreement rate, $42\frac{1}{2}$ percent ad valorem, provided for in item 711.35 of the TSUS. The 85 percent rate became effective after the close of business on May 21, 1958, pursuant to Presidential Proclamation No. 3235.

Before the TSUS became effective August 31, 1963, clinical thermometers were dutiable in paragraph 218 of the Tariff Act of 1930, originally at the rate of 85 percent ad valorem. The trade agreement rate of

1/ See further discussion of mechanization in the section on U.S. producers.

2/ Articles received from the Virgin Islands and containing foreign materials having a value of 50 percent or less of their total value when entering the United States are exempt from duty (general headnote 3(a) of TSUS).

42-1/2 percent became effective October 1, 1951, pursuant to a concession granted in the General Agreement on Tariffs and Trade.

U.S. consumption

The annual U.S. consumption of clinical thermometers, as measured by sales, increased from 101,000 gross in 1957 to 132,000 gross in 1964 (table 2). In 1964, consumption was greater than in any of the preceding 14 years and was about 30 percent higher than in 1957.

The share of U.S. consumption supplied by domestically produced thermometers declined each year from 1957 through 1961; in 1962-64 it rose substantially above the 1961 figure. In 1957, domestic thermometers supplied about 84 percent of consumption, compared with 64 percent in 1961 and 71 percent in 1962-64. The recovery after 1961 reflected rising sales by the 4 largest domestic producers * * *. A sharp decline in the number of thermometers made from imported blanks from 1961 to 1964 was largely offset by an increase in imports of finished thermometers including shipments from the Virgin Islands.

* * * * *

In most recent years, the U.S. Government has been the largest purchaser of clinical thermometers. The Defense Supply Agency and the Veterans Administration together contracted for virtually all thermometer purchases by the U.S. Government in the years 1957-64 (table 3). 1/

1/ No data are available respecting the time of delivery of the thermometers covered by these contracts. The quantities specified in the contracts awarded in each of the years 1957-64 were equivalent to the following approximate proportions of consumption: 1957, 8 percent; 1958, 7 percent; 1959, 5 percent; 1960, 7 percent; 1961, 9 percent; 1962, 11 percent; 1963, 3 percent; 1964, 10 percent.

The share of total purchases contracted for by those agencies that was supplied by imports increased from nil in 1957 to 81 percent in 1961; it was lower in 1962 and 1963, but equaled 85 percent of the total in 1964. The marked increase in the importers' share in the latter year was accompanied by a substantial increase in Government purchases.

Earlier Commission reports noted that the domestic producers have had certain advantages over the importers in the competitive bidding process employed by the procuring agencies (e.g., the Buy-American Act and surplus-labor-area differentials). In November 1963, the Defense Supply Agency established a "set aside" program in an effort to place a "fair" proportion of its procurement contracts with small business firms. 1/ This program thereby reserved such proportion of that agency's proposed procurement for the domestic industry; importers are precluded from bidding on contracts so reserved. The set-aside program did not materially affect purchases of clinical thermometers by the U.S. Government in 1964 inasmuch as the Veterans Administration, which does not follow such a program, accounted for the great bulk of Government purchases of thermometers in that year. * * *

U.S. producers

In 1957, 20 concerns made clinical thermometers in the United States from domestic blanks. Since 1962, 18 concerns, producing clinical thermo-

1/ To qualify as a "small business firm" under the set-aside program for clinical thermometers, a firm must, among other things, employ no more than 500 persons and its thermometers must be produced in the United States, its possessions, or Puerto Rico. While it is unclear which U.S. producers would qualify as small business firms, Becton, Dickinson & Co. and the Taylor Instrument Companies would not because they have more than 500 employees.

meters in 20 plants, 1/ have accounted for virtually all such production. One firm makes thermometers in 2 plants and conducts the packaging and distributing operations in another. The 20 plants are located as follows: 14 in New York, 2 in New Jersey, and 1 each in Nebraska, Florida, Tennessee, and Puerto Rico.

Four of the domestic producers are multiproduct companies; 2/ they accounted for more than 40 percent of the domestically produced clinical thermometers sold in 1964. Thermometers account for a small part of the total sales of three of these companies but an appreciable part for one of them. Fourteen of the producers confine their operations exclusively or almost exclusively to making and selling clinical thermometers; four of these accounted for more than 40 percent of the domestically produced thermometers sold in 1963.

