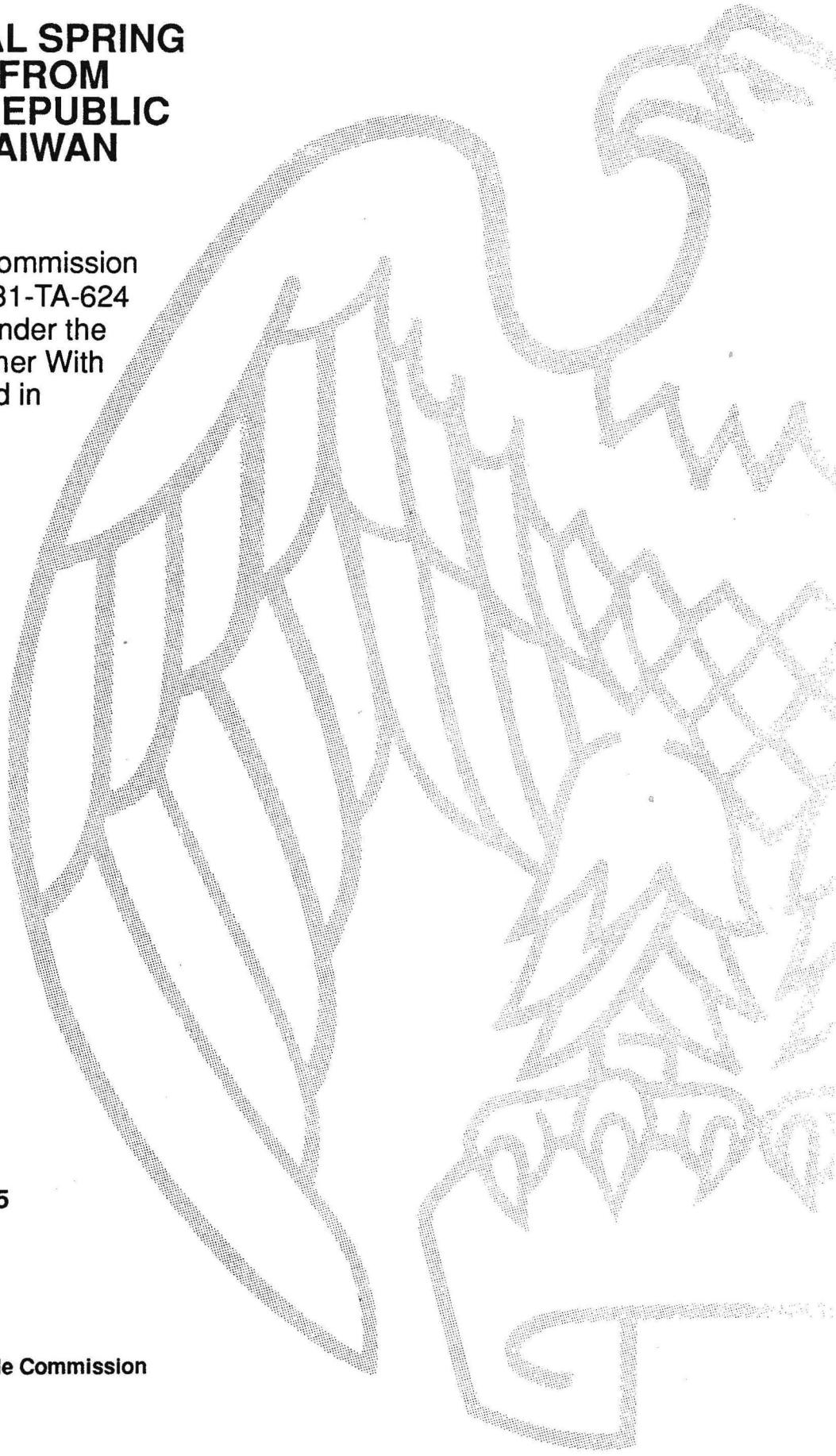
CERTAIN HELICAL SPRING LOCKWASHERS FROM THE PEOPLE'S REPUBLIC OF CHINA AND TAIWAN

Determinations of the Commission in Investigations Nos. 731-TA-624 and 625 (Preliminary) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigations



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CERTAIN HELICAL SPRING LOCKWASHERS FROM THE PEOPLE'S REPUBLIC OF CHINA AND TAIWAN

UNITED STATES INTERNATIONAL TRADE COMMISSION

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigations Nos. 731-TA-624 and 625 (Preliminary)

CERTAIN HELICAL SPRING LOCKWASHERS FROM
THE PEOPLE'S REPUBLIC OF CHINA AND TAIWAN

Determinations

On the basis of the record[1] developed in the subject investigations, the Commission unanimously determines,[2] pursuant to section 733(a) of the Tariff Act of 1930 (19 U.S.C. § 1673b(a)), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from the People's Republic of China (China) and Taiwan of certain helical spring lockwashers,[3] provided for in subheading 7318.21.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value (LTFV).

Background

On September 8, 1992, a petition was filed with the Commission and the Department of Commerce by the Shakeproof Industrial Products Division, Illinois Tool Works, Milwaukee, WI, alleging that an industry in the United States is materially injured or threatened with material injury by reason of LTFV imports of certain helical spring lockwashers from China and Taiwan. Accordingly, effective September 8, 1992, the Commission instituted antidumping investigations Nos. 731-TA-624 and 625 (Preliminary).

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[1] The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(f)).

[2] Commissioner Crawford did not participate in the investigation involving Taiwan.

[3] For purposes of these investigations, "certain helical spring lockwashers" consist of circular washers of carbon steel (including carbon alloy steel), or of stainless steel, whether or not heat-treated or plated, having ends that are off-line, and designed to function as a spring to compensate for developed looseness between component parts of a fastened assembly, to provide a hardened bearing surface, or to distribute load over a larger area for screws or bolts.

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of September 16, 1992 (57 F.R. 42760). The conference was held in Washington, DC, on September 30, 1992, and all persons who requested the opportunity were permitted to appear in person or by counsel.

VIEWS OF THE COMMISSION[1]

Based on the record in these preliminary investigations, we find that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of carbon steel and stainless steel helical spring lock washers from the People's Republic of China (China) and Taiwan, that are alleged to be sold at less than fair value (LTFV).[2]

I. The Legal Standard for Preliminary Determinations

The legal standard in preliminary antidumping investigations requires the Commission to determine, based on the best information available at the time of the preliminary determination, whether there is a reasonable indication of material injury or threat thereof to a domestic industry by reason of the imports under investigation.[3] In these investigations, the Commission considered whether "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of material injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation."[4] The U.S. Court of Appeals for the Federal Circuit has held that this interpretation of the standard "accords with clearly discernible legislative intent and is sufficiently reasonable."[5]

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[1] Commissioner Crawford did not participate in Inv. No. 731-TA-625 (Taiwan).

