UNITED STATES TARIFF COMMISSION

TRANSMISSION TOWERS AND PARTS; CERTAIN WORKERS OF THE SHIFFLER PLANT, PITTSBURGH, PA. AND OF THE MAYWOOD PLANT, LOS ANGELES, CALIF., OF THE AMERICAN BRIDGE DIVISION, UNITED STATES STEEL CORPORATION

Report to the President
on Investigations No. TEA-W-9 and TEA-W-10
Under Section 301(c)(2) of the Trade Expansion Act of 1962

TC Publication 298
Washington, D. C.
November 1969

UNITED STATES TARIFF COMMISSION

Glenn W. Sutton, *Chairman*

Penelope H. Thunberg

Bruce E. Clubb

Will E. Leonard, Jr.

Herschel D. Newsom

George M. Moore

Willard W. Kane, *Acting Secretary*

Address all communications to

United States Tariff Commission

Washington, D.C. 20436

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 would 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.

REPORT TO THE PRESIDENT

U.S. Tariff Commission
November 3, 1969

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 results of its investigations, TEA-W-9 and TEA-W-10, made under section 301(c)(2) of that act, in response to workers' petitions for determination of eligibility to apply for adjustment assistance. A request for the investigations was filed with the Commission on September 4, 1969, by Mr. Meyer Bernstein, International Affairs Director, United Steelworkers of America, Washington, D.C. on behalf of a group of workers of two plants (the Shiffler plant at Pittsburgh, Pennsylvania and the Maywood plant at Los Angeles, California) of the American Bridge Division, United States Steel Corporation engaged in the fabrication of transmission towers and parts. In effect, Mr. Bernstein alleged that increased imports of transmission towers and parts resulting from tariff concessions were the major factor in causing 102 workers to be laid off at the Shiffler plant in November 1968. He cited the same reason for the reduction (247 in 1966 to 27 in 1969) in the number of production and maintenance workers engaged in fabricating transmission towers and parts at the Maywood plant.

The Commission instituted the investigations on September 10, 1969. Public notices of the receipt of the petitions and the institution of the investigations were given by publication of the notices in the Federal Register (34 F.R. 177, September 16, 1969). The petitioners did

not request a public hearing and no other interested party filed such a request within the 10-day filing period after the notices of the institution of the investigations were published in the Federal Register.

The information in this report was obtained principally through field trips, from discussions with officials of Local 1579 and Local 2058, from data submitted to the Commission by the domestic fabricators of transmission towers and parts and by public and private utilities which have purchased these articles from foreign sources in recent years, and from the Commission's files.

Finding of the Commission

On the basis of its investigations, the Commission finds (Commissioner Leonard dissenting) 1/ that as a result in major part of concessions granted under trade agreements, articles like or directly competitive with transmission towers and parts produced by the American Bridge Division Plants of the United States Steel Corporation located in Pittsburgh, Pennsylvania, and Los Angeles, California, are being imported into the United States in such increased quantities as to cause unemployment or underemployment of a significant number or proportion of the workers of such plants.

1/ The dissenting opinion of Commissioner Leonard is set forth beginning on page 15.

Considerations Supporting the Commission's Finding

Statement of Chairman Sutton and Commissioner Newsom

The evidence assembled by the Commission in these two investigations shows that imports of transmission towers are increasing; that the increase in imports is a result in major part of concessions granted in trade agreements; that workers of the Shiffler and Maywood plants of the U.S. Steel Corporation are unemployed or underemployed; and that increased imports have been the major factor causing such unemployment or underemployment.

In the absence of official statistics on U.S. imports of transmission towers, the Commission obtained data from private and public utilities on their purchases of transmission towers from foreign suppliers. On the basis of data respecting the tonnages contracted for and deliveries made under the contracts, it is apparent that imports of transmission towers are increasing and will continue to increase as deliveries are made under existing contracts.

Trade-agreement concessions have resulted in a 65-percent reduction in the import duty (from 20 percent ad valorem to 7 percent ad valorem) on the tariff classification under which 85 to 90 percent of the components of transmission towers are imported into the United States. The remaining imports enter under several other classifications, on most of which the duty reductions have been even greater. The average contract price (usually delivered to the site of construction) of

foreign-made transmission towers and parts during the period from January 1, 1967, to August 31, 1969, was $303 per ton, compared with $347 per ton for domestically fabricated towers during approximately the same period. Were it not for the duty reductions, the prices of imported towers would be higher by $30 to $40 per ton unless the foreign suppliers were willing to bid contracts at prices substantially below those currently received. Such a differential is generally more than the difference in the average price per ton received by U.S. Steel Corporation and the average price per ton received by foreign suppliers. Buy American Regulations require federal agencies (they are substantial purchasers of foreign towers) to procure materials of domestic origin unless the bid or offered price of such material is more than 6 percent above the bid or offered price of like materials of foreign origin. In the case of towers this amounts to about $15 to $18 per ton. The $30 to $40 per ton differential resulting from duty reductions, coupled with Buy American Regulations leave little doubt that not only U.S. Steel Corporation but other domestic fabricators could compete more effectively with foreign suppliers in the U.S. market were it not for the tariff concessions.

The data assembled by the Commission show that domestic producers' shipments and their share of the U.S. market have declined steadily since 1966 despite an increasing domestic demand. Reduced contract awards to the petitioners' firm resulted in a production cutback and a subsequent layoff of 101 workers at the Shiffler plant in November 1968. The production cutback and reduction in the number of workers at the

Maywood plant was more severe--from 262 workers in 1966 to 44 in July 1968; production and employment ceased entirely from August to November 1968. Operations resumed in December 1968, but the number of workers employed during 1969 in the transmission tower shop at the Maywood plant has averaged only 25. These workers have been employed for 32 hours a week in the tower shop at their full rates of pay, but work the remaining 8 hours in another department of the plant at a reduced rate of pay.