In an attempt to adapt to competitive conditions, several of the larger domestic producers have instituted significant intra-company changes since 1957. Most of them formerly bought the bulk of their required blanks from domestic blankmakers; by 1961 all but two were manufacturing most of their own blanks. This change resulted in a substantial reduction in the number of blankmakers.

* * * * *

1/ In late 1964 an additional firm began experimental production of clinical thermometers, but since this firm did not sell thermometers in 1964 and its plant is not currently in full production, it has not been included with the 18.

2/ Other products manufactured by these concerns consist chiefly of hospital supplies and scientific instruments.

In 1957 several concerns produced clinical thermometers from imported blanks. Currently only one firm is regularly engaged in such production; this firm also imports finished thermometers.

The number of concerns engaged on a contract basis to perform one or more of the operations necessary for the production of clinical thermometers has remained fairly constant in recent years. During the period 1961-64 there were about 30 such concerns.

The number of blankmakers (concerns that produce thermometer blanks for sale to others) decreased from 20 in 1957 to 8 by the end of 1964, primarily because the large thermometer producers are now manufacturing their own blanks rather than purchasing them. The remaining 8 blank-making firms, 4 in New York and 4 in Tennessee, are small cottage-type concerns; * * *

Several U.S. manufacturers of clinical thermometers have made substantial capital outlays in recent years in order to lower production costs by mechanizing various operations formerly performed manually. The bulk of the investment in new machinery occurred in 1962-64; such investment during this 3-year period totaled in excess of \$1 million compared with about \$431,000 during the period 1958-61. Domestic producers anticipate investing about \$2 million during the years 1965-66. Although the larger producers of clinical thermometers accounted for the bulk of such investment, smaller producers recently have been purchasing machines from the Eisler Engineering Co. * * *

Most of the investment in mechanization during recent years has been for the manufacture of thermometer blanks. The finishing operations

already had been substantially mechanized in the larger plants. A new finishing technique, known as flush marking, however, is expected to result in substantial labor saving and will provide consumers with an improved product. Unlike the etched and pigmented thermometers, flush-marked thermometers have irremovable scale markings and apparently reduce the possibility of cross infection incident to thermometer use. In flush marking the scale markings are permanently annealed in the glass rather than etched and surface pigmented. In 1964, several domestic producers began experimental production of flush-marked thermometers; the product should be available to consumers by the end of 1965.

U.S. production and sales

Data reported to the Commission on U.S. production of clinical thermometers are incomplete. Nearly all of the producers, however, reported data on their sales, and estimates have been made for the few small producers that failed to respond. In 1957, domestic producers' sales of clinical thermometers made from domestic blanks amounted to about 85,000 gross (table 4). Their sales increased markedly in 1958 to 98,000 gross, principally because of a severe epidemic of Asian flu. There was a sharp reduction in 1959, an increase in 1960, and then a decline to 71,000 gross in 1961. Sales increased to 94,000 gross in 1963 and amounted to 93,000 gross in 1964. The average unit value of thermometers sold declined from \$76.84 per gross in 1962 to \$69.84 per gross in 1964. * * *

Sales by blankmakers declined from approximately 16,000 gross per year in 1957-59 to 10,000 gross in 1964 (table 5).

U.S. imports

U.S. imports of finished and unfinished thermometers increased from 21,000 gross in 1957 to 34,000 gross in 1959 (table 6). ^{1/} The imports declined to 21,000 gross in 1960 and then rose each year to 28,000 gross in 1964. Japan supplied virtually all of the imports throughout 1956-64; small quantities were imported from West Germany, the Netherlands, and Mexico.

Since the duty on thermometers was increased in May 1958, marked changes have occurred in the import trade. The increase in duty was but one of several factors contributing to such changes. In 1957, when nearly all of the imports consisted of thermometer blanks, there were some 10 importers; currently, there are only 5 and 3 of them account for the bulk of the imports, most of which now consist of finished thermometers.