[2] 19 U.S.C. § 1673b(a). Material retardation of the establishment of an industry is not an issue in these investigations.

[3] 19 U.S.C. § 1673b(a).

[4] American Lamb Co. v. United States, 785 F.2d 994, 1001 (Fed. Cir. 1986). Recently, the Court of International Trade (CIT) interpreted American Lamb to affirm "the Commission's practice of reaching a negative preliminary determination of injury only when" these two factors are met. Torrington Co. v. United States, 790 F. Supp. 1161, 1165 (CIT 1992).

[5] American Lamb, 785 F.2d at 1004.

II. Like Product and Domestic Industry

A. Background and Products Subject to Investigation

To determine whether a domestic industry is materially injured or threatened with material injury by reason of the subject imports, the Commission must first define the "like product" and the "industry." Section 771(4)(A) of the Tariff Act of 1930 (the "Act") defines the relevant domestic industry as "the domestic producers as a whole of a like product, or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that product . . . ."[6] In turn, section 771(10) of the Act defines "like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation. . . ."[7]

The Department of Commerce defined the class or kind of imported merchandise subject to these investigations as follows:

> [S]pring lock washers are circular washers of carbon steel (including carbon alloy steel), or of stainless steel, heat-treated or non-heat-treated, plated or non-plated, with ends that are off-line. Spring lock washers are designed to (1) function as a spring to compensate for developed looseness between component parts of a fastened assembly; (2) distribute the load over a larger area for screws or bolts; and (3) provide a hardened bearing surface. The scope does not include internal or external tooth washers, nor does it include spring lock washers made of other metals, such as copper.[8]

Helical spring lock washers are flattened, ring-shaped metal devices manufactured in an assortment of sizes and differing metal contents, whose ends are cut in an off-line manner so as to provide spring or tension to assembled parts when used as a seat for bolts, nuts, screws and similar

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[6] 19 U.S.C. § 1677(4)(A).
[7] 19 U.S.C. § 1677(10).
[8] 57 Fed. Reg. 45765, 45766 (October 5, 1992).

fasteners.[9] In addition to preventing movement or loss of tension between assembled parts, helical spring lock washers are used to distribute load over an area greater than that provided by the fastener and to provide a hardened bearing surface that facilitates assembly and disassembly of fastened parts.[10]

B. Like Product Analysis

The Commission's like product determinations are factual, and the Commission applies case-by-case the statutory standard of "like" or "most similar in characteristics and uses."[11] In these investigations, we have considered three primary issues regarding the definition of the like product: (1) whether there should be a single like product, which includes helical spring lock washers made from carbon steel and stainless steel, as well as from other metals; (2) whether there should be a single like product for helical spring lock washers of all sizes; and (3) whether the like product should exclude non-helical spring lock washers, tooth lock washers and flat washers.

For these preliminary investigations, we determine that there is a single like product which consists of all helical spring lock washers of all sizes, whether made from carbon steel, stainless steel or other metal.

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[9] Commission Report (Report) at I-5.

[10] Id.

[11] Asociacion Colombiana de Exportadores de Flores, et al. v. United States, 693 F. Supp. 1165, 1169 (CIT 1988). In analyzing which domestic products are "like" the class or kind of imported articles subject to investigation, the Commission considers factors including: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities and production employees; and where appropriate, (6) price. Generally, the Commission requires "clear dividing lines among possible like products" and disregards minor variations among them. See Torrington v. United States, 747 F. Supp. 744, 748-749 (CIT 1990), aff'd, 938 F.2d 1278 (Fed. Cir. 1991).

1. Whether there should be a single like product, which includes helical spring lock washers made from carbon steel and stainless steel, as well as from other metals.[12]

a. Physical Characteristics and Uses

The vast majority of helical spring lock washers are made of carbon steel or stainless steel.[13] There are differences between the two metals. In terms of physical characteristics, lock washers made of carbon steel can be heat-treated or hardened, and plated. Stainless steel typically has a small amount of carbon, but has properties that make it corrosion-resistant.[14] Thus, stainless steel is not plated, nor is stainless steel heat-treated.[15]

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[12] The parties to these investigations agree that both carbon steel and stainless steel helical spring lock washers, as well as helical spring lock washers made from other metals, comprise one like product. See, e.g., Transcript of the Public Conference (Transcript) at 135, 143. Shakeproof Industrial Products Division of Illinois Toolworks, Inc. (Petitioner) asserts that "the 'like product' definition may properly include helical spring lock washers which are made of metals other than carbon and carbon alloy steels and stainless steels, such as copper and aluminum. These products are made on the same machines, using the same employees and are sold through the same distribution channels as those within the scope of the investigations." Petitioner's Post-Conference Brief at 11. However, Petitioner noted that "the end-use application dictates what type of material a customer will buy." Transcript at 68.

Respondents agree that the like product consists of helical spring lock washers, whether made of carbon or stainless steel, or of other metals such as copper or aluminum." See, e.g., Transcript at 132; Letter from Respondents' counsel, on behalf of the American Association of Fastener Importers (AAFI) and the Hangzhou Spring Washer Plant, dated October 8, 1992 (Respondents' letter dated October 8, 1992)("Although made of very different materials, priced very differently, and not used interchangeably by purchasers, all types of helical spring lock washers serve the same mechanical function in the same manner, and are made on the same equipment, which can be used interchangeably for all types of material. . . . [T]hey perform the same friction increasing and tension distribution functions in the same mechanical manner.")

[13] Report at I-5, n.8. Helical spring lock washers made from other metals, such as copper, aluminum alloy, brass, and phosphor bronze, are not within the scope of Commerce's investigations. Report at I-6, n.10. These preliminary investigations have not revealed detailed information on the physical characteristics or special uses of helical spring lock washers made from other metals. Thus, the like product discussion is limited principally to helical spring lock washers made from carbon steel and stainless steel.

[14] Transcript at 70.

[15] Petition at 6.

Use of helical spring lock washers made of a particular metal is governed by the particular characteristics desired. For example, medical or food equipment manufacturers may require washers that do not rust or corrode.[16]

Despite these different characteristics, however, helical spring lock washers made from all metals serve the same essential function in the same way: to "lock" a fastener assembly together by providing a spring action to maintain tension against the fastener and prevent it from loosening.

b. Interchangeability

Interchangeability of carbon steel and stainless steel helical spring lock washers, and helical spring lock washers of other metals, is complete in that all types serve the same mechanical function. Helical spring lock washers are subject to metal-specific industry performance standards.[17] If helical spring lock washers of various metals satisfy a particular performance standard, they are technically interchangeable to serve the same mechanical function.[18] However, cost and special applications may dictate the purchase of one material over another.[19] Thus, while the more expensive stainless steel product can be used where a carbon steel product would be just as suitable, the higher cost of stainless steel normally will prevent a user from doing so.[20]

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[16] Transcript at 68-69.

