UNITED STATES TARIFF COMMISSION

CARBON STEEL WIRE ROD AND WIRE, AND BUILDING MESH, PIPE MESH, AND ROAD MESH MADE OF SUCH WIRE: WORKERS OF THE PORTSMOUTH, OHIO, PLANT OF DETROIT STEEL CORPORATION

Report to the President on Investigation No. TEA-W-100
under Section 301(c)(2) of the
Trade Expansion Act of 1962

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UNITED STATES TARIFF COMMISSION

Address all communications to
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C O N T E N T S

Note.--The whole of the Commission's report to the President may not be made public since it contains certain information that could result in the disclosure of the operations of an individual concern. 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.

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REPORT TO THE PRESIDENT

U.S. Tariff Commission,
August 27, 1971.

To the President:

In accordance with section 301(f)(1) of the Trade Expansion Act of 1962 (76 Stat. 885), the U.S. Tariff Commission herein reports the findings of an investigation, made under section 301(c)(2) of the act, in response to a petition filed on behalf of a group of workers.

On June 30, 1971, the Tariff Commission received a petition from the United Steelworkers of America for a determination of eligibility to apply for adjustment assistance on behalf of the former workers of the Portsmouth, Ohio, plant of the Detroit Steel Corp., a subsidiary of the Cyclops Corp. The Commission instituted an investigation (TEA-W-100) on July 9, 1971, to determine whether, as a result in major part of concessions granted under trade agreements, articles like or directly competitive with the carbon-steel wire rod and wire, and building mesh, pipe mesh, and road mesh made of such wire that are produced by the Detroit Steel Corp. at Portsmouth, Ohio, are being imported into the United States in such increased quantities as to cause, or threaten to cause, the unemployment or underemployment of a significant number or proportion of the workers of the Portsmouth plant.

Public notice of the investigation was given by posting copies of the notice at the office of the Commission in Washington, D.C., at the New York office, and by publication in the Federal Register of July 15, 1971 (36 F.R. 13179). No public hearing was requested and none was held.

The information in this report was obtained from the United Steelworkers of America and its Local Union No. 2116; from the Detroit Steel Corp., the Cyclops Corp., and other producers of wire rod, wire, and welded wire mesh; from trade associations; and from the Commission's files.

FINDING OF THE COMMISSION

On the basis of its investigation, the Commission 1/ finds unanimously that articles like or directly competitive with carbon-steel wire rod and wire, and building mesh, pipe mesh, and road mesh made of such wire produced at the Portsmouth, Ohio, plant of the Detroit Steel Corp. are not, as a result in major part of concessions granted under trade agreements, being imported into the United States in such increased quantities as to cause, or threaten to cause, the unemployment or underemployment of a significant number or proportion of workers at the plant.

1/ Vice Chairman Parker and Commissioners Leonard and Sutton did not participate in the decision.

Considerations Supporting the Commission's Finding

On June 30, 1971, the United Steelworkers of America filed a petition for adjustment assistance under section 301(a)(2) of the Trade Expansion Act of 1962 on behalf of former workers who had produced carbon-steel wire rod, wire, and welded wire mesh 1/ at the Portsmouth, Ohio, plant of Detroit Steel Corp., a subsidiary of Cyclops Corp. The Portsmouth plant manufactured the wire rod and wire products concerned, all from carbon steel produced within the plant, until August 1970, when each of these operations was terminated. Neither Detroit Steel Corp., nor any other subsidiary of the Cyclops Corp., now produce wire rod, wire, or welded wire mesh.

The Tariff Commission has frequently stated that the Trade Expansion Act of 1962 establishes four criteria to be met in order for an affirmative determination to be made. Those criteria are as follows:

(1) The imports in question must be increasing;

(2) The increased imports must be a result in major part of concessions granted under trade agreements;

(3) The workers concerned must be unemployed or underemployed, or threatened with unemployment or underemployment; and

(4) The increased imports resulting from trade-agreement concessions must be the major factor causing or threatening to cause the unemployment or under employment.

1/ Building mesh, pipe mesh, and road mesh, frequently referred to as prefabricated rectangular reinforcement mesh are, for the purpose of this report, referred to as welded wire mesh.

If any one of the above criteria is not satisfied in a given case, the Commission must make a negative determination. In the Commission's judgment, the fourth criterion has not been met in the case at hand and the Commission, therefore, has made a negative determination. Under the circumstances, the Commission has not been required to reach a conclusion respecting the first three criteria, and it has not done so.

The rod and wire mill, in which carbon-steel wire rod, wire, and welded wire mesh were produced at the Portsmouth plant, was constructed prior to 1900. Much of the heavy equipment therein is nearly 50 years old. Although equipment for the expansion or upgrading of the mill was purchased from time to time, none was purchased in recent years. Owing to a number of factors, including heavy expenses in the areas that produced the products accounting for the great bulk of the total output of the Portsmouth plant and to which Detroit Steel Corp. naturally gave higher priority, no major investments in the wire rod and wire related facilities were made after 1964. At the same time, other U.S. rod and wire mills were being modernized in order to provide heavier coil weights for their wire rod, improved quality, greater productivity, and other benefits. These investments resulted in other mills becoming more competitive with imports and with each other and accelerated the comparative obsolescence of the Portsmouth plant.

* * * * * * *

The decision by Detroit Steel Corp. to end its output of wire rod, wire, and welded wire mesh was made in 1970. Imports of all three products in that year were declining. Furthermore, a survey of several of the largest former wire customers of the firm revealed that the only reason these customers terminated their purchases of Detroit Steel Corp.'s wire was that Detroit Steel Corp. had ceased production, and that they have all, with one exception, switched to other domestic manufacturers, rather than to importers, to supply their requirements for wire. In the case of welded wire mesh, none of Detroit Steel Corp.'s former customers surveyed have purchased imported mesh. Together, wire and welded wire mesh accounted for * * * of the tonnage of Detroit Steel Corp.'s shipments of the articles in question in recent years.

In sum, it is the view of the Commission that increased imports resulting from trade-agreement concessions were not the major factor in causing or threatening to cause the unemployment or underemployment in the Portsmouth plant of the Detroit Steel Corp. Since the criteria established by the Trade Expansion Act of 1962 have not all been fully satisfied, the Commission must make a negative determination.