The evidence obtained by the Commission indicates that U.S. Steel Corporation curtailed its production of transmission towers largely as a result of increased imports. 1/ The Shiffler and Maywood plants are the only facilities of U.S. Steel Corporation in which transmission towers and parts are fabricated. The Maywood plant is relatively new while the Shiffler plant has been largely automated in recent years. The Corporation has been in the business of designing, engineering, and fabricating towers for decades; its expertise in producing high quality products is well known throughout the world. As one of two integrated fabricators of transmission towers and parts, the U.S. Steel Corporation is highly competitive with other domestic fabricators. The corporation is often the lowest domestic bidder on tower projects; yet it has lost increasing numbers of tower contracts to foreign suppliers in recent years. The

1/ U.S. Steel Corporation certified to the Commission that "It is the considered judgment of our business people who are responsible for the manufacturing and selling of galvanized steel transmission tower components that the exceptionally low level of operations at our new mill at Maywood and the reduced operations at Shiffler are primarily, if not exclusively, the result of imports."

towers fabricated by U.S. Steel Corporation are comparable to those fabricated abroad. Even though some elements of design may differ, U.S. Steel Corporation and the foreign supplier are bidding on the same structural requirements, using the same quality steel and the same ASTM specifications.

In view of the foregoing, we conclude that the criteria provided for in section 301(c)(2) of the Trade Expansion Act of 1962 have been met and that the petitioning workers in these two cases are eligible to apply for adjustment assistance.

Statement by Commissioners Thunberg, Clubb and Moore

On September 4, 1969, the United Steelworkers of America-AFL-CIO filed a petition for adjustment assistance under Section 301(a)(2) of the Trade Expansion Act of 1962 1/ on behalf of the workers at the Shiffler (Pittsburgh, Pa.) and Maywood (Los Angeles, Calif.) plants of the United States Steel Corporation. Both plants produced transmission towers. The Shiffler plant reduced, and the Maywood plant virtually ceased, the production of towers, causing workers covered by the petitions to become unemployed. It is alleged that the unemployment resulted from the inability of the plants to compete with imported towers, the lower prices of which were made possible by trade agreement concessions. Accordingly, the petitioners request trade adjustment assistance for the unemployed workers as provided for in section

---

1/ Sec. 301(a)(2) of the Trade Expansion Act of 1962 reads as follows:

> A petition for a determination of eligibility to apply for adjustment assistance under chapter 2 may be filed with the Tariff Commission by a firm or its representative, and a petition for a determination of eligibility to apply for adjustment assistance under chapter 3 may be filed with the Tariff Commission by a group of workers or by their certified or recognized union or other duly authorized representative.

301 of the Trade Expansion Act. 2/ We find that all requirements of the statute have been met and that the workers are therefore eligible for the relief requested.

As noted in a companion decision, Buttweld Pipe, Inv. No. TEA-W-8 filed today and in previous Commission decisions, 3/ the statute provides four requirements for relief:

(1) Imports must be increasing;

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

(3) The workers producing the like or directly competitive article must be underemployed or unemployed, or threatened with underemployment or unemployment; and

---

2/ Sec. 301(c)(2) of the Trade Expansion Act of 1962 reads as follows:

> In the case of a petition by a group of workers for a determination of eligibility to apply for adjustment assistance under chapter 3, the Tariff Commission shall promptly make an investigation to determine whether, as a result in major part of concessions granted under trade agreements, an article like or directly competitive with an article produced by such workers' firm, or an appropriate subdivision thereof, is being imported into the United States in such increased quantities as to cause, or threaten to cause, unemployment or underemployment of a significant number or proportion of the workers of such firm or subdivision.

3/ Broomcorn, Inv. No. TEA-I-12 (March 1968) at 3; Eyeglass Frames, Inv. No. TEA-I-10 (October 1967) at 10-11; Watches, Watch Movements and Parts of Watch Movements, Inv. No. TEA-I-7 (October 1964) at 4; Umbrellas and Parts of Umbrellas (except handles), Inv. No. TEA-I-6 (Sept. 1964) at 3.

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

We believe that each of these requirements has been met with respect to the workers at both the Maywood and Shiffler plants.

The facts relating to increased imports of, and to trade agreement concessions on, transmission towers are the same in both cases. Our statements in these cases have therefore been consolidated.

Increasing Imports

The first requirement of the statute is that imports must be increasing. Because transmission towers are imported in parts under a variety of TSUS items, and many other articles are also listed under these TSUS numbers, it is not possible to determine from official statistics the precise amount of transmission towers imported in any given year. Nonetheless, field work and analysis by the Commission staff, including discussions with Customs officials and experts in the field, indicate that the following conclusions are warranted:

(1) United States consumption of transmission towers has been increasing in recent years.

(2) United States production of transmission towers has steadily declined since 1966.

(3) Imports have increased in recent years.

(4) Imports are likely to continue to increase in the future because contracts signed with foreign suppliers in the first eight months of 1969 call for delivery of a greater tonnage than in any other previous year.

(5) The price of foreign towers delivered to the site is much lower than the price of domestically produced towers. The difference is usually approximately $50 per ton ($284 per ton versus $332 per ton).

On the basis of the foregoing, we are satisfied that imports have been increasing.

In Major Part

The second requirement of the statute is that the increasing imports must be a result in major part of trade agreement concessions. As noted in the Buttweld Pipe decision filed today, in order to determine whether this requirement has been met, we need only ask whether imports of transmission towers would be at substantially their present level had it not been for the aggregate of concessions granted since 1934. If they would not, then the increased imports have been a result in major part of trade agreement concessions.

Information obtained in the investigation indicates that this requirement of the statute has been satisfied. Eighty-five to ninety per cent of the

total tonnage of tower imports entered under TSUS Item 609.84 (angles, beams, and channels). The rate of duty on this item has been reduced as follows:

1930	20%
1935	15%
1948	10%
1951	7.5%
1968	7.0%

This 65 per cent reduction in ad valorem duty since 1930 amounts to $30 to $40 per ton at present market prices, or up to four-fifths of the difference between the price of imported and domestic towers.

Price is not the only consideration in the sale of transmission towers, but it is of sufficient importance that, if imported towers were deprived of four-fifths of their price advantage, it is certain that the volume of imports would not have increased to their present levels. Accordingly, it is clear that this section of the statute has been satisfied.

Unemployment

The third requirement is that the petitioners must be underemployed or unemployed, or threatened with either.

Maywood Plant

The United States Steel Maywood plant is a multiproduct facility producing structural shapes, water pipe, steel plates and other products in

addition to transmission towers. About 25 per cent of the employees were engaged in tower production in January 1968, when a severe contraction of the tower production began. Employment was reduced to zero in August-November 1968 and since then production and employment have been at a very low level. 4/

Shiffler Plant

The Shiffler plant is devoted almost exclusively to the production of transmission towers. Production at that plant continued to grow through 1967, but in the last half of 1968 it began a decline which continued through the first half of 1969. This decline in production was accompanied by a layoff of 101 employees in November 1968, but since then employment at the plant has been relatively stable. It is these 101 laid off workers who are the subject of the union's petition.