[17] See Petition at 7 and at Appendix 7 regarding the American Society of Mechanical Engineers standards for helical spring lock washers.

[18] See Transcript at 14.

[19] Stainless steel helical spring lock washers cost significantly more than carbon steel helical spring lock washers. Petition at 6; Transcript at 133, 134; Respondents' Post-Conference Brief at 17.

[20] The Commission has in previous investigations given more weight to actual, rather than merely potential, interchangeability. See Nepheline Syenite from Canada, Inv. No. 731-TA-525 (Preliminary), USITC Pub. 2415 (August 1991) at 14 n.47.

c. Channels of Distribution

Channels of distribution for all helical spring lock washers, regardless of metal content, are fundamentally the same.[21] Most helical spring lock washers are sold by producers to master distributors or importers, who sell primarily to other, smaller distributors. These smaller distributors sell to end-users, principally to manufacturing companies.[22] Although producers may only make, and master distributors may only stock, a particular kind of helical spring lock washer,[23] smaller distributors and retailers tend to stock a variety of items according to customer needs.[24]

d. Common Manufacturing Facilities and Employees

The same equipment and labor force can be and is used to produce helical spring lock washers of all materials.[25]

e. Customer Perceptions of the Product

With regard to customer perceptions, all parties to these investigations acknowledge that despite the substantial mechanical similarities, helical spring lock washers of different metal types are not used interchangeably by

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[21] Petitioner characterizes the channels of distribution as similar for both carbon steel and stainless steel helical spring lock washers at all levels. Transcript at 68-70, 137. See also Respondents' letter dated October 8, 1992. ("All types of helical spring lock washers are not sold through the same channels at the importer/master distributor level, but are distributed by many of the same outlets at the lower distribution and retail levels.")

[22] See Transcript at 23-24; Petitioner's Post-Conference Brief at 7.

[23] Transcript at 132-133, 137. For example, Respondent Porteous Fastener Company only imports helical spring lock washers made of carbon steel. Transcript at 134. Respondent Soule, Blake & Wechsler handles nothing but stainless in its inventory operation. Transcript at 139. Respondent Hangzhou Spring Washer Plant, which Respondents assert accounts for approximately 80 percent of all Chinese helical spring lock washer exports, only makes carbon steel products. Respondents' Post-Conference Brief at 1, 17. However, Petitioner makes both carbon steel and stainless steel helical spring lock washers. See, e.g., Petition at 6.

[24] See, e.g., Transcript at 69, 136-138.

[25] See Transcript at 72; Petitioner's Post-Conference Brief at 11.

consumers due to various properties (e.g., corrosiveness, magnetism) of the metals.[26] That some customers would not purchase carbon steel helical spring lock washers despite their significantly lower price indicates that some customers perceive carbon steel and stainless steel to be different despite their technical interchangeability.

f. Price

Because certain materials are more expensive than others, prices of helical spring lock washers differ depending on the material of which they are made. Customers do not typically purchase the more expensive material unless some particular characteristic (e.g., non-corrosive, non-magnetic) is required.[27]

We find that the record in these preliminary investigations supports the inclusion of both carbon and stainless steel helical spring lock washers, as well as helical spring lock washers made of other metals, in a single like product. Specifically, we base our finding on the fact that helical spring lock washers of all metals are made on the same equipment with the same labor force, serve the same essential function, are mechanically interchangeable, and flow through overlapping channels of distribution. We note, however, the significant price differential between stainless and carbon steel helical spring lock washers and their relatively limited interchangeability. Accordingly, we intend to seek more detailed information on these factors, as well as customer perceptions, and will reexamine the like product issue in any final investigations.

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[26] See, e.g., Transcript at 68, 100, 105-106, 133.

[27] Petition at 6; Transcript at 133, 134; Respondents' Post-Conference Brief at 16-17.

2. Whether there should be a single like product which includes helical spring lock washers of all sizes.

The Commission has been reluctant to draw separate like product distinctions based on product size alone.[28] We have considered, however, the question of size in these preliminary investigations, since the industry recognizes that the product is either "standard" or "special," in part, according to size.[29]

Helical spring lock washers vary by inside diameter, outside diameter and thickness. "Standard" types comprise the majority of production of all helical spring lock washers and generally encompass those helical spring lock washers having inside diameters from one quarter inch to one inch.[30] "Specials" may include sizes outside the standard range, or those made to metric or unique customer specifications.[31] While the dimension of helical spring lock washers may vary, the mechanical function of the product remains the same.

Consumer demand for the product varies greatly for different sizes of helical spring lock washers.[32] Specifications of the downstream products which utilize helical spring lock washers dictate the sizes needed, and limit the interchangeability of various size lock washers.[33] Distributors may stock

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[28] Certain Compact Ductile Iron Waterworks Fittings and Accessories Thereof from the PRC, Inv. No. 731-TA-621 (Preliminary), USITC Pub. No. 2552 (August 1992) at 15, n.22.

[29] Neither party has raised size as a like product issue.

[30] These are known in the industry as light, regular, heavy, extra duty and high collar. Petition at 6; Transcript at 20, 65-67; Report at I-6.

[31] Report at I-6; Transcript at 19-20.

[32] For example, six sizes of standard, regular helical spring lock washers account for a significant amount of Petitioner's total sales by quantity. Petition at 16-17. Petitioner asserts that these same sizes probably represent 60 percent or more of the imports from China and a significant percentage of imports of carbon steel lock washers from Taiwan. Id. Official statistics, however, do not categorize imports by size.

[33] See, e.g., Transcript at 65.

a range of sizes,[34] or specialize in one end of the range.[35] However, the same equipment and labor force is used to manufacture helical spring lock washers of all sizes.[36] As to price, size does have some impact because as size varies, so does the amount of raw material needed. The record suggests that the more material used, the higher the price of the helical spring lock washer.[37]

Because the principal characteristics and uses, methods of production, labor force and channels of distribution are common to all sizes of helical spring lock washers, we find that the single like product includes helical spring lock washers of all sizes.