INFORMATION OBTAINED IN THE INVESTIGATION

Description and Uses

Wire rod

For tariff purposes, wire rod is a "coiled, semifinished, hot-rolled product of solid cross section, approximately round in cross section, not under 0.20 inch nor over 0.74 inch in diameter." Wire rod is produced from billets that have been heated to the appropriate rolling temperature and then passed through a series of reducing and forming rolls until the desired diameter is reached--usually from about 0.2187 inch to about 0.734 inch. The rod is laid in coils as it leaves the last stand of rolls. Substantial tonnages are shipped in the "as rolled" condition; some are pickled and lime coated, or oiled, to prevent or retard corrosion in transit and to facilitate drawing. Some wire rod is subjected to metallurgical treatments to improve the properties or appearance of the metal or to protect it against rusting, corrosion, or other deterioration. These treatments include annealing, tempering, rough coating, polishing, and burnishing.

Wire rod is used principally for the drawing of wire; it has few other uses, the most significant of which is for reinforcing concrete. The bulk of the steel rods used in the United States is of carbon steel (i.e., other than alloy steel) with a low or medium-low carbon content. The low-carbon rod (by weight up to 0.25 percent carbon)--the more important in terms of volume--is used in the production of wire for nails, barbed wire, various types of fencing and netting, and building mesh for reinforcing concrete. The low- and medium-low-carbon grades of rod, as well as the higher carbon and

alloy grades are used to make fine and specialty wire for springs, strand, rope and cable, and other wire products requiring special properties.

Wire

The term "wire," as it applies to steel, is defined in headnote 3(i) to part 2B of schedule 6 of the Tariff Schedules of the United States (TSUS) as "a finished, drawn, non-tubular product, of any cross-sectional configuration, in coils or cut to length, and not over 0.703 inch in maximum cross-sectional dimension." The term "wire" also includes a product of "solid rectangular cross section, in coils or cut to length, with a cold-rolled finish, and not over 0.25 inch thick and not over 0.50 inch wide." Round wire, that with a circular cross section, is by far the principal type of wire produced and the only type produced at the establishment involved in this investigation; subsequent discussion in this report is thus limited to round wire of carbon steel.

The wire here considered is produced by cold-drawing carbon-steel wire rod which was previously cleaned with acid, rinsed, and coated with lime, borax, or other suitable material. The coating material neutralizes any remaining acid and aids in the lubrication of the wire rod as it is drawn through one die, or continuously through a series of dies, each designed to further reduce the cross-sectional dimension of the wire. The cold reduction of steel by drawing increases its hardness and tensile strength but reduces its ductility. Accordingly, most wire cannot be drawn through a long series of dies

without intermediate heat treatment to relieve the stresses induced by the cold working and to restore ductility. By altering the drawing and heat-treating operations, wire of various mechanical properties can be made from wire rod of the same chemical composition. The most widely used heat-treating process used in wiredrawing is annealing, which renders the metal less brittle. Hardening and tempering treatments are widely used to obtain the characteristics necessary to avoid permanent deformations in wire used in springs and other products where it is subjected to great stress.

The applications of carbon-steel wire are many. Low-carbon steel may be used for the manufacture of such articles as welded wire mesh, nails, welding rods, garment hangers and wire fencing. Medium-carbon steel wire is, among other uses, utilized in the manufacture of auto seats and furniture-spring structures.

Medium- to high-carbon steel wire is often used in certain types of high voltage electrical transmission lines and steel cables. High-carbon steel wire is used for piano wire and wire saws for cutting quarry stone.

Welded wire mesh

Building mesh, pipe mesh, and road mesh, frequently referred to as prefabricated rectangular reinforcement mesh and hereinafter called welded wire mesh, consists of a series of parallel longitudinal wires welded at regular intervals to transverse wires. The welding of the reinforcing members is usually accomplished by an automatically controlled electrical process. A series of transverse and longi-tudinal wires are crossed and welded together by application of an

electric current which fuses the intersecting wires into a homogeneous section; no metal is added during the welding. All reinforcing members are permanently spaced in their proper positions. All welded wire mesh is of low-carbon steel.

In most modern operations the longitudinal wires are mechanically fed into the fabricating machine from large spools of wire at the head of the machine. Transverse wires, fed from spools at the side of the machine, are automatically carried across the width of the mesh--up to 18 feet wide for double-lane-highway construction--and then are cut, the operation resembling in all appearances the shuttlecock movement of a loom. The transverse wire is almost simultaneously welded in place. As the welded wire mesh moves out of the rear of the fabricator, it is either cut in lengths and stacked, or rolled in large rolls for ease of handling at the construction site.

Recent advances in galvanizing technology for the auto industry has renewed interest in low-cost, corrosion-resistant steel, with wire mesh being no exception. One large U.S. steel producer has come on line with a welding process capable of welding galvanized wire. The intended market for such welded wire mesh is the precast concrete building facade. It is hoped that this innovative process will provide a reinforcing mesh that will not discolor the precast concrete slabs as the steel rusts and leaches out through the concrete. Other products used for reinforcing concrete are reinforcing bars (usually deformed) and, very recently, carbon-steel wire rod welded into mesh.

U.S. Tariff Treatment

Wire rod

The provisions in the Tariff Act of 1930 for carbon-steel wire rod, originally classified under paragraph 315 of that act, were not significantly changed with the adoption of the Tariff Schedules of the United States in 1963. The separate tariff classifications are based on whether or not the rod had been tempered, treated, or partly manufactured and on unit values. The current rates provided for carbon-steel wire rod in schedule 6 of the TSUS reflect concessions granted by the United States under the General Agreement on Tariffs and Trade (GATT); the rates in items 608.70 and 608.73--0.1 cent and 0.2 cent per pound, respectively--have been in effect since July 1, 1963, and those in items 608.71 and 608.75--0.25 cent and 0.375 cent per pound, respectively--since June 30, 1958, as shown in the table on the following page. 1/

1/ Pursuant to Presidential Proclamation No. 4074, effective Aug. 16, 1971, these trade-agreement rates were modified by the temporary imposition of an additional cumulative duty of 10 percent ad valorem or less, as provided for in new subpt. C to pt. 2 of the appendix to the TSUS. A preliminary interpretation of the new provisions indicates that virtually all imports under items 608.70, 608.71, and 608.75 became dutiable at the column 2 rates--0.3 cent, 0.6 cent, and 0.6 cent, per pound, respectively; and the imports under item 608.73, at 0.2 cent per pound plus 10 percent ad valorem.