During the period 1956-58 the imports of thermometers were almost all in the form of complete blanks (table 6a). ^{2/} In those years the

^{1/} Import data obtained by the Commission and official import statistics compiled by the U.S. Department of Commerce are shown in table 6. The differences between the two sets of data are attributable to (1) a time lag between actual importation and the recording of imports in official statistics, (2) breakage and pilferage, and (3) probable errors in counting. The data obtained by the Commission are used in this report as representing actual imports. Use of the official statistics, however, would not change the analysis significantly.

^{2/} A complete thermometer blank is a blank that has been processed up to but not including calibration, engraving, pigmentation, and testing. An incomplete thermometer blank is a blank that must be further processed before it can be calibrated, engraved, and so forth.

importation of finished thermometers was discouraged by the requirement that each finished instrument entering the United States had to be marked with the name of the country of origin. Blanks, on the other hand, did not have to be marked so long as their immediate containers indicated the origin of the blanks. The Bureau of Customs issued a ruling effective June 1, 1959, that resulted in practically all imports of complete thermometer blanks having to be marked with the country of origin by etching or other marking that would survive further processing. This ruling resulted in the cessation of imports of complete blanks during the years 1960-62 because it became more profitable for importers to bring in finished thermometers than to bring in blanks and finish them in the United States. Although most of the imports in 1960-62 consisted of finished thermometers, a significant number of incomplete blanks (not subject to country-of-origin marking) were imported for completion in the United States. In 1962 the Bureau of Customs rescinded its ruling of 1959 and the former marking practices were restored. Some complete blanks were imported in 1963 and 1964, but most of the thermometers entered in those years were already finished.

After the 1958 increase in duty, one thermometer-importing concern established a plant in the U.S. Virgin Islands to convert foreign-made blanks into finished thermometers. The increase in shipments of thermometers from the Virgin Islands since the establishment of the plant there has been almost as large as the decline in sales of thermometers made in the United States from imported blanks.

About nine-tenths of the clinical thermometers imported in recent years have been sold to hospital supply houses and the Federal Government, markets where the emphasis is on price competition. Domestic thermometers also are sold in large volume to hospital supply houses, but in 3 of the past 4 years the Federal Government has purchased the major share of its clinical thermometers from importers (table 3). Comparatively small quantities of imported thermometers are sold in the retail markets, where such nonprice competitive factors as national advertising, product prestige, packaging, casing, and marketing techniques are more important than price; domestic thermometers, therefore, tend to dominate the retail markets.

For several years Japanese producers have maintained a voluntary export quota for shipments of finished clinical thermometers and complete thermometer blanks to the United States and the U.S. Virgin Islands. For the fiscal year ending March 31, 1962, the quota for such shipments was set at 26,922 gross; for each of the fiscal years ending March 31, 1963, and March 31, 1964, it was 31,944 gross. The Japan Machinery Exporters' Association, which administers the quota, has estimated that the limitation for the fiscal years ending in 1965 and 1966 will be 33,300 gross and 34,722 gross, respectively. 1/

For both fiscal 1962 and 1963 the aggregate imports of complete blanks and finished thermometers into the United States and the Virgin Islands approximated the Japanese voluntary quota. Data are not available for 1964.

1/ The quota amounts were reported by importers' counsel.

For the fiscal year ending March 31, 1965, the Japanese producers established an export quota on unfinished blanks of 18,750 gross. The limitation for fiscal 1966 is also 18,750 gross. Although data on imports of unfinished blanks into the United States and the Virgin Islands are not available for the full fiscal year 1965, it appears that such imports will be within the quota.

Statistics furnished by a representative of the Japanese clinical thermometer industry show that during 1960-63 some 55 percent of the Japanese production of clinical thermometers was exported and that about 30 percent of such exports were shipped to the United States. During the first 10 months of 1964 about 50 percent of the Japanese production of thermometers was exported and about 40 percent of the exports were to the United States.