3. Whether the like product should exclude non-helical spring lock washers, tooth lock washers and flat washers.[38]

Non-helical spring lock washers, tooth lock washers and flat washers, like helical spring lock washers, are all used to distribute load and prevent loosening.[39] They do not, however, function in the same manner as helical spring lock washers and are manufactured by different processes.[40]

Interchangeability among the various types of washers depends on the stage of manufacture of the downstream product which incorporates the washers.[41] While helical spring lock washers, non-helical spring lock

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[34] See Transcript at 65.
[35] Transcript at 66.
[36] See Transcript at 48, 72.
[37] See Report at I-40-43.
[38] The parties agree that the like product should exclude non-helical spring lock washers, tooth lock washers and plain or flat washers from the like product. See, e.g., Transcript at 71-72, 135, 143.
[39] See Report at I-6, 7.
[40] See, e.g., Transcript at 13, 14, 48, 49, 71, 134-135. Tooth lock washers have bent teeth on either the external or internal diameter of the washer, and create a mechanical abrasion to provide more friction than helical spring lock washers. Report at I-6, 7. Plain or flat washers have no locking capabilities. Report at I-7.
[41] Report at I-8.

washers, tooth washers and flat washers would be interchangeable at the design stage, after a downstream product has been designed to use a specific kind of washer, helical spring lock washers could not be interchanged with these other types of washers.[42] Large consumers, such as original equipment manufacturers, design their products to use a specific kind of lock washer and do not consider helical spring lock washers and other types of lock washers to be interchangeable after the design stage has been completed.[43]

Helical spring lock washers are cut from wire coil, while the other washers are stamped from sheet metal.[44] The equipment that makes helical spring lock washers at Petitioner's plant is dedicated to that product, and cannot manufacture tooth, flat or non-helical spring lock washers.[45]

Because of the fundamental differences in physical characteristics, uses, interchangeability, consumer perceptions, and method of production, we find that the like product does not include non-helical spring lock washers, tooth washers or flat washers.

C. Domestic Industry

Based on our definition of the like product, we determine that the domestic industry consists of all producers of helical spring lock washers. Shakeproof Industrial Products Division of Illinois Tool Works, Inc. (Petitioner) is the only company that currently produces helical spring lock washers in the United States.[46]

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[42] Transcript at 71, 134, 135. Report at I-8.
[43] Report at I-8; Transcript at 72, 134-135.
[44] See Transcript at 45, 71.
[45] Transcript at 48.
[46] We note that Respondents believe that Marvec, Inc., Philadelphia, PA, has recently begun to produce, or has plans to produce, helical spring lock washers. Report at I-9 and n.22. The Commission will seek information regarding this potential producer in any final investigations. The record (continued...)

III. Condition of the Domestic Industry[47]

In assessing whether there is a reasonable indication of material injury to a domestic industry by reason of allegedly LTFV imports, the Commission is directed to consider all relevant economic factors which have a bearing on the state of the industry in the United States . . . ."[48] We consider, among other relevant factors, consumption, production, shipments, inventories, capacity utilization, market share, employment, wages, productivity, financial performance, ability to raise capital, and research and development.[49] No single factor is dispositive and the Commission considers all relevant factors "within the business cycle and conditions of competition distinctive to the

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[46] (...continued)
does not contain any evidence of production by Marvec, Inc. of helical spring lock washers during the period of investigation.

[47] Statistical data in these preliminary investigations about the U.S. market are compiled from a combination of data provided in Shakeproof's questionnaire responses and official statistics provided by the U.S. Department of Commerce. In this discussion, volume data is measured by quantity in pounds, not units, based upon Tables 2 and C-9 of the Report. These tables are compiled from data submitted in response to producer and importer questionnaires and from official statistics. See Report at I-13 and C-7. Tables 2 and C-9 tend to overstate import volume and penetration, because the official statistics include other products besides helical spring lock washers in HTS subheading 7318.21.0000. (Table C-10, in which quantity measures are stated in units, is compiled only from data submitted in response to producer and importer questionnaires and tends to understate those terms, or otherwise skews the data, because questionnaire responses were very incomplete.) Data on U.S. shipments of helical spring lock washers are limited to data supplied by Petitioner on its own (and its predecessor's) operations. Likewise, Petitioner provided production data on the Mellowes operation prior to its purchase in April 1991, but not on Beall's operations. Report at I-11. In any final investigations, we intend to seek complete data for all companies which produced helical spring lock washers during the period of investigation.

[48] 19 U.S.C. § 1677(7)(C)(iii).

[49] Id. Because the domestic industry consists of only one producer, certain factors regarding the condition of the industry must be discussed in general terms to avoid disclosing business proprietary information.

affected industry."[50]

Petitioner's position as the only domestic producer of helical spring lock washers is a distinctive condition of competition.[51] According to the petition, there were seven U.S. producers of helical spring lock washers in 1980.[52] Four firms produced helical spring lock washers during the period of investigation. These firms include the Mellowes Company, Shakeproof (Petitioner), Crest Products, and Beall Manufacturing.[53]

Petitioner entered the helical spring lock washer industry in April 1991 when it acquired the Mellowes Company.[54] Petitioner explains that it acquired the Mellowes Company because the existing product lines of both companies were compatible and economies of scale could be achieved.[55] In November 1991, Petitioner purchased the assets of Beall's helical spring lock washer operation, but has not used the additional capacity.[56] Beall ceased production of helical spring lock washers at that time.[57] Crest sold its one helical spring lock washer machine to Petitioner in 1992.[58] Standard Lock

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[50] Respondents assert that helical spring lock washers are purchased by two "cyclically sensitive sectors of the economy" (i.e., manufacturers of consumer durables, e.g., appliances and automobiles; and capital goods, e.g., machinery). Respondents' Post-Conference Brief at 5-6. Respondents do not describe a true cycle, distinctive of either of these two sectors or the helical spring lock washer industry. Rather, the so-called "business cycle" Respondents describe is an explanation of how the recession, flat economic growth and general downturn in the economy adversely affect the derived demand for helical spring lock washers. Moreover, both Petitioner and Respondents assert that sales of helical spring lock washers used for maintenance and repair of existing equipment temper the decline in demand derived from the manufacture of original equipment. Id.; Transcript at 49-50, 112-113.

[51] See, supra, at note 46, regarding Marvec, Inc., a possible entrant into the domestic industry.

[52] Petition at 2; Report at I-8.

[53] See Report at I-8-9.

[54] Transcript at 10.

[55] Transcript at 144.

[56] Report at I-9; see Transcript at 108-109, 144-145, 147.

[57] Report at I-9; see Petition at Appendix 1.

[58] Transcript at 145; see Report at I-8, 9; Petition at Appendix 1.