U.S. rates of duty applicable to carbon-steel wire rod dutiable under TSUS items 608.70, 608.71, 608.73, and 608.75, June 18, 1930-Aug. 15, 1971

(Rates in cents per pound)

Effective date	Authority	Rate of duty on carbon-steel wire rod--					
		Not tempered, not treated, and not partly manufactured, valued per pound--			Tempered, treated, or partly manufactured, valued per pound--		
		Not over 4¢ (TSUS item 608.70)		Over 4¢ (TSUS item 608.71)	Not over 4¢ (TSUS item 608.73)		Over 4¢ (TSUS item 608.75)
		Not over 2-1/2¢	Over 2-1/2¢, not over 4¢		Not over 2-1/2¢	Over 2-1/2¢, not over 4¢	
June 18, 1930	Tariff Act of 1930.	0.3¢	0.3¢	0.6¢	0.55¢	0.55¢	0.85¢
May 1, 1935	Trade agreement, Belgium.	0.2¢	-	-	0.5¢	-	-
Aug. 5, 1935	Trade agreement, Sweden.	-	0.3¢ (bound against increase)	0.6¢ (bound against increase)	-	0.55¢ 1/	0.85¢ 2/
Jan. 1, 1948	GATT	0.125¢	-	-	0.375¢	0.55¢ 1/	0.85¢ 2/
Apr. 30, 1950	GATT	-	0.15¢	0.3¢	0.25¢	0.275¢	0.425¢
June 30, 1956	GATT	-	0.14¢	0.28¢	-	0.265¢	0.405¢
June 30, 1957	GATT	-	0.13¢	0.27¢	-	0.255¢	0.395¢
June 30, 1958	GATT	-	0.125¢	0.25¢	-	0.25¢	0.375¢
July 1, 1962	GATT	0.11¢		-	0.225¢		-
July 1, 1963	GATT	0.1¢		-	0.20¢		-
Aug. 31, 1963	Tariff Classification Act of 1962.	0.1¢		0.25¢	0.2¢		0.375¢

1/ Of which, 0.3¢ was bound against increase.
2/ Of which, 0.6¢ was bound against increase.

The ad valorem equivalents of the specific rates of duty applicable to carbon-steel wire rod in 1931 and 1970, computed on the basis of imports in those years are shown in the table below.

Carbon-steel wire rod: Ad valorem equivalents of 1930 and 1970 rates of duty, based on imports in 1931 and 1970

TSUS item or predecessor thereof	Ad valorem equivalent (percent) of--			
	1930 rate, based on imports in--		1970 rate, based on imports in--	
	1931	1970	1931	1970
608.70	10.8	7.9	3.6	2.6
608.71	12.1	10.8	5.0	4.5
608.73	38.2	26.9	15.0	10.0
608.75	14.8	13.0	7.7	5.7

From the table above, it is evident that in addition to reductions in the specific rates through trade-agreement negotiations, the "incidence of protection" of the rates has declined because of the increase in unit value of rod from 1931 to 1970. For example, the rate applicable to rod of the kind classified under item 608.70 has been reduced by 67 percent, but the ad valorem equivalent (or the effective incidence of protection) has declined by 76 percent.

Wire

Carbon-steel round wire was originally classified under paragraphs 316(a) and 317 of the Tariff Act of 1930 and was dutiable at various rates, depending on wire diameter, value per pound, finish, and end use. Additional duties were also provided for wire of the type

classified under paragraph 316(a) which had been galvanized or coated with metal. When the TSUS was implemented on August 31, 1963, the many competing tariff provisions were consolidated into two provisions (items 609.40 and 609.42), based solely on wire diameter and with rates developed from estimated weighted averages of the existing trade-agreement rates. The adoption of the TSUS eliminated the additional duty for round wire that was coated and also eliminated all considerations of end use. For round wire 0.060 inches or more in diameter and containing over 0.25 percent by weight of carbon (in 609.42), the estimated weighted average of the pre-TSUS rates resulted unintentionally in a substantial rate reduction. Accordingly, effective December 7, 1965, the TSUS was amended by the Tariff Schedules Technical Amendments Act of 1965 (Public Law 89-241), which established items 609.41 and 609.43 to replace item 609.42; item 609.40 was not changed. No changes in rates of duty resulted from the Kennedy Round of trade-agreement concessions. The history of rates applicable to round wire of carbon steel are shown in the following table. 1/

1/ Pursuant to Presidential Proclamation No. 4074, effective Aug. 16, 1971, the trade-agreement rates were modified by the temporary imposition of an additional cumulative duty of 10 percent ad valorem or less, as provided for in new subpt. C to pt. 2 of the appendix to the TSUS. A preliminary interpretation of the new provisions indicates that the imports under items 609.40 and 609.43 became dutiable at 18.5 percent ad valorem, and the imports under item 609.41, at the column 2 rate of 1.25 cent per pound.

U.S. rates of duty applicable to carbon-steel round wire dutiable under TSUS items 609.40, 609.41, and 609.43, June 18, 1930-Aug. 15, 1971

(Rates in percent ad valorem or cents per pound)

Effective date	Authority	Rate of duty on carbon-steel round wire in diameter--			
		Under 0.060 inch (TSUS item 609.40)	0.060 inch or more and containing, by weight--		
			Not over 0.25% carbon (TSUS item 609.41)		Over 0.25% carbon (TSUS item 609.43)
			Baling and fencing wire	Other	
June 18, 1930	Tariff Act of 1930.	25% 1/	0.5¢ 2/	0.75¢, 1.25¢, or 1.50¢ 3/	25% 1/
Aug. 5, 1935	Trade agreement, Sweden.	20% 1/	-	-	20% 1/
Jan. 1, 1948	GATT	-	0.25¢ 2/	0.375¢, 0.625¢, or 0.75¢ 3/	-
Apr. 30, 1950	GATT	10% 1/	-	-	10% 1/
June 30, 1956	GATT	9% 1/	-	0.35¢, 0.59¢, or 0.70¢ 3/	9% 1/
June 30, 1957	GATT	-	-	0.33¢, 0.56¢, or 0.67¢ 3/	-
June 30, 1958	GATT	8.5% 1/	-	0.30¢, 0.53¢, or 0.625¢ 3/	8.5% 1/
Aug. 31, 1963	Tariff Classification Act of 1962.	8.5%	0.3¢		
Dec. 7, 1965	Tariff Schedules Technical Amendments Act of 1965.	-	0.3¢		8.5%

1/ Rate applicable to wire (except baling and fencing wire), valued over 6¢ per pound. See also footnote 3.