It is thus clear that the third requirement of the statute has been met with respect to the employees at both the Maywood and Shiffler plants.

4/ Actual figures of employment in tower production were as follows:

1968		1969	
Jan.	176	Jan.	25
March	135	March	23
June	74	June	24
Sept.	0	Aug.	25

Major Factor

Finally, we must determine whether the concession-generated imports were a major factor in causing the unemployment complained of at the Maywood and Shiffler plants. As explained in the Buttweld Pipe decision, this requirement is met if the unemployment would not have occurred had it not been for the increased imports.

As is true in almost every case, the part that imports play in the difficulties of the individual firm or plant are inevitably intertwined with other contributing factors. The employer here contends, however, that increased imports are the primary, if not the exclusive cause of the unemployment at these two plants. We agree. The trade agreement concessions resulted in increasing imports at highly competitive prices. Although the domestic market for transmission towers has grown rapidly, domestic production has decreased. Finally, the domestic employer found it necessary to reduce production of transmission towers at Shiffler and Maywood.

The trade agreement concessions and the resulting lower prices made possible by imported towers resulted in the unemployment of the workers at the two plants involved. We believe the Trade Expansion Act of 1962

adjustment assistance provisions were enacted to insure that workers would not be required to bear the full brunt of the benefits derived from tariff concessions.

Since the situation found here is precisely that envisioned in the Act, we find that the workers are eligible to apply for adjustment assistance.

Dissenting Opinion of Commissioner Leonard

New ground is broken by a Commission majority in these and a companion investigation (TEA-W-8) reported on today. For the first time since the enactment of the Trade Expansion Act of 1962, a majority of the Tariff Commission has made an affirmative finding under one of the adjustment provisions of that statute. In the instant investigations (in this opinion we shall treat as one the two investigations instituted on behalf of certain workers at the Shiffler Plant, Pittsburgh, Pennsylvania, and the Maywood Plant, Los Angeles, California, both operated by the American Bridge Division, United States Steel Corporation) a majority has found groups of workers eligible to apply for adjustment assistance - trade readjustment allowances, training, and relocation allowances.

When it is recalled that in the seven years since the enactment of the Trade Expansion Act, never in thirteen industry investigations, seven firm investigations, nor six worker investigations had the Commission made an affirmative determination of eligibility for tariff adjustment or adjustment assistance, the landmark nature of today's decisions is clear. I cannot make these determinations unanimous not because I do not want to see adjustment assistance made viable, but because I find the facts in the instant investigations do not permit affirmative determinations under the statute.

The requirements of the statute are set forth in the statement of Commissioners Thunberg, Clubb, and Moore. Following their sequence of requirements, I need go no further than the second, "that the increasing

imports must be a result in major part of trade agreement concessions," to find that the statute has not been satisfied and therefore an affirmative determination is not justified.

There were concessions granted under trade agreements on transmission towers and on parts used in assembling transmission towers. It is probable (though not conclusive since U.S. imports of transmission towers and parts are not separately reported in official statistics) that imports of the articles in question increased. But the causation necessary, that the trade agreement concessions in major part caused the imports to increase, is lacking in the instant investigations.

The pre-concession rates, that is the rates established by the Tariff Act of 1930, for a transmission tower and for all of its constituent parts are naturally higher than current rates and it is true that the total reductions in duties since the beginning of the trade agreements program, not just the most recent reductions, must be considered. But it is a mistake to apply a mathematical test to the statute as the majority in these investigations seems to do and to say that, if the total reduction in duty since 1930 is equal to a significant part of the price differential between the domestic and the imported articles and if imports are not at substantially the same level as they were before the concessions, the one is the result of the other.

The error of applying the mathematical test is apparent in the instant investigations when it is observed, for example, that, for the item (angles, beams, and channels) which accounts for 85 to 90 percent of the tonnage of transmission towers imported into the United States, the duty was reduced

from its 1930 rate of 20 percent ad valorem in stages to 7.5 percent by 1951 and the only reductions since then are to 7 percent, January 1, 1968, and to 6.5 percent, scheduled for January 1, 1970. While the duty had remained virtually the same since 1951, imports of angles, beams, and channels (as for other transmission tower parts) have--according to incomplete data gathered by the Commission--increased only in recent years, that is, perhaps since 1966. To say that the increase in imports was caused in major part by duty reductions that took place at least fifteen years previously taxes one's credulity too much. However, a majority of the majority (Commissioners Thunberg, Clubb, and Moore) attempts to bridge that credulity gap by saying that if imports would be at substantially the same level as they were prior to any concessions, if they would not have increased since 1930, "but for the concessions" (the language quoted is from Buttweld Pipe, but is incorporated by reference in their statement), "the increased imports are a result 'in major part' of the aggregate of concessions."

This interpretation of the statute--first expressed as separate opinions in Eyeglass Frames (TEA-I-10) and in Barber Chairs (TEA-I-11, TEA-F-7 and 8)--had never gained majority acceptance before today. I regret that it has gained that acceptance today because I believe that to interpret the statute thusly is to read out of the statute the words "in major part."

I do not desire to cite precedent for precedent's sake alone, but I happen to think that the treatment of "in major part" in the prevailing Commission opinions heretofore issued is correct.

In each of the Commission's earlier reports relating to 26 investigations under the TEA, the Commissioners supporting the prevailing view have been sensitive to the fact that identical criteria are employed by the Congress in each of the three kinds of investigations under sections 301(b), 301(c)(1), and 301(c)(2), respectively. The key words "in major part" and "the major factor" apply equally to each kind of determination, and the Commission has in the past made it clear that these key words are to be given the same construction in each case. The Commission also recognized the fact that these two key terms, which were a primary object of consideration by the Congress, were used for the purpose of tightening the criteria for escape-clause relief, and to make such relief available only in exceptional circumstances. The Congress adopted the same criteria for the newly authorized adjustment assistance for firms and workers. It wanted to bestow sparingly any adjustments due to increased imports inspired by trade concessions, whether those adjustments be tariffs for industries or other forms of assistance for firms or workers. With the passage of time, it has become generally accepted that the statutory criteria for obtaining relief under section 301(b) or (c) of the TEA are designedly stringent, and that, for those who would liberalize either or both subsections, the proper recourse is to the Congress for consideration of new criteria. 1/

1/ In this connection, it is to be noted that the need for a change in the statute was discussed at length in hearings held in 1968 before the Committee on Ways and Means, House of Representatives. In that connection, the then Special Representative for Trade Negotiations, Ambassador Roth, stated:

> "* * * [In the act of 1962] the Administration and the Congress * * * agreed to set up such a program [for adjustment assistance] related to increased imports caused by tariff concessions. This has not proven to be workable * * * * It is therefore proper to attempt to meet this need * * * with a liberalization of the statutory criteria." Hearings Before the Committee on Ways and Means, Ninetieth Congress, Second Session, Foreign Trade and Tariff Proposals, pt. 2, p. 559.