Washers' (Stanlok) helical spring lock washer operation, which ceased production in 1988, was bought by Petitioner, who converted Stanlok into a master distributor.[59]

We next examine the various indicators of the domestic industry's performance. Apparent consumption of helical spring lock washers by volume decreased each year from 1989 to 1991.[60] In terms of value, apparent consumption increased moderately between 1989 and 1990, but decreased in 1991 to a level below that of 1989.[61] In terms of both volume and value, apparent consumption increased in the interim 1992 period (January through June 1992) as compared to the corresponding period in 1991.[62] [63] [64] The U.S. producers' market share increased by volume between 1989 and 1990, but decreased in 1991, to a level below that of 1989.[65] By value, the share of the U.S. market held by domestic producers decreased each year from 1989 to 1991.[66] In terms of both volume and value, U.S. market share increased in the interim 1992 period as compared to the corresponding period in 1991.[67]

On a volume basis, domestic production decreased each year from 1989 to 1991, and then increased in the interim 1992 period as compared to the corresponding period in 1991.[68] Capacity utilization decreased each year from

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[59] Transcript at 91, 92, 109, 144-145.
[60] Report at C-7, Table C-9.
[61] Id.
[62] Id.
[63] We are careful not to draw any conclusions about the full year based on interim data.
[64] Commissioner Rohr concurs with his colleagues in these investigations and is careful not to draw any conclusions about the full year based on partial year interim data, but cautions that not every case is equal and that, indeed, there could be instances where interim data could be indicative of the full year.
[65] Report at C-7, Table C-9.
[66] Id.
[67] Id.
[68] Id.

1989 to 1991, and then increased in the interim 1992 period as compared to the corresponding period in 1991.[69] U.S. shipments of helical spring lock washers, in terms of both quantity and value, decreased each year from 1989 to 1991.[70] However, U.S. shipments increased in the interim 1992 period as compared to the corresponding period in 1991. Unit values of U.S. shipments increased each year from 1989 to 1991.[71] However, unit values of U.S. shipments decreased in the interim 1992 period as compared to the corresponding period in 1991.[72]

End of period inventories for U.S. producers increased each year from 1989 to 1991, and in the interim 1992 period as compared to the corresponding period in 1991. At the same time, the number of production workers decreased each year from 1989 to 1991, and was lower in the interim 1992 period than the corresponding period in 1991.[73]

The net operating income of the domestic industry remained positive during the period of investigation, though it decreased each year from 1989 to 1991, and in the interim 1992 period as compared to the corresponding period in 1991.[74] Net sales value decreased each year from 1989 to 1991, but increased in the interim 1992 period as compared to the corresponding period in 1991.[75] The ratio of net operating income to net sales decreased between 1989 and 1990, but increased between 1990 and 1991 (to slightly over the 1989 level).[76] This ratio decreased, however, in the interim 1992 period over the

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[69] Id.
[70] Id.
[71] Id.
[72] Id.
[73] Id.
[74] Id.
[75] Id.
[76] Id.

corresponding period in 1991.[77] The ratio of cost of goods sold to net sales value increased between 1989 and 1990, but decreased in 1991 (below the 1989 level).[78] However, this ratio was higher in the interim 1992 period than in the corresponding period in 1991.[79] [80] [81] [82]

IV. Cumulation

In determining whether there is a reasonable indication of material injury by reason of the allegedly LTFV imports, the Commission is required to assess cumulatively the volume and effect of imports from two or more countries of like products subject to investigation if such imports are reasonably coincident with one another and "compete with each other and with like products of the domestic industry in the United States market."[83]

There is no dispute that imports from China and Taiwan are both subject to investigation, have been marketed in the United States throughout the period of investigation, and compete with the domestic like product in the U.S. market. The only cumulation issue raised in these preliminary investigations is whether the imports from Taiwan and China compete with one another.[84]

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[77] Id.
[78] Id.
[79] Id.
[80] In any final investigation, Commissioner Rohr and Commissioner Nuzum intend to analyze further the financial performance of this domestic industry to determine whether the domestic industry's level of financial performance is actually indicative of material injury.
[81] Based on their analysis of the information in the record, Chairman Newquist and Commissioner Rohr conclude that there is a reasonable indication that the domestic helical spring lock washer industry is currently experiencing material injury.
[82] Vice Chairman Watson does not reach a separate conclusion of material injury based solely upon the condition of the industry.
[83] 19 U.S.C. § 1677(7)(C)(iv)(I); Chaparral Steel Co. v. United States, 901 F.2d 1097, 1105 (Fed. Cir. 1990).
[84] Respondents' Post-Conference Brief at 15-18.

In assessing whether imports compete with each other and with the domestic like product, the Commission generally has considered four factors, including:

> (1) the degree of fungibility between the imports from different countries and between imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;
>
> (2) the presence of sales or offers to sell in the same geographical markets of imports from different countries and the domestic like product;
>
> (3) the existence of common or similar channels of distribution for imports from different countries and the domestic like product; and
>
> (4) whether the imports are simultaneously present in the market. [85]

While no single factor is determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the imports compete with each other and with the domestic like product. [86] Furthermore, only a "reasonable overlap" of competition is required.[87] Thus, the Commission has held that even if there is no identical domestic product that directly competes with a particular type of imported product within the scope of the investigation, imports from a particular country will be cumulated if they "collectively do compete with the domestic like product (and with other imports)."[88]

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[85] See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986), aff'd, Fundicao Tupy, S.A. v. United States, 678 F. Supp. 898 (CIT 1988), aff'd, 859 F.2d 915 (Fed. Cir. 1988).

[86] See, e.g., Granges Metallverken AB v. United States, 716 F.Supp. 17 (CIT 1989); Florex v. United States, 705 F.Supp. 582 (CIT 1989).

[87] See Wieland Werke, A.G. v. United States, 718 F. Supp. 50, 52); Granges Metallverken AB v. United States, 716 F. Supp. 17, 21, 22 (CIT 1989); Florex v. United States, 705 F. Supp. 582, 592 (CIT 1989).

[88] Steel Wire Rope from Argentina, Chile, India, Israel, Mexico, the

(continued...)

Parties to these investigations agree that carbon steel and stainless steel helical spring lock washers share the same mechanical function, overlapping channels of distribution, and method of production. Despite these similarities, Respondents assert that imports of the subject products from Taiwan should not be cumulated with those from China because imported lock washers from China are all carbon steel,[89] while lock washers from Taiwan are "almost exclusively" stainless steel.[90] Respondents urge that the distinction is important because, although carbon steel and stainless steel helical spring lock washers are sold in the same geographic markets at the same time, they are used for different purposes.[91] Where the non-corrosive characteristics of stainless steel are required, an end-user cannot substitute a carbon steel helical spring lock washer in that application. Similarly, where corrosion is not a concern, the cost differential between the two products would prevent substitution. Thus, Respondents assert, these products do not compete with each other and should not be cumulated.[92]

Petitioner maintains that the criteria for cumulation are met because imports of helical spring lock washers from China and Taiwan are both under investigation, compete with each other and the like product, and use the same distribution channels beyond the master distributor/importer levels.[93]

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[88] (...continued)
People's Republic of China, Taiwan, and Thailand, Inv. Nos. 731-TA-476-482 (Preliminary), USITC Pub. No. 2343 (December 1990) at 18.