2/ Rate applicable to all baling and fencing wire regardless of unit value or composition.

3/ Rates applicable to wire, valued not over 6¢ per pound (except baling and fencing wire), depending on diameter--the smaller the diameter, the higher the rate. The highest rate was also applicable to round wire under 0.060 inch in diameter regardless of unit value.

The ad valorem equivalent of the various 1930 rates applicable to carbon-steel round wire based on imports in 1931 ranged from about 15 to 57 percent and averaged 23.5 percent (weighted by imports at each rate). The ad valorem equivalent of the specific rate (0.3 cent per pound) in effect in 1970, based on imports in 1970 was 3.7 percent; the average rate for all imports of carbon-steel round wire in 1970 was 6.4 percent ad valorem. While trade-agreement concessions undoubtedly accounted for the bulk of the difference between the average 1930 rate (23.5 percent) and the average 1970 rate (6.4 percent), other factors that influenced the difference (either negatively or positively) were (1) elimination of additional duty for coating, (2) consolidation of the applicable provisions, (3) increased unit value of imports, and (4) changes in product mix.

Welded wire mesh

Imports of welded wire mesh under the Tariff Act of 1930 were classified under the residual provisions of paragraph 397. With the adoption of the TSUS on August 31, 1963, welded wire mesh became dutiable under item 642.80, a residual provision for cloth, gauze, fabric, screen, netting, and fencing. Pursuant to successive concessions granted by the United States under the GATT, the rate was reduced from 45 percent ad valorem in 1930 to 11 percent in 1971; the

final reduction under the Kennedy Round concession (to 9.5 percent ad valorem) will go into effect on January 1, 1972, as shown in the following table. 1/

U.S. rates of duty applicable to welded wire mesh dutiable under TSUS item 642.80, June 18, 1930-Jan. 1, 1972

Effective date	Rate of duty	Authority
	Percent ad valorem	
June 18, 1930	45	Tariff Act of 1930
Jan. 1, 1948	22.5	GATT
June 30, 1956	21	GATT
June 30, 1957	20	GATT
June 30, 1958	19	GATT
Aug. 31, 1963	19	Tariff Classification Act of 1962
Jan. 1, 1968	17	GATT
Jan. 1, 1969	15	GATT
Jan. 1, 1970	13	GATT
Jan. 1, 1971	11	GATT
Jan. 1, 1972	9.5	GATT

U.S. Producers

Three general types of U.S. producers are operating in the steel-wire-based industrial segment covered in this investigation: (1) Integrated and semi-integrated steel concerns that produce wire rod, wire, and sometimes welded wire mesh from steel produced within their

1/ Pursuant to Presidential Proclamation No. 4074, effective Aug. 16, 1971, this trade-agreement rate was modified by the temporary imposition of an additional cumulative duty of 10 percent ad valorem, as provided for in new subpt. C to pt. 2 of the appendix to the TSUS. Accordingly, imports under item 642.80 became dutiable at 21 percent ad valorem.

own firm; (2) the so-called independent wiredrawing firms that produce wire and often mesh from rod (or, less frequently, billets) purchased from other firms--either domestic or foreign; and (3) small independent makers of welded mesh that use wire purchased from others. The last group is relatively small in number.

Roughly 30 concerns operate facilities for rolling wire rod; three integrated steel producers probably account for more than half of the domestic capacity.

According to the U.S. Department of Commerce, there were 240 carbon-steel-wiredrawing establishments in the United States in 1967, up from 200 firms in 1963. Approximately 50 of the 240 are operated by either integrated or semi-integrated steel producers. Industry spokesmen indicate that the total number of carbon-steel-wiredrawing firms probably has not changed significantly since 1967.

The Wire Reinforcement Institute estimates that 40 concerns produce welded wire mesh in the United States, 18 of which are major operations accounting for 85 percent of the production during the first part of 1971.

Most wire rod, wire, and welded wire mesh are marketed within relatively well-defined sales territories determined by the economies of productivity, capacity, transportation costs, marketing-accounting practices, and geographic location of competitors. Wire rod, wire, and welded wire mesh produced at Detroit Steel were marketed for the most part within a 200- to 300-mile radius of Portsmouth, Ohio.

U.S. Consumption

Wire rod

Apparent consumption of wire rod in the United States declined from the 1968 high of 6.5 million tons to 6.4 million tons in 1969 and 6.0 million in 1970 (table 1 in the appendix). Overall consumption has been relatively constant since 1965, averaging 6.2 million tons per year in 1965-70. In reality the decline in consumption in recent years was probably not as great as indicated by the data; consumption data for 1968 are somewhat inflated because of an inventory buildup by consumers in anticipation of a strike in the basic steel industry. For the same reason, consumption for 1969 may be somewhat understated owing to consumers' return to normal inventories. Nevertheless, the general softening of the economy and a decline in major highway construction as the interstate highway system nears completion have adversely affected consumption in recent months.

Wire

Apparent annual U.S. consumption of carbon-steel wire has remained comparatively stable since 1965 (table 2), the greatest annual consumption--5.8 million tons--occurring in 1968, partially as a result of the inventory buildup cited above with respect to wire rods. Consumption amounted to about 5.3 million tons in 1970; average usage since 1965 has been 5.4 million tons per year.

The long-term upward trend of consumption should continue in years to come, as the state of the economy improves and as new uses for wire are developed.