Subsequently, Ambassador Roth submitted to the President his report dated January 14, 1969, entitled Future United States Foreign Trade Policy, in which he proposed legislative relaxation of the present criteria for relief in section 301(b) and (c) of the TEA. He stated in part (page 42) as follows:

> The adjustment assistance provisions of the Trade Expansion Act of 1962 were designed to provide various forms of assistance to workers dislocated by imports--readjustment allowances, relocation expenses, and retraining opportunities. Unfortunately, the statutory criteria for adjustment assistance proved to be too strict, and no petition for assistance was approved.
>
> These criteria for adjustment assistance to workers require the Tariff Commission to determine: first, whether tariff concessions are the major cause of increased imports and, second, whether such increased imports are the major cause of unemployment or underemployment of a significant number or proportion of the workers in the firm or subdivision concerned.* In no case since the Act was passed has the Tariff Commission found that the first requirement--that tariff concessions should be the major cause of increased imports--was satisfied.
>
> This record raises a serious doubt whether it is possible to segregate tariff concessions, many of which go back for 30 years or more, as the major cause--that is, the cause greater than all other causes combined--of increased imports. The one test relating tariff concessions to increased imports that was successfully applied by the Tariff Commission was included in the original escape-clause provision in 1951. This required that tariff concessions should be responsible in whole or in part for the increased imports. In practice, the Tariff Commission assumed in every case that tariff concessions played at least some part in bringing about increased imports.

1/ Continued.--

This experience under the two escape-clause tests strongly suggests that, if a viable program of adjustment assistance to workers and firms--as well as relief for industries--is to be established, there is little point in retaining any statutory requirement that increased imports be causally linked to past tariff concessions. At the same time, since any increase in imports is attributable in part to the trade policy of the U.S. Government, it is appropriate that the U.S. Government assume an obligation to render assistance when increased imports cause economic injury. Moreover, in terms of the individuals involved, the more important issue is not the cause but the effects of increased imports.

The Senate inserted the words "in major part" in the House-passed language of the 1962 bill to assure that concessions were not to be construed as having to be the sole cause of increased imports. But if the Senate had wanted an easily satisfied test of causation between concessions and increased imports they might have continued the language of section 7 of the Trade Agreements Extention Act of 1951, as amended--i.e., "in whole or in part"--to describe concessions as a factor in increasing imports. Instead, the words "in major part" were chosen.

No matter how you attempt to quantify it, "in major part" has a meaning of importance, of significance, of great impact. It is not a phrase which when applied in comparing causes or factors means that the concessions are not any more important or significant than any other cause or factor nor does it imply that the impact of the concessions need only be added to all the other causes or factors to "tip the scale" or "break the camel's back." And yet it is this type of interpretation that the two statements of the majority advance by explicitly or implicitly adopting "but for" reasoning. (It is to be assumed, since the language applicable to workers, firms and industries is identical in this regard, that the same test of "in major part" will be applied by these members of the Commission to adjustment assistance petitions on behalf of firms and indeed to "escape clause" petitions on behalf of industries with all of the attendant repercussions.)

The statute inevitably involves a comparison of causes or factors. The extent to which causes might be important relative to each other can be expected to vary between investigations. But if the Commission is not

to determine all relevant factors--which one or ones is it to omit from consideration in order to ensure a finding which will not frustrate relief? If in its analysis of the relevant causes and their relation to each other, the Commission is unable to find a basis for an affirmative determination, that presumably is the will of the Congress.

The data gathered by the Commission in these investigations is sparse and does not facilitate complete analysis of all the significant factors that may have contributed to a difference in price between imported and domestic transmission towers and parts, and, thus, to increased imports. Nonetheless, when considered in proper historical perspective, the connection between the duty reductions, which all but ended in 1951, and the imports, which apparently began to pick up in 1966, is not substantial. It will be noted that the Maywood plant in Los Angeles was constructed, and the Shiffler plant in Pittsburgh was refurbished and modernized, long after the major tariff concessions had been granted. If important consideration is to be given to tariff concessions as a factor in causing increased imports--as I believe the words "in major part" compel--then the statutory requirement is not satisfied by the facts in these investigations. If one of the statute's requirements is not satisfied, it is unnecessary to examine the other requirements, for they all must be met in order to make an affirmative determination.

Therefore, it is my determination that the workers in the instant investigations are not eligible to apply for adjustment assistance because I find negatively on the proposition that as a result in major part of concessions granted under trade agreements, transmission towers and parts are being imported into the United States in such increased quantities as to cause, or threaten to cause, unemployment or underemployment of a significant number or proportion of these workers.

Information Obtained in the Investigation

Description and uses

Transmission towers are designed and fabricated to support transmission wire and cables through which high voltage electric power (generally in potentials of 66 kilovolts (KV) to as much as 765 KV) is transmitted between electrical generating stations and substations. Transmission towers carrying high voltage lines are used throughout the United States and are an integral part of this country's vast system of electricity distribution. Most transmission towers are specially designed to carry the particular stresses and loads which will be imposed on the tower by wind and ice loads, by the pulls exerted by the wires and cables when attached to the tower structure, and by other forces acting upon the tower. Towers may support single, double, or multiple circuits. Sixty-five KV, 138 KV, and 230 KV lines are normally double circuit lines. The in-line towers for these lines average about 5, 7, and 10 tons per tower, respectively. 1/ The 345 KV line can be either double or single circuit. The double circuit in-line towers weigh about 12 tons each while the single circuit in-line towers weigh approximately 6 tons each. The 500 KV (about 14 tons each) and 765 KV (about 23 tons each) are single circuit towers. When the line angles off and requires a bevel, a heavier tower (10 to 30 percent heavier, depending upon the angle of the line) is required. Dead-end, river crossing, or long-span towers are normally considerably heavier than in-line towers.

1/ All quantities in this report are expressed in short tons (2,000 pounds).