Shipments from the U.S. Virgin Islands

Since 1958, the sole producer in the Virgin Islands, the Vitco Corp., has shipped increasing quantities of finished clinical thermometers to the United States. * * *

Marketing and prices

Clinical thermometers are offered for sale by the domestic producers in a wide variety of brands and types of packaging, depending frequently on the type of sales outlet. The widest variety is offered for sale through retail outlets, where there is the greatest opportunity for non-price competition. Producers and importers sell such thermometers either directly to retailers or to druggist supply houses. In recent

years possibly 10 percent of the imported thermometers have been sold through such outlets. Thermometers sold for institutional use--those sold to hospital-supply houses and to Federal, State, and local Government agencies--must conform to rigid specifications. Sales to these outlets are made primarily on the basis of price; variations in type of thermometer and packaging are limited. Hospital-supply houses, in recent years, have purchased about half of the thermometers sold in the United States; they have taken about 40 percent of the thermometers produced domestically and 65 percent of those imported. Purchases by State and local Government agencies directly from producers and importers are of minor significance.

The Commission obtained data from individual domestic producers and from importers on their net selling prices, f.o.b. point of shipment in the United States. Prices were obtained for leading models or brands of finished thermometers, by principal outlets, on or about June 1 for the years 1959-64 * * *. Because a large part of the competition between domestic and imported thermometers occurs in the hospital-supply market, a comparison of prices in this market is most meaningful. The bulk of them are sold to specification and hence the various products are comparable with one another in type and quality. The following tabulation shows the average price per dozen thermometers sold to

hospital-supply houses by producers and by importers in 1959-64 as reported to the Commission: 1/

Year	1959	1960	1961	1962	1963	1964
Producers' price-----	\$4.55	\$4.53	\$4.35	\$4.31	\$4.52	\$4.36
Importers' price-----	3.70	3.64	3.64	3.72	3.53	3.54

* * * * *

Price data obtained from the domestic producers and importers on sales of thermometers to the Federal Government are not generally comparable because of the special circumstances surrounding such sales, including the Buy-American Act, surplus-labor-area differentials, the "set aside" program for the benefit of small business firms, and occasional sales at negotiated prices as distinguished from those made on the basis of bids by the producers and importers.

* * * * *

Employment

In 1963 and 1964 approximately 4,500 production and related workers were employed on all products in U.S. establishments engaged in the production of clinical thermometers (including blanks). About 17 percent of the man-hours of these workers was devoted to the production of thermometers. The man-hours worked by production and related workers

1/ The data shown are simple averages of the prices of each firm on June 1 of the year shown. The individual firms reported widely varying prices on each date, * * *.

making finished clinical thermometers and blanks in recent years are shown below:

	<u>Man-hours worked by production and related workers (1,000 man-hours)</u>
1959	1,303
1960	1,295
1961	1,244
1962	1,370
1963	1,616
1964	1,628

Although data on the number of thermometers produced per man-hour are not available, information obtained from the producers indicates that the output per man-hour has not risen significantly in recent years, despite the increased mechanization in several of the plants. The introduction of new machines * * * resulted in replacement of higher-paid skilled workers with lower-paid and relatively unskilled personnel. Thus, although there has been no significant reduction in the number of man-hours per unit of putput, appreciable savings in unit labor costs have occurred.

Profit-and-loss experience of domestic producers

Producers of finished clinical thermometers. Fourteen firms that produced clinical thermometers from domestic blanks supplied the Commission with usable profit-and-loss data on their thermometer operations for both 1962 and 1963. ^{1/} In 1963, these firms accounted for approximately 85 percent of the total sales of domestically produced finished

^{1/} Eight of the firms also furnished data for 1964.

thermometers. Their net sales of thermometers aggregated \$5.7 million in 1962 and \$5.8 million in 1963. The ratio of their aggregate net operating profits to net sales was 7.4 percent in 1962 and 6.3 percent in 1963. * * *

Data obtained by the Commission in its 1957-58 investigation show that the incorporated producers of finished clinical thermometers had aggregate net losses on their thermometer operations in each of the years 1953-56. Comparable profit-and-loss data were not available for the unincorporated producers of finished thermometers, but the data obtained did show that the average income of these producers exceeded their expenses by nearly \$8,000 per firm in each of the years 1953, 1954, and 1956, and by \$11,400 in 1955. Comparison of the financial experience of the producers in 1953-56 with that of the producers in recent years shows a substantial improvement in profitability for the industry as a whole.