Welded wire mesh

Estimated apparent annual consumption of welded wire mesh in the United States held fairly constant for the period 1965 through 1970, averaging about 675,000 tons per year (table 3). Consumption in 1968, the peak year, amounted to 732,000 tons. Consumption in 1970 amounted to 684,000 tons.

The use of reinforced concrete for construction of buildings, highways, runways, and the like will probably provide an increasing market for reinforcing materials. Recent product development indicates that welded wire mesh may not be the sole beneficiary of the larger market; mesh produced directly from wire rod, particularly in the heavier sizes for highway and airport construction, will be likely to inhibit the growth of consumption of wire mesh.

U.S. Production, Shipments, and Exports

Wire rod

Average annual production of carbon-steel wire rod in the United States from 1966 to 1970 was relatively stable at approximately 5 million tons per year (table 1). The highest production during this period amounted to 5.3 million tons, in 1969. It should be noted that 1969 was the first year of the voluntary restraints adopted by Japan and the European Economic Community (EEC) on exports of steel products to the United States; it was also a year (as was 1970) of unusually high demand for steel in other free-world nations, particularly those in Europe. Production in 1970 was down approximately 180,000 tons, or 3.4 percent, from the 1969 high.

Because of the integrated nature of all (or virtually all) producers of wire rod, normally only about one-fourth of annual domestic production is sold to others (table 1-A); the remainder is consumed by the producer in the production of wire and wire products. Table 1-A reveals a significant increase in producers' shipments in 1969 and 1970 both in terms of quantity and in relation to total output. It also indicates that in 1969 and 1970 the domestic industry regained a substantial part of the open market consumption of rods. These improvements in the position of the domestic industry in relation to imports are probably due in large measure to voluntary restraints on exports to the United States on the part of Japan and the EEC which began January 1, 1969, and to the high demand for steel in other free-world markets.

Exports have been a minor factor in the wire rod market (tables 1 and 5). For the reasons noted above, exports increased from 9,000 tons in 1968 to 92,000 tons in 1969 and to 137,000 tons in 1970.

Department of Commerce statistics on exports of wire rod in the first quarter of 1971 indicate that exports may total only 30,000 tons for the full year.

Wire

Annual estimated production of carbon-steel wire averaged approximately 4.8 million tons in 1966 and 1967 (table 2). Production reached an estimated high of 5.2 million tons in 1968 but declined thereafter and amounted to 4.8 million tons in 1970.

U.S. producers' shipments of wire, like those of wire rod, are substantially less than output because of "in-house" consumption for the production of such articles as nails; welded wire mesh; barbed wire; all types of wire fencing, netting, and screening; garment hangers; bale ties; and welding wire. Table 2-A shows a generally declining level in annual shipments of wire, both in terms of quantity and in relation to total output. The data also indicate a generally increasing penetration of the open market by imports.

Exports appeared to trend slightly downward from 1965 to 1970 and amounted to only two- to three-tenths of a percent of domestic production, averaging 14,000 tons per year for the period. The major export markets for domestic carbon-steel wire are Canada and South Vietnam.

Welded wire mesh

Average annual production of welded wire mesh from 1965 to 1970 was an estimated 662,000 tons per year. Estimated production trended upward from 625,000 tons in 1965 to a high of 715,000 tons in 1968 (tables 3 and 4); production during 1970 is estimated at 670,000 tons. Annual shipments of welded wire mesh approximate production. Estimated production data were reported to the Commission by the Wire Reinforcement Institute.

Data on exports of welded wire mesh are not reported separately in official statistics but are believed to be negligible.

U.S. Imports

Wire rod

Annual U.S. imports of carbon-steel wire rod have increased many fold since the 1950's and in 1965 exceeded 1 million tons for the first time (table 7). During these years sizable increases in annual imports reflected in part heavy purchases by U.S. consumers from foreign sources because of extended or anticipated strikes in the basic steel industry; this is particularly evident in 1959, 1962, and 1965. Imports declined from 1.3 million tons in 1965 to 1.1 million in 1966 and 1.0 million in 1967. In anticipation of an almost certain steel strike, imports of wire rod increased by almost 50 percent in 1968, when they amounted to 1.5 million tons. As a consequence of the combined effect of the adoption by producers in Japan and the EEC of voluntary

restraints on steel exports to the United States and the almost unprecedented demand for steel in other world markets, the volume of imports of wire rods into the United States declined to 1.2 million tons in 1969 and 975,000 tons in 1970. Because of a U.S. strike threat and increased availability of steel as a result of slackening world demand, imports of wire rod during January-June 1971 entered at an annual rate of 1.5 million tons.

Prior to 1959, the consensus was that most U.S. consumers of steel were hesitant to take a chance on, or go to the trouble of using, foreign steel. It would appear that during the 116-day steel strike in 1959 many of these consumers had no choice but to use foreign steel or cease production temporarily; apparently many found foreign steel to be acceptable in terms of quality and price despite the inconvenience of importing.

Imports supplied 23.6 percent of total U.S. consumption of wire rod in 1968; they supplied 54.4 percent of the open-market consumption (i.e., consumption of purchased rod) during the same year. In other recent years (since 1965) imports have supplied 16 to 19 percent of total consumption and 39 to 46 percent of open-market consumption.

Japan has been the principal foreign source of imports of wire rod for many years. France, West Germany, Belgium, and the United Kingdom are also significant suppliers. In very recent years aggregate imports from the EEC have far exceeded those from Japan (table 6).

Wire

U.S. imports for consumption of carbon-steel wire increased steadily from 1965 to 1968--from 398,000 to 538,000 tons--but then declined to 461,000 tons in 1970 (table 2). The ratio of annual imports to consumption averaged 8.4 percent during the 6-year period and was 8.7 percent in 1970. Like imports of wire rod, imports of wire supplied a somewhat larger share of open-market consumption in the United States; this ratio increased from 12.6 percent in 1965 to 17.0 percent in 1968 and 1969 and was 16.6 percent in 1970. Japan is the major supplier of imports of carbon-steel wire to the United States with Belgium the second largest supplier (table 8).

The long-term trend of imports of carbon-steel wire since 1954 has been generally upward (table 9). In 1958, imports first exceeded 100,000 tons; in 1959, 200,000 tons; in 1964, 300,000 tons; and in 1966, 400,000 tons. In 1968, imports reached the record high of 538,000 tons. Like imports of carbon-steel wire rod, imports of wire increased substantially in the strike year of 1959.