[89] Respondents' Post-Conference Brief at 16-7; Transcript at 74.

[90] Respondents' Post-Conference Brief at 16. Note that while the data on Taiwanese imports are not complete due to a lack of questionnaire responses, Report at I-15, n.35., the data obtained in these investigations do not support Respondents' allegations. Report at I-20, Table 6.

[91] Respondents' Letter dated October 8, 1992; Respondents' Post-Conference Brief at 15-18; see Transcript at 100.

[92] Transcript at 100; Respondents' Post-Conference Brief at 15-18.

[93] Petitioner's Post-Conference Brief at 14-15.

Information gathered in these investigations indicates that both Taiwan and China produce carbon steel helical spring lock washers, although China does not appear to produce stainless steel helical spring lock washers.[94] Based on available information regarding Taiwanese production of all helical spring lock washers, there is a reasonable overlap of competition between Taiwanese and Chinese helical spring lock washers made of carbon steel. Therefore, for purposes of these preliminary investigations, the Commission has decided to cumulate imports of all helical spring lock washers from Taiwan and China. However, we will reexamine this issue in any final investigations.

V. Reasonable Indication of Material Injury by Reason of Allegedly LTFV Imports[95]

In determining whether there is a reasonable indication that the domestic industry is materially injured by reason of the imports under investigation, the statute directs the Commission to consider:

> (I) the volume of imports of the merchandise which is the subject of the investigation,
>
> (II) the effect of imports of that merchandise on prices in the United States for like products, and
>
> (III) the impact of imports of such merchandise on domestic producers of like products, but only in the context of production operations in the United States.[96]

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[94] Report at I-14, 15, Tables 3 and 4.

[95] In this discussion, all volume data is measured by quantity in pounds, not units, and is based upon Tables 2 and C-9 of the Report. See Report at I-13 and C-7. Tables 2 and C-9 tend to overstate import volume and penetration. See note 47, supra. The parties agree, however, that the degree of overstatement is much less for China and Taiwan than for all other import sources which are not subject to these investigations. Thus, the official statistics provide an adequate proxy for actual import data regarding helical spring lock washers from China and Taiwan for these preliminary investigations. See, Transcript at 129. In any final investigation, the Commission will seek complete questionnaire response coverage from producers and importers.

[96] 19 U.S.C. § 1677(7)(B)(i).

In making this determination, the Commission may consider "such other economic factors it deems relevant to the determination. . . ."[97] Although we may consider information that indicates that injury to the industry is caused by factors other than the allegedly LTFV imports, we do not weigh causes.[98] [99] [100]

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[97] 19 U.S.C. § 1677(7)(B).

[98] Chairman Newquist, Commissioner Rohr, and Commissioner Nuzum note that the Commission need not determine that imports are "the principal, a substantial or a significant cause of material injury." S. Rep. No. 249, 96th Cong., 1st Sess. 57 and 74 (1979). Rather, a finding that imports are a cause of material injury is sufficient. See, e.g., Metallverken Nederland, B.V. v. United States, 728 F. Supp 730, 741 (CIT 1989); Citrosuco Paulista S.A. v. United States, 704 F. Supp. 1075, 1101 (CIT 1988).

[99] Vice Chairman Watson notes that the courts have interpreted the statutory requirement that the Commission consider whether there is material injury "by reason of" the subject imports in a number of different ways. Compare, e.g., United Engineering & Forging v. United States, 779 F. Supp. 1375, 1391 (Ct. Int'l Trade 1991) ("rather it must determine whether unfairly-traded imports are contributing to such injury to the domestic industry. Such imports, therefore need not be the only cause of harm to the domestic industry" (citations omitted)); Metallverken Nederland B.V. v. United States, 728 F. Supp. 730, 741 (Ct. Int'l Trade 1989) (affirming a determination by two Commissioners that "the imports were a cause of material injury"); USX Corporation v. United States, 682 F. Supp. 60, 67 (Ct. Int'l Trade 1988) ("any causation analysis must have at its core, the issue of whether the imports at issue cause, in a non de minimis manner, the material injury to the industry . . .").

Accordingly, Vice Chairman Watson has decided to adhere to the standard articulated by Congress in the legislative history of the pertinent provisions, which states that the Commission must satisfy itself that, in light of all the information presented, there is a "sufficient causal link between the less-than-fair-value imports and the requisite injury." S. Rep. No. 249, 96th Cong., 1st Sess. 75 (1979).

[100] Commissioner Crawford and Commissioner Brunsdale note that the statute requires that the Commission determine whether a domestic industry is "materially injured by reason of" the allegedly LTFV imports. Many, if not most, domestic industries are subject to injury from more than one economic factor. Of these factors, there may be more than one that independently is causing material injury to the domestic industry. It is assumed in the legislative history that the "ITC will consider information which indicates that harm is caused by factors other than the less-than-fair-value imports." S. Rep. No. 249 at 75. However, the legislative history makes it clear that the Commission is not to weigh or prioritize the factors that are independently causing material injury. Id. at 74; H.R. Rep. No. 317 at 47. The Commission is not to determine if the allegedly LTFV imports are "the

(continued...)

By volume and value, subject imports increased each year from 1989 to 1991, and in the interim 1992 period as compared to the corresponding period in 1991.[101] [102] Market share by volume for subject imports increased each year from 1989 to 1991, while U.S. consumption decreased.[103] Market share by value, however, decreased slightly between 1989 and 1990, but increased in 1991 over the 1989 level.[104] Both market share, by volume and value, and consumption of the subject imports increased in the interim 1992 period compared to the corresponding period in 1991.[105]

Cumulated imports by quantity consistently exceeded 30 percent of U.S. consumption during the period of investigation.[106] This large and increasing share of apparent U.S. consumption (even while consumption decreased), suggests that the allegedly dumped subject imports have had an adverse effect on the domestic industry.[107] [108]

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[100] (...continued)
principal, a substantial or a significant cause of material injury." S. Rep. No. 249 at 74. Rather, it is to determine whether any injury "by reason of" the allegedly LTFV imports is material. That is, the Commission must determine if the subject imports are causing material injury to the domestic industry. "When determining the effect of imports on the domestic industry, the Commission must consider all relevant factors that can demonstrate if unfairly traded imports are materially injuring the domestic industry." S. Rep. No. 71, 100th Cong., 1st Sess. 116 (1987) (emphasis supplied).

[101] Report at Tables 2 and C-9.