* * * * *

Producers of thermometer blanks.—Eight firms, whose combined sales accounted for nearly all of the domestically produced blanks sold by independent blankmakers in 1962-64, furnished usable operating data for the years 1962 and 1963. Four of these firms also furnished data for 1964. The manufacture and sale of blanks accounted for all or nearly all of each firm's operations. Most of the blankmakers are small unincorporated concerns (partnerships and individual proprietorships) in which the owners perform much of the labor and most of the administrative duties. The net operating returns reported by the unincorporated

blankmakers represent the owners' total remuneration for productive labor, administrative services, and return on invested capital. * * *

Aggregate net sales by the 8 blankmakers amounted to \$298,000 in 1962 and \$340,000 in 1963. Their aggregate net returns amounted to \$45,000 in 1962 and \$56,000 in 1963--an average of less than \$6,000 per firm in 1962 and of \$7,000 per firm in 1963.

Data obtained in the escape-clause investigation in 1957-58 show that 14 blankmakers had total annual net sales of from \$459,000 to \$602,000 in 1954-56. The annual net returns to the 14 firms averaged from \$6,000 to \$8,000 per firm in 1954-56.

As indicated elsewhere in this report, approximately 12 blankmakers have ceased operations since 1957. Although total sales by all blankmakers have declined since 1954-56, average sales by the firms remaining in business have increased. Average net returns for the blankmakers, however, have not improved since 1954-56.

APPENDIX A

TABLES

Table 1.--Clinical thermometers, finished and unfinished:
U.S. rates of duty, 1930-65

(Percent ad valorem)				
Tariff Act of 1930	TSUS item	Description	Rate of duty <u>1/</u>	Effective date and origin
Par. 218(a)		Biological, chemical, metallurgical, pharma- ceutical, and surgical articles and utensils of all kinds, including all scientific articles, and utensils,***all the fore- going (except articles provided for in para- graph 217 or in subpara- graph (e)), finished or unfinished, wholly or in chief value of glass: Clinical thermometers, finished or un- finished-----	85	6-18-30 (statutory)
		Do-----	42.5	10-1-51 (GATT) <u>2/</u>
		Do-----	85	5-21-58 (Presidential Proclamation No. 3235)

		Thermometers,* * *, whether or not recording in- struments: Non-recording instru- ments: Thermometers:		
	711.35	Liquid-filled ther- mometers with the graduations on the tube or on a scale enclosed within an outer shell: Clinical-----	42.5	8-31-63 (TSUS) <u>2/</u> GATT rate tempor- arily suspended
	930.00	Do-----	85	8-31-63 (TSUS) Temporary escape clause rate

1/ Except on the products of designated Communist dominated or Communist controlled countries or areas which, since 1951, have been denied the benefit of trade agreement concessions.

2/ GATT signifies General Agreement on Tariffs and Trade; TSUS, Tariff Schedules of the United States.

Note.--Duty-free treatment is provided under TSUS item 832.00 for thermometers certified to the Commissioner of Customs by the authorized procuring agencies to be emergency war material; see note to table 3.

Table 2.--Clinical thermometers, finished: Apparent U.S. consumption, 1957-64

Year	Sales of finished thermometers virtually all of which were made from domestic blanks	Sales of imported finished thermometers; sales of thermometers made in the United States from imported blanks; and shipments to continental United States from the Virgin Islands	Apparent consumption
	Quantity (gross)		
1957-----	84,799	16,630	101,429
1958-----	97,652	21,027	118,679
1959-----	70,968	26,363	97,331
1960-----	79,114	30,844	109,958
1961-----	71,405	40,150	111,555
1962-----	82,852	34,362	117,214
1963-----	93,988	35,273	129,261
1964-----	93,206	39,132	132,338
	Percent of U.S. consumption		
1957-----	83.6	16.4	100.0
1958-----	82.3	17.7	100.0
1959-----	72.9	27.1	100.0
1960-----	72.0	28.0	100.0
1961-----	64.0	36.0	100.0
1962-----	70.7	29.3	100.0
1963-----	72.7	27.3	100.0
1964-----	70.5	29.5	100.0

Source: Data on shipments from the Virgin Islands compiled from statistics of the U.S. Bureau of the Census. Data on sales of imported finished thermometers and those made in the United States from domestic and imported blanks were submitted to the U.S. Tariff Commission by domestic producers and importers.