Welded wire mesh

U.S. imports of carbon-steel welded wire mesh declined generally from 1966 to 1970 and averaged 16,000 tons per year in 1965-70. Imports amounted to 21,000 tons in 1966 and declined to 14,000 tons in 1970 (tables 10 and 11). Annual imports as a percent of apparent consumption averaged 2.4 percent for the 6-year period (table 3).

In 1966-70 an average of approximately 45 percent of the total imports of welded wire mesh came from Belgium. Canada and the Netherlands were the only other countries to export significant tonnages of welded wire mesh to the United States in recent years. As with wire rod and wire, the United States is a net importer of welded wire mesh.

Detroit Steel Corp.

The corporation

Detroit Steel Corp., with headquarters in Detroit, Mich., was incorporated in Michigan on March 9, 1923. In 1936 the corporation purchased the entire capital stock of Craine-Schrage Steel Co. of Detroit. The Craine-Schrage Steel Co. became the Detroit Mill Division for cold-rolled steel strip with a second cold-strip operation in New Haven, Conn. In 1944 Detroit Steel merged with Reliance Steel Corp., of Reliance, Ohio--a warehousing and distribution company. This merger was formulated to expand Detroit Steel's channels of distribution.

On January 1, 1950, Detroit Steel Corp. acquired the Portsmouth Steel Corp. of Portsmouth, Ohio, for 1.6 million shares of Detroit Steel, based on an exchange offer of 1.55 Detroit Steel shares per Portsmouth Steel share. The Portsmouth Steel Corp. became the steel-producing division of Detroit Steel.

On May 20, 1964, Detroit Steel Corp. acquired the net assets of Tex-Tube, Inc., of Houston, Tex., for 200,891 shares of Detroit Steel

common stock. Tex-Tube, Inc., became the Tex-Tube Division for the production of pipe and tube.

Detroit Steel subsidiaries and other interests consisted of the Empire Coal Co., of Portsmouth, Ohio (subsidiary), and a 29-percent interest in the Cleveland Cliffs Iron Co.

Detroit Steel Corp. was acquired by Cyclops Corp. of Pittsburgh, Penn., on November 12, 1970. (This took place after Detroit Steel decided to cease production of rod, wire, and wire products.) Cyclops formulated this corporate marriage to acquire facilities for producing hot- and cold-rolled strip steel and the Detroit Steel distribution system.

Following the acquisition by Cyclops Corp., Detroit Steel's Portsmouth plant was joined with Cyclops' Mansfield, Ohio, plant to form the Empire Steel Division. The Detroit Strip Division was formed by the combination of the New Haven, Conn., and Detroit, Mich., plants; both are high- and low-carbon cold-rolled-strip mills. The Tex-Tube Division, Houston, Tex., became a single-plant division of Cyclops. The three remaining divisions of Cyclops were owned and operated by Cyclops prior to acquiring Detroit Steel Corp.

The Portsmouth Works

The Portsmouth Works is an integrated steel mill in New Boston, a suburb of Portsmouth, Ohio, with headquarters in Portsmouth. The plant is situated on 190 acres of land adjoining the Ohio River, access to which was in part the basis for the location of the mill in southern Ohio at the turn of the century. From Portsmouth, steel

could be shipped economically as far as St. Louis, and raw materials for making steel, such as coal and limestone, could be brought in by river from the South, while iron ore, produced nearby, was brought in by river, rail, or both. Some small quantities of steel are shipped today via the Ohio River; however, most steel shipments from the plant are now carried by truck or rail.

The Portsmouth Works consists of a byproduct coke plant, a coal chemical and benzol plant, two blast furnaces, and five open-hearth furnaces. Steel-processing facilities consist of rolling mills for semifinished steel and for hot- and cold-rolled sheet and strip; the rolling mills for the production of wire rod, the wiredrawing equipment, and the machinery for the production of welded wire mesh were sold following Detroit Steel's decision to discontinue production of these products.

The plant and equipment for producing carbon-steel wire rod, wire, and welded wire mesh, covering 31.9 acres--of which 13 acres were under roof--at the Portsmouth Works were quite old in comparison with some of the large steel mills in operation in the United States today. Several of the buildings where wiredrawing was done were constructed prior to the turn of the century, * * *.

* * * * * * *

When the Commission's staff visited the Portsmouth plant, it was found that all of the equipment had been sold and that workmen were in the process of tearing out the wire-rod, wire, and welded-wire-mesh

equipment for rebuilding, scrap, and resale. * * *. The buildings and land were not sold and will be utilized at a later date for expansion and warehousing facilities.

* * * * * * *

In the Statement of Reasons submitted to the U.S. Tariff Commission by Portsmouth Division management, reference is made * * * to a Tariff Commission finding under the Antidumping Act of 1921. The investigation, No. AA1921-27 of June 1963, the report on which was entitled Hot-Rolled Carbon-Steel Wire Rods from Belgium, resulted in a negative finding; Detroit Steel Corp. was one of the complainants in this antidumping investigation.

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Employment.--

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* * *. According to the Department of Labor the rate of unemployment in Portsmouth, Ohio, was 5.6 percent of the work force in August 1970. The most recent data on unemployment in the area--for April 1971--indicate that the rate has risen to 8.7 percent of the work force.

Prices.--U.S. producers' base prices 1/ for carbon-steel wire rod and manufacturers' bright wire are published in Iron Age magazine. These prices were reviewed for the period January 1960 to July 1971. There were no comparable published data on prices for welded wire mesh. U.S. producers state that their prices were virtually all as published with allowances for freight, and so forth. Prices were studied at the

1/ Not including "extras" for small quantities, special packing, or marking.

four different cities believed to account for the greatest volume of sales of domestically produced rod and wire. The trend of prices at other points including Portsmouth, Ohio, generally paralleled those that were covered, although for no product were prices uniform throughout the country or even within the middle west geographic area.