The number, size, and maximum assumed working tensions in the conductors, ground-wire cables, and wires, the assumed wind and ice loading conditions on the cables, and the angle turns will not only affect the design but the amount of material (as indicated above) necessary to put into the towers to withstand the specified loads. Generally, towers are spaced so that there are about five per mile, however, the number may vary because of the terrain.

The steel products (virtually all of which are made of carbon steel) fabricated into tower components are angles, plates, channels, and beams, which are subject to the specifications called for by ASTM (American Society for Testing Materials) A-7, A-36, A-440, A-441, and A-572 and bolts and accessories which are manufactured to the specifications of ASTM A-394 and A-325. A few stainless towers (all of which are believed to be of domestic origin) have been fabricated.

The sizes of angles used in transmission towers vary from 1-1/2 inches by 1-1/2 inches by 1/8 inch in thickness to 8 inches by 8 inches by 1-1/8 inches in thickness and from 6 inches to 35 feet in length. Plates vary from 3/16 inch to 3 inches in thickness and from 4 inches by 4 inches to 6 inches by 6 inches. Beams and channels range from 6 to 15 inches in depth and usually from 6 inches to 10 inches in length. Bolts usually range from 5/8 inch in diameter by 1-1/4 to 3 inches in length to 3/4 inch diameter by 1-1/2 to 4 inches in length; however, on large towers the bolts may be 7/8 inch diameter by 2 to 4 inches in length. Where bolts are used for steps in place of steel rungs, the bolts may be 8 inches or longer.

Generally, all of the steel pieces including the bolts and nuts that go into transmission towers are galvanized. The galvanized coating of these products is subject to ASTM A-123. The galvanized coating amounts to 70 to 100 pounds of zinc per ton of finished product. The specification requires a coating of not less than 2 ounces of zinc per square foot of product. A few domestic consumers of transmission towers have purchased towers which called for "COR-TEN" or similar steel, that is, an all-weather, high-strength, low-alloy steel which requires no galvanizing.

Although electrical transmission towers are also fabricated from wood, prestressed concrete, and aluminum, steel towers are generally used in the higher voltage power transmission lines.

After receiving steel products from the steel mills, the steel is fabricated from detailed drawings. The fabricating process consists of cutting the steel materials to length and design, (i.e., square cuts, bevel cuts, etc.) by means of shearing, flamecutting, or sawing; punching or drilling holes in the various components to accommodate the bolts; milling the heels of angles where lap splices are necessary; making templets as required; bending and welding as required; lay out, if required; assembling for "proof of fit" as deemed necessary; and shop inspection. After pickling and galvanizing, the material is sorted, bundled, and shipped according to shipping instructions from the customer.

Both domestic and foreign fabricators ship disassembled towers in their component form in either piece or tower lots to the job site to be erected by erection contractors. The concrete base or foundation, if

required, is supplied by the erecting contractor. The purpose of the foundation is to prevent tower uplift due to wind conditions and to bear the load of the tower and its attendant wires. A tower is affixed to the ground by one of three methods, the most prevalent method is to dig a large hole in the ground with the tower subsequently connected to a large steel base plate or earth grillage situated in the bottom of the hole. They are also secured to the ground by steel stubs connected to a reinforced concrete base with the concrete being poured by the on-site tower erector, or by steel anchor bolts fastened to the tower where it rests upon a solid rock base. Both domestic and foreign tower fabricators supply steel stubs, anchor bolts, base plates, and earth grillage as needed. Concrete footings are not normally required.

U.S. tariff treatment

Transmission towers and parts are classifiable under several TSUS item numbers depending upon whether they are imported as complete towers or made up into structural units, or as individual or similar pieces. If imported as complete towers or as complete towers less their bases, they are classifiable under the provisions of item 652.98. If made up into a series of sections, they enter under 652.94. If the various components of transmission towers are not assembled, in whole or in part, they are classifiable under the following TSUS item numbers:

Article	TSUS item number
Angles, beams, and channels	609.84
Bolts and nuts	646.54
Spiral and other lock washers	646.65
Other washers	646.70
Assembled bolts and washers	646.72
Gusset plates	657.20
Base plates	657.20
Steel rungs	657.20
Ladders	657.20

Virtually all of the transmission towers erected in the United States of materials fabricated abroad are classifiable under the individual items listed above. Only a few are imported as complete towers (item 652.98) or made up into structural units (item 652.94). Angles, beams, and channels (most of which are angles) account for 85 to 90 percent of the tonnage of transmission towers imported into the United States; gusset plates and bolts and nuts each account for about 5 percent; and base plates, washers, ladders, and rungs when used, represent the remaining weight of a tower (usually from 0.5 to 3 percent). Foundations are poured at the site by the erection contractors and, therefore, are not imported or shipped by domestic fabricators.

Virtually all of the imports from Italy (by far, the largest source of U.S. imports) have been imported in piece lots under the various TSUS items listed above. * * * Almost all of the bolts and tower components used in the United States are galvanized.

Complete transmission towers (item 652.98) were initially dutiable under the Tariff Act of 1930 (paragraph 397) at 45 percent ad valorem. Pursuant to concessions in the General Agreement on Tariffs and Trade (GATT) the rate was reduced to 22.5 percent ad valorem on January 1, 1948, and to 21 percent, 20 percent, and 19 percent on June 30, 1956, 1957, and 1958, respectively. Pursuant to a compensatory concession, amounting to a 50 percent reduction, granted to Canada in the GATT, the rate was reduced to 17 percent, 15 percent, 13 percent, and 11 percent ad valorem on January 1, 1966, 1967, 1968, and 1969, respectively, and is scheduled to be reduced to 9.5 percent ad valorem on January 1, 1970.

Articles covered by TSUS item 652.94 (structural sections made up into units) were initially dutiable under paragraph 312 of the Tariff Act of 1930 at 20 percent ad valorem. On May 1, 1935, the duty was reduced to 15 percent ad valorem pursuant to a concession granted by the United States in a bilateral trade agreement with Belgium. The duty was further reduced, pursuant to GATT concessions, to 10 percent on January 1, 1948 and to 7.5 percent on June 6, 1951. Pursuant to a maximum permissible Kennedy Round concession, the rate was reduced to 6.5 percent ad valorem on January 1, 1968, to 6 percent on January 1, 1969, and is scheduled to be reduced to 5 percent, 4 percent, and 3.5 percent ad valorem on January 1, 1970, 1971, and 1972, respectively.