[102] We note that Respondents assert that imports listed in the official statistics as being of Hong Kong origin are really Chinese products and should be treated as such in calculating imports from China. Transcript at 90, 128. No party to the investigations has knowledge or information of any Hong Kong producers of the subject merchandise. Transcript at 63, 128; see Report at I-26. We suggest that the Department of Commerce examine this issue.

[103] Report at C-7, Table C-9.

[104] Report at C-7, Table C-9.

[105] Report at C-7, Table C-9.

[106] Report at C-7, Table C-9.

[107] The record indicates that there are no quality differences that would significantly limit substitutability between imported and domestic helical spring lock washers of the same size and material. Report at I-37. Petition at 7 and Appendix 7; Transcript at 14, 87. This further strengthens the
(continued...)

Price data were requested for six helical spring lock washers types that are commonly sold by both the producer and importers to wholesalers and distributors.[109] Due to a poor response rate from many importers, however, these data are incomplete and inadequate. Comparing prices is further complicated by the multiple-tiered distribution system for helical spring lock washers in the United States. In particular, Petitioner asserts that its price data are for sales to master distributors, while importer sales data are generally for sales from master distributors to smaller distributors. If this is correct, price comparisons may not be meaningful since such comparisons must be made at comparable levels in the chain of distribution.[110] Because of these deficiencies in the price data, we place little weight on pricing information in these investigations. We intend to seek further information in this regard in the event of any final investigations.[111]

While the Commission was generally unable to confirm Petitioner's allegations of lost sales, the Commission contacted a number of purchasers of helical spring lock washers who indicated that they favor purchasing subject imports due to their lower prices.[112] [113]

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[107] (...continued)
likelihood that the high and increasing market share of the imports has had an adverse effect on the domestic industry.

[108] Commissioner Rohr concurs that this is a factor supporting a causal nexus between imports and the condition of the domestic industry, however, it is only one of several factors which the Commission considers.

[109] Report at I-38.

[110] Report at I-38, n.86.

[111] Commissioner Rohr and Commissioner Nuzum will also examine more closely the relationship of pricing and volume of imports to the financial performance of the industry.

[112] Report at I-46.

[113] Based on their analysis of the information in the record, Chairman Newquist and Commissioner Rohr conclude that there is a reasonable indication that the domestic helical spring lock washer industry in currently experiencing material injury.

CONCLUSION

For the reasons set forth above, we determine that there is a reasonable indication that the domestic helical spring lock washer industry is materially injured by reason of the subject imports from China and Taiwan.

INFORMATION OBTAINED IN THE INVESTIGATIONS

INTRODUCTION

On September 8, 1992, a petition was filed with the U.S. International Trade Commission (Commission) and the U.S. Department of Commerce (Commerce) by counsel for the Shakeproof Industrial Products Division, Illinois Tool Works (Shakeproof), Milwaukee, WI. The petition alleged that imports of certain helical spring lockwashers[1] from the People's Republic of China (China) and Taiwan are being sold in the United States at less than fair value (LTFV) and that an industry in the United States is being materially injured and is threatened with further material injury by reason of such imports.

Accordingly, effective September 8, 1992, the Commission instituted preliminary antidumping investigations under section 733 of the Tariff Act of 1930 to determine whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports of such merchandise into the United States.

The statute directs the Commission to make its preliminary determinations within 45 days after receipt of the petition or, in these investigations, by October 23, 1992. Notice of the institution of these investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of September 16, 1992.[2] Commerce published its notice of initiation in the Federal Register on October 5, 1992.[3] The Commission held a public conference in Washington, DC, on September 30, 1992, at which time all interested parties were allowed to present information and data for consideration by the Commission.[4] The Commission voted on these investigations on October 20, 1992.

A summary of the data collected in these investigations is presented in appendix C.

The Commission has not conducted previous investigations specifically concerning helical spring lockwashers; however, the Commission has examined the larger fasteners industry on several occasions. Details from these investigations are provided in table 1.

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[1] For purposes of these investigations, "certain helical spring lockwashers" consist of circular washers of carbon steel (including carbon alloy steel), or of stainless steel, whether or not heat treated or plated, having ends that are off line, and designed to function as a spring to compensate for developed looseness between component parts of a fastened assembly, to provide a hardened bearing surface, or to distribute load over a larger area for screws or bolts.

[2] 57 F.R. 42760.

[3] 57 F.R. 45765. Copies of the Commission's and Commerce's Federal Register notices are presented in appendix A.

[4] A list of the participants in the conference is presented in appendix B.

Table 1
Certain helical spring lockwashers: Previous and related investigations, 1975-92

Product	Investigation number	Date of issue	Publication No.	Result
Bolts, nuts, & screws of iron or steel....	TA-201-2.....	1975.....	USITC 747...	Negative Commission determination.
Bolts, nuts, & screws of iron or steel....	TA-201-27.....	1977.....	USITC 847...	(1)
Bolts, nuts, & screws of iron or steel....	TA-201-37.....	1978.....	USITC 924...	(2)
Bolts, nuts, & large screws of iron or steel.....	TA-203-11.....	1982.....	USITC 1193..	(3)
Bolts, nuts, & screws of iron or steel....	332-103.....	1979-80..	USITC 963, 979, 1000, 1020, 1042, 1052.	Report(s) to Congress.
Nuts, bolts, and screws: Japan.....	701-TA-151 (P)	1982	(4)	Terminated 3/18/82; petition withdrawn.

[1] The Commission made an affirmative injury determination and recommended imposition of an additional 30-percent ad valorem duty, declining to 20 percent by the end of the 5-year relief period. The President declined to accept the Commission recommendation.

[2] The Commission made an affirmative injury determination and recommended imposition of an additional 20-percent ad valorem duty, declining to 10 percent by the end of the 5-year relief period. Duties were imposed pursuant to a Presidential Proclamation of January 4, 1979.

[3] The Commission recommended against extension of import relief.

[4] No report issued.

Source: Various publications of the U.S. International Trade Commission.

THE NATURE AND EXTENT OF THE ALLEGED SALES AT LTFV

In order to calculate the estimated dumping margins for certain helical spring lockwashers imported from China and Taiwan, the petitioner compared the U.S. price of such lockwashers with their foreign market value.

China

The petitioner based U.S. price on specific price quotations, obtained via market research, for six heavily traded sizes of carbon steel helical spring lockwashers imported from China.[5] These prices were then converted to a per-pound basis and adjusted for U.S. import duty, insurance, and freight

[5] The petitioner selected both plain and plated varieties of these sizes.

charges. Because the petitioner alleged that, for purposes of these investigations, China was a state-controlled economy country, the petitioner based foreign market value on the constructed value of such or similar merchandise in a non-state-controlled-economy country at a level of economic development comparable with that of China. Accordingly, the petitioner compared U.S. sales prices to foreign market value constructed by valuing the factors of production (i.e., materials, labor, and overhead) used by the Chinese manufacturers based on factor cost information obtained from India, a country that the petitioner alleged was similar to China in terms of its economic development and a significant producer of lockwashers. A comparison of U.S. price to foreign market value yielded margins of 89.24 to 124.92 percent.