Table 3.--Clinical thermometers, finished: Contracts awarded by the U.S. Veterans Administration and the Defense Supply Agency to domestic producers and to importers, 1957-64

Item	1957	1958	1959	1960	1961	1962	1963	1964
Contracts awarded to--								
Domestic producers 1/-----gross--	8,122	7,032	3,040	3,346	1,934	5,231	2,414	1,874
Importers 2/-----do-----	-	1,066	1,564	3,982	8,437	7,438	1,339	10,752
Total-----do-----	8,122	8,098	4,604	7,328	10,371	12,669	3,753	12,626
Percent of total quantity awarded to--								
Domestic producers-----	100.0	86.8	66.0	45.7	18.6	41.3	64.3	14.8
Importers-----	-	13.2	34.0	54.3	81.4	58.7	35.7	85.2
Total-----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Firms that make finished clinical thermometers primarily from domestic blanks.

2/ Firms that either import finished thermometers or make them from imported blanks.

Source: Compiled from data submitted to the U.S. Tariff Commission by the Defense Supply Agency and the Veterans Administration.

Note.--Duty has been paid on imported thermometers purchased by the Veterans Administration and, although those purchased by the Defense Supply Agency are entered free of duty (see note to table 1), importers when bidding on contracts for the latter agency include in the amount of their bids a figure equal to the unpaid duty. The free entry of these thermometers, therefore, does not give the importers an advantage in bidding.

Table 4.--Clinical thermometers made predominantly from domestic blanks:
Sales in the United States by domestic producers, 1957-64

Year	Number of firms	Quantity	Value <u>1,000</u> dollars	Unit value <u>1/</u> Per gross
1957-----	20	84,799	6,702	\$79.03
1958-----	19	97,652	7,944	81.35
1959-----	19	70,968	5,930	83.56
1960-----	20	79,144	6,066	76.67
1961-----	20	71,405	5,239	73.37
1962-----	<u>2/</u> 18	82,852	6,345	76.84
1963-----	18	93,988	6,717	71.46
1964-----	18	93,206	6,509	69.84

1/ Calculated from the unrounded figures.

2/ Two firms discontinued operations after 1961.

Source: Compiled from information submitted to the U.S. Tariff Commission by the domestic producers.

Table 5.--Clinical thermometer blanks: Sales in the United States by domestic blankmakers, 1957-64

Year	Quantity	Value	Unit value ^{1/}
	<u>Gross</u>	<u>1,000 dollars</u>	<u>Per gross</u>
1957-----	15,533	488	\$31.44
1958-----	16,809	543	32.33
1959-----	16,170	534	32.99
1960-----	12,839	381	29.69
1961-----	11,501	356	30.92
1962-----	10,686	317	29.63
1963-----	12,345	374	30.26
1964-----	10,097	304	30.13

^{1/} Calculated from the unrounded figures.

Source: Compiled from data submitted to the U.S. Tariff Commission by blankmakers accounting for virtually all of the annual domestic output.

Table 6.--Clinical thermometers, finished and unfinished: U.S. imports for consumption, 1956-64

	: Reported by respondents : to Commission question- : naires		: Official statistics of : U.S. Department of Com- : merce	
	: Quantity : (Gross)	: Foreign value	: Quantity : (Gross)	: Foreign value
1956-----	: 18,628	: \$270,283	: 1/	: 1/
1957-----	: 21,300	: 307,848	: 1/	: 1/
1958-----	: 32,300	: 481,291	: 1/	: 1/
1959-----	: 34,282	: 497,255	: 25,224	: \$364,615
1960-----	: 21,025	: 325,863	: 23,075	: 343,514
1961-----	: 23,246	: 373,909	: 25,190	: 392,107
1962-----	: 23,828	: 416,551	: 26,546	: 484,633
1963-----	: 27,469	: 464,188	: 26,412	: 489,641
1964-----	: 27,721	: 495,250	: 33,206	: 554,637
	: :	: :	: :	: :

1/ Clinical thermometers were not separately classified in official statistics until May 1958.

Note.--The difference between the data reported by the respondents to Commission questionnaires and that reported by the U.S. Department of Commerce for the years indicated is attributable to (1) a time lag between actual importation and the recording of imports in official statistics, (2) breakage and pilferage, and (3) probable errors in counting. During the period 1959-64, the differences between the two sets of data have tended to offset one another.