The rate history for articles covered by TSUS item 609.84 (angles, beams, and channels) is the same as that for item 652.94 except that the 7.5 percent ad valorem rate was reduced to 7 percent on January 1, 1968, and is scheduled to be reduced to 6.5 percent ad valorem on January 1, 1970 (the Kennedy Round reduction amounted to 13 percent).

Articles imported under item 657.20 (gusset plates, base plates, steel rungs and ladders) were originally dutiable at 45 percent ad valorem under the Tariff Act of 1930 (paragraph 397). Pursuant to GATT concessions, the rate was reduced to 22.5 percent ad valorem on January 1, 1948, to 21 percent, 20 percent, and 19 percent ad valorem on June 30, 1956, 1957, and 1958, respectively, and, pursuant to a 50 percent Kennedy Round concession, to 17 percent ad valorem on January 1, 1968 and to 15 percent ad valorem on January 1, 1969. The rate is scheduled to be

further reduced to 13 percent on January 1, 1970, to 11 percent on January 1, 1971, and to 9.5 percent on January 1, 1972.

Bolts (including bolts and their nuts imported in the same shipment--item 646.54) were originally dutiable at 1 cent per pound under paragraph 330 of the Tariff Act of 1930; pursuant to a GATT concession the rate was reduced to 0.5 cent per pound on January 1, 1948. A maximum permissible Kennedy Round concession resulted in a reduction in the rate to 0.4 cent per pound on January 1, 1968; the rate is scheduled to be further reduced to 0.3 cent per pound on January 1, 1970 and to 0.2 cent per pound on January 1, 1972.

A few bolts have been imported assembled under the provisions of item 646.72. Assembled bolts were originally dutiable at 45 percent ad valorem under paragraph 397 of the Tariff Act of 1930 but pursuant to GATT concessions, were reduced to 22.5 percent ad valorem on January 1, 1948 and to 21 percent, 20 percent, and 19 percent on June 30, 1956, 1957, and 1958, respectively, and further reduced (pursuant to a maximum permissible Kennedy Round concession) to 17 percent on January 1, 1968 and to 15 percent on January 1, 1969. The rate is scheduled to be reduced to 13 percent, 11 percent, and 9.5 percent ad valorem on January 1, 1970, January 1, 1971, and January 1, 1972, respectively.

Spiral and other lock washers (item 646.65) were originally dutiable at 35 percent ad valorem under the Tariff Act of 1930 (paragraph 332). The 35-percent rate was reduced to 20 percent ad valorem in 1948 and further reduced (pursuant to a maximum permissible Kennedy Round concession) to 18 percent on January 1, 1968, and to 16 percent ad valorem on January 1, 1969. The rate is scheduled to be reduced to 14 percent, 12

percent, and 10 percent ad valorem on January 1, 1970, January 1, 1971, and January 1, 1972, respectively.

Other washers (item 646.70) were originally dutiable at 0.6 cent per pound under the 1930 Tariff Act but pursuant to GATT concessions were reduced to 0.3 cent per pound in 1948, to 0.2 cent per pound on January 1, 1968, to 0.1 cent per pound on January 1, 1969, and are scheduled to be free of duty on January 1, 1971.

The changes in the rates of duty 1/ since 1930 for the TSUS item numbers under which transmission towers and parts are imported are summarized as follows: 2/

Item	TSUS item							
	609.84	646.54	646.65	646.70	646.72	652.94	652.98	657.20
1930 rate	20%	1¢ per lb.	35%	0.6¢ per lb.	45%	20%	45%	45%
Effective date of change in rate:								
May 1, 1935	15%	-	-	-	-	15%	-	-
Jan. 1, 1948	10%	0.5¢ per lb.	20%	0.3¢ per lb.	22.5%	10%	22.5%	22.5%
June 6, 1951	7.5%	-	-	-	-	7.5%	-	-
June 30, 1956	-	-	-	-	21%	-	21%	21%
June 30, 1957	-	-	-	-	20%	-	20%	20%
June 30, 1958	-	-	-	-	19%	-	19%	19%
Jan. 1, 1966	-	-	-	-	-	-	17%	-
Jan. 1, 1967	-	-	-	-	-	-	15%	-
Jan. 1, 1968	7%	0.4¢ per lb.	18%	0.2¢ per lb.	17%	6.5%	13%	17%
Jan. 1, 1969	-	-	16%	0.1¢ per lb.	15%	6%	11%	15%
Jan. 1, 1970	6.5%	0.3¢ per lb.	14%	-	13%	5%	9.5%	13%
Jan. 1, 1971	-	-	12%	Free	11%	4%	-	11%
Jan. 1, 1972	-	0.2¢ per lb.	10%	-	9.5%	3.5%	-	9.5%

1/ Percent ad valorem, unless otherwise indicated.

2/ Since May 22, 1967, imports of transmission towers and parts from Italy are subject to an additional countervailing duty of $20 per ton.

Note.--Trade agreement modifications prior to 1964 relate to the tariff provisions in effect under Title I of the Tariff Act of 1930 from which the present TSUS items were derived.

Countervailing duties

Effective May 22, 1967, the U.S. Treasury Department imposed countervailing duties equal to $20 per ton on all transmission towers and parts imported from Italy. The order is still in effect. The additional duties were invoked because the Italian government was providing what the United States classifies as an illegal bounty or subsidy to its manufacturers of transmission towers and parts. The Italian importers have disputed Treasury's ruling in the courts; the case is currently pending. The portion of the 1967 countervailing duty case involving Italian "turnover taxes" has yet to be decided by the U.S. Treasury Department.

While the U.S. Treasury Department has collected an additional $20 per ton countervailing duty on all imports of transmission towers and parts from Italy since May 1967, the Bonneville Power Administration, an agency of the U.S. government, was required to pay the additional $20 per ton as a result of the existing contracts between Bonneville and the Italian suppliers which required Bonneville to pay any additional duties that might occur. Treasury officials state that such government procurement practices have recently been changed so that government agencies no longer contract on such a basis. The Bonneville Power Administration is the largest domestic user of imports of transmission towers and parts. Many of the contracts covering the purchase of Italian towers by private power companies in the United States also contained the "additional duties" clause.

U.S. consumption

It is estimated that the U.S. consumption of transmission towers and parts between January 1, 1965, and August 31, 1969, amounted to at least 1.4 million tons. Although data on annual consumption are not available, it is believed that such consumption is increasing. The Federal Power Commission reports that since 1960 the electric utility industry has doubled its capacity to generate electricity.