A study of carbon-steel wire-rod prices indicates that they were basically unchanged from 1960 to 1967 but trended upwards consistently throughout the 1967-71 period. The carbon-steel wire-rod base price was $6.40 per hundredweight from January 1960 through January 1967 but had increased to $8.15 per hundredweight by June 1971. Price increases occurred in each of the years 1967 through 1971.

Prices of manufacturers' bright wire remained relatively unchanged at about $8.00 per hundredweight from 1960 through 1968, with the exception of downward readjustments in two of the cities in 1964 and 1965, bringing the prices in those two areas in line with other steel-marketing areas. Base prices were increased in 1969, in January 1970, and most recently in areas including Portsmouth, Ohio, in May 1970. They have remained stable since that time at $9.05 per hundredweight in most areas.

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APPENDIX A

Statistical Appendix

Table 1.--Carbon-steel wire rod: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1965-70

Year	U.S. production	Imports	Exports	Apparent consumption	Ratio of imports to consumption
	Short tons	Short tons	Short tons	Short tons	Percent
1965	4,957,373	1,253,795	16,762	6,194,406	20.2
1966	5,146,000	1,107,107	11,278	6,241,829	17.7
1967	4,653,000	1,027,046	5,613	5,674,433	18.1
1968	4,951,000	1,522,880	9,109	6,464,771	23.6
1969	5,294,906	1,184,454	91,888	6,387,472	18.5
1970	5,114,698	975,435	136,736	5,953,397	16.4

Source: Shipments and inventory, American Iron and Steel Institute; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table 1-A.--Carbon-steel wire rod: Shipments by U.S. producers and apparent open-market U.S. consumption, 1965-70

Year	Shipments		Apparent open-market consumption	Ratio of imports to open-market consumption
	Quantity	Ratio to production		
	Short tons	Percent	Short tons	Percent
1965	1,279,270	25.8	2,516,303	49.8
1966	1,308,560	25.4	2,404,389	46.0
1967	1,221,603	26.3	2,243,036	45.8
1968	1,284,177	25.9	2,797,948	54.4
1969	1,565,454	29.6	2,658,020	44.6
1970	1,639,154	32.0	2,477,853	39.4

Source: Shipments, American Iron and Steel Institute; consumption derived from import and export data shown in table 1.

Table 2.--Carbon-steel wire: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1965-70

Year	U.S. production	Imports	Exports	Apparent consumption	Ratio of imports to consumption
	Short tons	Short tons	Short tons	Short tons	Percent
1965	5,017,468	397,988	14,866	5,400,590	7.4
1966	5,055,881	416,864	18,604	5,454,141	7.6
1967	4,596,289	409,722	10,995	4,990,016	8.2
1968	5,236,462	537,964	10,689	5,763,737	9.3
1969	5,173,852	530,247	17,080	5,687,019	9.3
1970	4,822,250	461,074	13,046	5,270,278	8.7

Source: Production data represent consumption of carbon-steel wire rod, less allowance for scrap loss during processing, and consumption other than for drawing wire; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table 2-A.--Carbon-steel wire: Shipments by U.S. producers and apparent open-market U.S. consumption, 1965-70

Year	Shipments 1/		Apparent open-market consumption	Ratio of imports to open-market consumption
	Quantity	Ratio to production		
	Short tons	Percent	Short tons	Percent
1965	2,776,245	55.3	3,159,367	12.6
1966	2,723,710	53.9	3,121,970	13.4
1967	2,448,601	53.3	2,847,328	14.4
1968	2,641,322	50.4	3,168,597	17.0
1969	2,602,016	50.3	3,115,183	17.0
1970	2,328,055	48.3	2,776,083	16.6

1/ Includes small quantities of shaped wire.

Source: Shipments, American Iron and Steel Institute; consumption derived from import and export data shown in table 2.

Table 3.--Welded wire mesh: U.S. production, imports for consumption, and apparent consumption, 1965-70 1/

Year	U.S. production 2/	Imports	Apparent consumption	Ratio of imports to consumption
	Short tons	Short tons	Short tons	Percent
1965	625,000	20,587	645,587	3.2
1966	640,000	21,231	661,231	3.2
1967	680,000	13,802	693,802	2.0
1968	715,000	16,680	731,680	2.3
1969	640,000	12,024	652,024	1.8
1970	670,000	14,356	684,356	2.1

1/ Data on exports are not separately reported in official statistics; however, exports are believed to be negligible.

2/ Data provided by the Wire Reinforcement Institute (see table 4).

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 4.--Welded wire mesh: Production by members of the Wire Reinforcement Institute and estimated production by nonmembers, 1965-70

(In short tons)

Year	Member production 1/	Estimated 2/ production of nonmembers	Total
1965	538,000	87,000	625,000
1966	500,000	140,000	640,000
1967	417,000	263,000	680,000
1968	327,000	388,000	715,000
1969	274,000	366,000	640,000
1970	238,000	432,000	670,000

1/ Figures based on 23 member companies.

2/ Nonmember production figures (for 8 companies) estimated from records of earlier years when some of these nonmembers were still members of the institute and/or from industrial knowledge of production in the United States.

Source: Wire Reinforcement Institute, Washington, D.C.

Table 5.--Carbon-steel wire rod: U.S. exports of domestic merchandise, by principal markets, 1966-70

Market	1966	1967	1968	1969	1970
	Quantity (short tons)				
South Vietnam	3,474	3,336	8,475	51,803	47,156
West Germany	-	-	-	10,764	39,810
Nigeria	-	-	-	3,535	11,513
Turkey	-	-	-	11,015	10,803
Norway	-	-	-		8,513
All other	7,805	2,277	635	14,772	18,941
Total	11,279	5,613	9,110	91,889	136,736
	Value (1,000 dollars)				
South Vietnam	276	271	1,452	6,279	5,774
West Germany	-	-	-	1,113	4,825
Nigeria	-	-	-	4,212	1,271
Turkey	-	-	-	1,703	1,342
Norway	-	-	-	-	888
All other	1,611	791	141	1,909	2,317
Total	1,887	1,062	1,593	15,216	16,417

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 6.--Carbon-steel wire rod: U.S. imports for consumption, by principal sources, 1966-70

Source	1966	1967	1968	1969	1970
	Quantity (short tons)				
Japan	587,419	423,766	496,014	411,975	357,961
France	203,820	191,470	306,929	259,156	223,021
West Germany	117,133	202,124	275,745	187,801	161,440
Belgium	90,468	114,490	121,749	85,292	28,086
United Kingdom	30,038	37,629	152,471	109,586	72,189
All other	78,229	57,567	169,972	130,644	132,738
Total	1,107,107	1,027,046	1,522,880	1,184,454	975,435
	Value (1,000 dollars)				
Japan	50,426	37,491	45,763	40,290	40,936
France	14,636	13,640	21,969	20,897	22,008
West Germany	9,392	15,556	22,007	16,467	17,627
Belgium	6,896	8,682	9,187	6,887	2,966
United Kingdom	3,638	4,132	12,692	9,455	6,844
All other	9,140	6,526	17,441	14,075	16,237
Total	94,128	86,027	129,057	108,071	106,618

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 7.--Carbon-steel wire rod: U.S. imports for consumption, 1930-70

(In short tons)

Year	Quantity	Year	Quantity
1930	3,385	1951	119,445
1931	7,331	1952 2/	44,013
1932	8,533	1953	63,557
1933	14,351	1954	38,964
1934	10,983	1955 2/	46,191
1935 1/	17,421	1956 1/	62,657
1936	19,133	1957 1/	53,064
1937	15,468	1958 1/	180,348
1938	5,371	1959 2/	445,586
1939	11,071	1960	404,376
1940	3,947	1961	445,629
1941	58	1962 1/3/	634,921
1942	53	1963 1/	783,789
1943	12	1964	933,129
1944	2	1965 3/	1,253,795
1945	2,197	1966	1,107,107
1946	6,018	1967	1,027,046
1947	5,922	1968 3/	1,522,880
1948 1/	6,475	1969	1,184,454
1949 1/	5,630	1970	975,435
1950 1/	101,315		

1/ Indicates year in which 1 or more of the applicable tariff rates were reduced.

2/ Year in which steel strike occurred (1949-70 only).

3/ Year of labor negotiations; anticipated strike avoided (1962-70 only).

Source: Imports compiled from official statistics of the U.S. Department of Commerce; strike data from the National Office, United Steelworkers of America.

Table 8.--Carbon-steel wire: U.S. imports for consumption, by principal sources, 1966-70

Source	1966	1967	1968	1969	1970
	Quantity (short tons)				
Japan	218,851	207,808	250,982	285,299	266,923
Belgium	114,082	109,271	122,725	120,357	95,106
United Kingdom	19,650	23,594	41,482	38,389	25,538
West Germany	23,667	24,678	38,349	21,774	23,092
Canada	4,348	4,712	12,024	11,758	15,968
All other	36,266	39,660	72,402	52,670	34,447
Total	416,864	409,722	537,964	530,247	461,074
	Value (1,000 dollars)				
Japan	32,171	31,029	36,527	43,706	46,383
Belgium	19,447	18,476	21,145	21,105	22,519
United Kingdom	5,042	5,465	8,365	8,318	6,627
West Germany	5,010	4,715	7,174	4,770	5,381
Canada	884	943	2,507	2,441	3,423
All other	6,635	7,207	12,886	8,966	7,450
Total	69,189	67,835	88,604	89,306	91,783

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 9.--Carbon-steel wire: U.S. imports for consumption, 1931-70

(In short tons)

Year	Quantity	Year	Quantity
1931	2,611	1951	26,870
1932	2,058	1952 2/	9,107
1933	3,348	1953	17,464
1934	2,738	1954	40,580
1935 1/	4,241	1955 2/	40,151
1936	5,347	1956 1/2/	49,580
1937	5,031	1957 1/	70,049
1938	1,834	1958 1/	133,017
1939	2,678	1959 2/	233,625
1940	888	1960	204,018
1941	37	1961	169,062
1942	13	1962 3/	216,913
1943	51	1963 1/	258,627
1944	2	1964	366,010
1945	21	1965 3/	397,988
1946	207	1966	416,864
1947	37	1967	409,722
1948 1/	10	1968 3/	537,964
1949 2/	2,305	1969	530,247
1950 1/	17,814	1970	461,074

1/ Indicates year in which 1 or more of the applicable tariff rates were reduced.

2/ Year in which steel strike occurred (1949-70 only).

3/ Year of labor negotiations; anticipated strike avoided (1962-70 only).

Source: Imports compiled from official statistics of the U.S. Department of Commerce.

Table 10.--Welded wire mesh: U.S. imports for consumption, by principal sources, 1966-70

Source	1966	1967	1968	1969	1970
	Quantity (short tons)				
Belgium	11,184	5,998	5,955	6,233	6,330
Canada	919	837	6,147	3,845	6,039
Netherlands	1,461	2,576	1,307	1,055	1,377
West Germany	452	237	80	238	264
United Kingdom	85	30	18	83	224
All other	7,130	4,124	3,173	570	122
Total	21,231	13,802	16,680	12,024	14,356
	Value (1,000 dollars)				
Belgium	1,420	891	1,008	1,043	1,188
Canada	136	122	914	620	1,058
Netherlands	271	475	365	349	561
West Germany	50	40	40	40	74
United Kingdom	16	9	5	14	68
All other	818	461	379	109	66
Total	2,711	1,998	2,711	2,175	3,015

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 11.--Welded wire mesh: U.S. imports for consumption, 1947-70

(In short tons)

Year	Quantity 1/	Year	Quantity 1/
1947	120	1959 3/	49,166
1948 2/	24	1960	27,855
1949 3/	177	1961	17,927
1950	3,439	1962	21,176
1951	1,015	1963	14,701
1952 3/	302	1964	12,256
1953	330	1965	20,587
1954	756	1966	21,231
1955 3/	1,206	1967	13,802
1956 2/3/	3,962	1968 2/	16,680
1957 2/	11,379	1969 2/	12,024
1958 2/	25,337	1970 2/	14,356

1/ Prior to 1962 only the value of imports reported was reported by the U.S. Department of Commerce; quantity data for these years were estimated on the basis of such values.

2/ Indicates year in which 1 or more of the applicable tariff rates were reduced.

3/ Year in which steel strike occurred (1949-70 only).

Source: Imports compiled from official statistics of the U.S. Department of Commerce.