Virtually the only consumers of transmission towers and parts are Federal agencies concerned with the generation and sale of electric energy (e.g. Bonneville Power Administration, Tennessee Valley Authority, and the Bureau of Reclamation) and electric power companies, both publicly and privately owned. Industry sources have estimated that Federal agencies and state and municipal-owned power companies together account for about one-fourth of the total U.S. consumption.

U.S. imports

U.S. imports are not separately reported in official statistics. As indicated earlier, components for transmission towers are imported under various TSUS item numbers. There is no meaningful way to estimate

the percentage of transmission tower parts included in the item numbers under which they are dutiable. About 85 to 90 percent, by weight, of all the component parts enter under item 609.84; about 5 percent under 646.54; about 5 to 8 percent under 657.20 and the remainder (usually less than 1 percent) under items 646.65, 646.70, and 646.72. Only negligible quantities have been entered under 652.94 and 652.98. Imports are comparable to the domestically fabricated article since both the foreign supplier and the domestic fabricator are bidding on the same structural requirements, using the same quality steel and the same ASTM specifications. Some elements of design, however, may differ.

In order to measure to some degree the quantity and value of imports of transmission towers and parts, the Tariff Commission sent questionnaires to about 50 private and public utilities which were reported to have contracted for the purchase of transmission towers from foreign suppliers on one or more occasions since January 1, 1965. Data compiled from the questionnaires indicate that government and private utilities contracted for at least 453,000 tons valued at $128.7 million during the 4-year 8-month period from January 1, 1965, to August 31, 1969, representing an average annual rate of about 97,000 tons (table 1). Agencies of the United States Government contracted for 237,000 tons ($63.3 million) or 52.3 percent of the total tonnage and 49.2 percent of the total value. The Commission is aware of additional imports during the period covered by the questionnaire by private companies which did not report their importations, but it is believed that such quan-

tities are probably not substantial. As of July 1, 1969, about 71 percent, or 322,000 tons ($89.5 million), of the 453,000 tons contracted for since January 1, 1965 had been delivered. It is often 1 or 2 years, and in some instances 3 years, after the contract is made before all of the transmission towers contracted for are delivered. Deliveries of transmission towers in 1965, 1966, and 1967 based on contracts before January 1, 1965, are not included in any of the data obtained by the Commission. The bulk of the imports entered during 1965 were based on contracts made prior to 1965, and substantial quantities were delivered in 1966 based on contracts before 1965.

The value of all transmission towers and parts contracted for since January 1, 1965, from foreign suppliers averaged $284 per ton[1/]; it averaged $332 per ton for domestic producers' shipments. U.S. Government purchases of imported towers averaged $267 per ton while private utilities purchases from foreign sources averaged $303 per ton. From 1965 to the present, the tonnages of transmission towers and parts contracted for from foreign suppliers fluctuated from 43,200 tons in 1967 to 130,800 tons in 1966; however, contracts made during the first 8 months of 1969 totaled 90,400 tons or at the annual rate of 135,600 tons. As noted above the tonnages contracted for are reflected in actual deliveries that take place from 4 months to 3 years after contracts are signed.

Italy, Japan, and the United Kingdom are the principal sources of imports. India and Canada have supplied small quantities. * * *

1/ Generally, reflects a delivered price.

Contracts awarded since countervailing duties were imposed on imports from Italy in May 1967 indicate that the Italian share of the U.S. market has declined while the Japanese share has increased.

* * * * * * *

Assuming that actual importations since January 1, 1965, from all sources were about equal to the tonnages for which contracts were signed, the ratio of imports to U.S. consumption was about one to three. For 1969, the ratio of imports to consumption may be as much as 50 percent. Based on all available data including discussions with industry officials, custom officials, and officials representing foreign interests, the following statements are believed to be true: (1) the overall U.S. market for steel transmission towers is increasing annually; (2) domestic producers' shipments have steadily declined since 1966 and consequently their share of the U.S. market; (3) imports (those actually delivered) have increased in recent years; increased imports from Japan and the United Kingdom have more than offset the small decline registered in imports from Italy since 1967, the peak year for imports from Italy; (4) imports are likely to continue to increase (contracts signed during the first 8 months of 1969 totaled 90,400 tons or at an annual rate of 135,600 tons, an amount larger than in any previous year); and (5) the average per ton price for which foreign-made towers are sold in the U.S. market is considerably lower

than the price received by domestic fabricators (about $50 per ton less during January-June 1969).

* * * * * * *

U.S. producers

Transmission towers are fabricated by 10 domestic companies operating 19 plants in 11 States. Three plants each are located in Oklahoma, Pennsylvania, and Texas; two plants each are situated in California and Alabama, and 1 each in Arkansas, Colorado, Iowa, Minnesota, Ohio, and South Carolina.

United States Steel Corporation and Bethlehem Steel Corporation (each operating plants in Pennsylvania and California) are the only integrated steel concerns among the domestic fabricators of transmission towers. The other tower fabricators use purchased steel to produce towers, bridge components and a variety of similar fabricated products; some plants fabricate towers almost exclusively.

Two companies report substantial layoffs and another is contemplating a plant shutdown in the near future because of a lack of orders. Universal Pole & Structures Division of the A.B. Chance Company, Houston, Texas, discontinued fabricating transmission towers in March 1968 and the Blaw-Knox Company, Pittsburgh, Pennsylvania, discontinued fabricating transmission towers in 1967.

Sales practices

Orders for transmission towers are placed by private utilities and government agencies, and by consulting engineers that represent either private or government agencies. The purchaser prepares tower specifications and solicits bids from fabricators by one of several methods. Most prevalent among these methods is to request a price for furnishing and delivering the towers (f.o.b. delivered destination). Another common method is to request that proposals be submitted to general contractors who in turn bid on a total project (turn-key) basis. There are no list prices since each tower project is a custom job and requires a separate estimate in accordance with its particular requirements. Prices are requested per pound based on American Institute of Steel construction billing formula or some other acceptable weight determination formula or lump sum per structure or per unit of structure or a combination of the first two methods. If testing is required by the purchaser, the cost of testing is usually priced separately. Detailed engineering prices may or may not be quoted separately.

It is extremely rare that large transmission tower projects will use existing designs. The offer to bid is based upon furnishing tower components comprised of fabricated steel parts that are set forth in a specified set of tower drawings that cover tower body, body extensions, leg extensions, grillage, rock anchor and plate footing. To comply with a steel tower bid, a contractor must furnish a master production schedule that includes planning and engineering, detailed drawings, purchase of material fabricating, testing, assembly, bundling, loading,

and shipment. Generally, foreign fabricators comply in the same manner and detail as domestic fabricators.

Domestic fabricators report that in quoting for business they incur large costs in designing and testing even though importers may receive the business. They further state that since imports have captured a large portion of the domestic market and almost all of the federal government market, many of the domestic fabricators do not quote on projects (especially U.S. Government) because of the very high bid costs and meager chances of obtaining the contract in competition with imports.

Two domestic companies reported receiving contracts which they stated were bid at cost in order to keep their workers employed and in the hope that the competitive situation would improve. One domestic company reported that a winning Italian bid was $100 per ton lower than its bid, each bidding on the same domestic tower project.

Buy American Regulations

Federal agencies and public electric power companies customarily purchase transmission towers on the basis of competitive bidding. Subject to any applicable "Buy American" regulations, bids are invited from various firms, both domestic and foreign, and the contract is awarded on the basis of the low bid. However, "Buy American" regulations often impose restrictions on the purchase of foreign goods for use in public projects; such regulations exist at both the Federal and the state-local levels.

Federal.--The practices followed by the Federal Government regarding procurement of goods of foreign origin for use within the United States are based upon the "Buy American" Act (41 U.S.C. 10a-10c) enacted March 3, 1933, and upon Executive Order 10582, which was issued in 1954 and amended in 1962. Under these regulations Federal agencies purchasing transmission towers are required to procure materials of domestic origin unless the bid or offered price of such materials is more than 6 percent above the bid or offered price (on a delivered basis, including duty) of like materials of foreign origin. 1/ Materials are considered to be of foreign origin if the cost of foreign components constitutes 50 percent or more of the cost of all components.

State and local.--About one-third of the state governments and many local governmental units also impose restrictions on the purchase for public projects of goods of foreign origin; such restrictions may be formally embodied in state constitutions, statutes, and city ordinances, or they may be reflected in informal purchasing policies of the agencies involved. Preferences for domestic goods range from outright prohibitions on purchases of foreign materials for public projects to the practice of favoring domestic suppliers only when the price and quality standards of their bids are essentially the same as

1/ Administrative policies have authorized an additional 6 percent differential for domestic goods offered by small businesses or produced in areas of substantial unemployment. The Executive Order permits agencies to reject foreign bids for reasons of national interest or if necessary to protect essential national security interests. It also allows greater differentials if an agency head determines that such is not unreasonable.

those of foreign suppliers. Because of the myriad of forms that state and local "Buy American" regulations may assume, it is virtually impossible to accurately assess their effect upon the purchase of transmission towers of foreign origin by state and municipal-owned electric power companies.

U.S. producers' shipments and sales

U.S. producers' shipments increased from 126,000 tons valued at $37.7 million in 1963 to 226,000 tons valued at $71.7 million in 1966, but thereafter declined moderately until the latter half of 1968 when a sharp decline was registered * * *. Shipments declined to 216,000 tons in 1967 and to 195,000 tons in 1968; during the last half of 1968, only 84,000 tons were shipped. Shipments totaled 79,000 tons during January-June 1969; however, several companies have since curtailed operations and it now appears that shipments during the second half of 1969 will be substantially below those of the first six months.

From 1965 to the present, the prices received per ton by domestic fabricators and foreign suppliers were as follows: 1/

Year	Domestic fabricators (average price per ton)	Foreign suppliers (average price per ton)
1965	$310	$251
1966	318	273
1967	337	313
1968	355	295
1969 (Jan.-June)	357	307

1/ For the most part the prices for both domestic and imported towers are delivered prices at the site. Although tower design and product mix vary considerably from year to year and from project to project, the overall average price per ton received is somewhat indicative of the price differential between domestic and imported towers.

* * * * * * *

Normally, none of the domestic fabricators maintain an inventory of steel products used in the fabrication of transmission towers. Generally, they do not purchase steel until a contract has been received.

U.S. exports

From 1963 to 1968, U.S. exports of transmission towers and parts were negligible, amounting to only 8,980 tons valued at $3.3 million (averaging about 1,500 tons annually). Virtually all of the exports were financed through the Agency for International Development. There were no exports of transmission towers and parts during January-June 1969.

United States Steel Corporation

In 1968 the United States Steel Corporation, the largest steel corporation in the world, produced 32.4 million tons of raw steel; its net sales amounted to more than $4.6 billion.

As one of two integrated fabricators of transmission towers and parts, the United States Steel Corporation is highly competitive with other domestic fabricators. Company officials maintain that even though the company is often the lowest domestic bidder on tower projects it is losing increasing numbers of tower contracts to foreign suppliers. The Shiffler and Maywood plants (two of nine plants operated by the

American Bridge Division) are the only facilities of the Corporation which fabricate transmission towers and parts.

Shiffler Plant.--The Shiffler plant is almost entirely constructed for and devoted to the fabrication of transmission towers. Although towers have been fabricated there since 1927, many of the operations have recently been automated.

* * * * * * *

Maywood Plant.--The Maywood plant, constructed during 1964 and early 1965 on 130 acres near the Watts District of Los Angeles, is a modern large-scale production complex. The major products produced at Maywood are structural shapes for bridges and buildings, plates, water pipe and other tubular products, drainage products, penstock and tunnel liners, defense-related products, and transmission towers and parts. The Maywood facilities include a structural shop, a machine shop, a plate shop, ground supporting equipment shop, a transmission tower shop, including a galvanizing department, and a pre-assembly area. The tower shop operations at Maywood are somewhat similar to the operations at the Shiffler plant. Some of the tower fabrication operations include operations performed in other shops; consequently, some workers in other departments are employed a portion of each day or a portion of each week, as the case may be, on tower fabrication.

* * * * * *

Steel transmission towers and parts: U.S. producers' shipments, 1963-68, January-June 1968, and January-June 1969

Year	Quantity	Value
	Short tons	1,000 dollars
1963	126,009	37,663
1964	151,244	46,035
1965	194,826	60,442
1966	225,558	71,698
1967	216,034	72,813
1968	195,201	69,206
1968 (January-June)	111,312	39,530
1969 (January-June)	79,417	28,363

Source: Compiled from data supplied to the U.S. Tariff Commission by the domestic fabricators of steel transmission towers and parts.