Taiwan

Petitioner's market research provided estimates of U.S. prices, based on purchase price, for both carbon steel and stainless steel helical spring lockwashers imported from Taiwan. For carbon steel helical spring lockwashers, estimates were obtained for plain and plated varieties of the six lockwasher sizes analyzed in the case of China (see above), and adjusted for U.S. duty, insurance, freight, and commissions. The petitioner made no adjustments to the quoted prices for stainless steel helical spring lockwashers, as prices were quoted on an f.o.b. Taiwan basis.[6]

Because the petitioner was unable to obtain price quotations for domestic sales of such products in Taiwan, it based foreign market value on constructed value, both for carbon and stainless steel helical spring lockwashers. Constructed value was calculated as the sum of material costs, labor and overhead costs, general expenses, packing costs, and profit.[7]

For carbon steel helical spring lockwashers, margins ranged between 6.88 and 29.25 percent. The petitioner's calculation for stainless steel helical spring lockwashers varied from 11.43 to 31.93 percent.

THE PRODUCTS

Description and Uses

Helical spring lockwashers are flattened, ring-shaped metal devices whose ends are cut in an off-line manner. This design provides spring or tension to assembled parts when such lockwashers are used as a seat for bolts, nuts, screws, and similar fasteners.[8] In addition to preventing movement or loss of

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[6] Price comparisons were made for 304- and 316-type stainless steel helical spring lockwashers.

[7] Material costs consist exclusively of the cost of carbon or stainless steel round wire, as appropriate.

[8] The vast majority of helical spring lockwashers (*** percent of current U.S. production) are manufactured from carbon steel or stainless steel, which are those helical spring lockwashers subject to these investigations. Other varieties include those made from copper, aluminum alloy, and phosphor bronze.

(continued...)

tension between assembled parts, helical spring lockwashers are used to distribute loads over an area greater than that provided by the fastener and to provide a hardened bearing surface that facilitates assembly and disassembly of fastened parts.

Helical spring lockwashers are generally recognized in the washer industry as being either light, regular, heavy, extra-heavy, or high-collar types, largely depending on the thickness or diameter of the wire used during manufacture and the intended application of the washer. For example, heavy, extra-heavy, and high-collar type helical spring lockwashers are manufactured from relatively heavy-gauge wire and used primarily with bolts and nuts to secure more rigid fastening assemblies.

Helical spring lockwashers are often referred to in the lockwasher industry as being either "standard" or "special" products. "Standard" types generally encompass those helical spring lockwashers having inside diameters of one-quarter inch to 1 inch and constitute the majority of the products supplied by China and Taiwan.[9] These lockwashers are described as "regular" and are manufactured primarily from carbon steel and stainless steel. "Special" helical spring lockwashers, on the other hand, include light, heavy, extra-heavy, and high-collar varieties. In addition, helical spring lockwashers that are either metric or made to unique customer specifications, or manufactured from materials such as bronze, brass, copper, and aluminum, are considered to be "special" products.[10]

Helical spring lockwashers are used in all types of fastening applications, such as appliances, toys, and lawnmowers. The largest consumers of these products are original-equipment manufacturers (such as the automotive and aerospace industries) that use helical spring lockwashers for assembling finished products.

Nonhelical spring lockwashers include such products as conical lockwashers, belleville washers, and disc and wave washers. They are used primarily in automotive applications. Their production differs from helical spring lockwashers primarily in that they are stamped from sheet steel, rather than being cut from lengths of wire. Parties to these investigations agree that imports of these products have been relatively insignificant.

Other types of washers that are commonly used with fasteners are tooth lockwashers and plain or flat washers. Tooth lockwashers differ from helical spring lockwashers in that they have bent teeth on either the external or internal surface of the washer. These teeth bite into the adjacent bearing

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[8] (...continued)
For ease of presentation, this section of the report will employ the term "helical spring lockwashers" to include all helical spring lockwashers regardless of metal content.

[9] Transcript of the public conference (transcript), pp. 19, 20.

[10] Products manufactured from metals other than carbon or stainless steel are not within the scope of Commerce's investigations; however, parties agree that such products should be included in the definition of like product. Petitioner's postconference brief, p. 11; Matthew T. McGrath, Barnes, Richardson, & Colburn letter to Paul Bardos, Acting Secretary to the Commission, Oct. 8, 1992.

work surface to prevent the bolt, nut, or screw from loosening or turning. Because tooth lockwashers generally provide more friction than helical spring lock washers, they are widely used in electronic equipment and appliances. They are also used in hidden applications or where their jagged appearance is not a concern to the user.

Plain or flat washers have no locking capabilities. These hardened circular steel washers are used largely to impart space, to protect a part from damage, to distribute a load more widely, to improve appearance, and to bridge oversize clearance holes. In some applications, plain or flat washers are used with locking-type washers to prevent the fastener from loosening under vibration.

Manufacturing Processes

The manufacture of helical spring lockwashers, regardless of metal content, begins with either green wire rod or processed wire, which is then shaped into a trapezoidal form by a series of rollers.[11] The wire proceeds to a machine that both coils the wire around a long metal shaft termed an "arbor" and then cuts it. The wire can be cut in either of two ways. The slower way is the "up-and-down" or "reciprocal" method, in which a blade cuts through the coil. The faster method uses spinning rotary blades.[12] After the cutting operation, the unfinished lockwashers are placed in a furnace, are heated to 5,000 degrees Fahrenheit, and are quenched, washed, and further tempered. These processes impart the spring properties that enable the lockwashers to maintain tension when flattened by fasteners. Finally, the lockwashers may be treated with a rust inhibitor, plated with zinc, or both, and are packed for shipment. The products are tested and inspected at various stages during the manufacturing process, largely to ensure the exactness of inside and outside diameters.

The manufacturing technology used to produce helical spring lockwashers in China and Taiwan is widely available and is essentially the same as that used in the United States. In China, however, the coiling and cutting of the wire is done by different pieces of machinery at separate stages in the process.

Interchangeability

Parties to these investigations agree that helical spring lockwashers produced in the United States are fully fungible and interchangeable with those imported from China and Taiwan. Further, with regard to carbon steel helical spring lockwashers, buyers generally do not differentiate between products whether sourced from China or Taiwan.[13] Also, as noted above, although they serve a similar purpose to that of helical spring lockwashers,

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[11] The term "green rod" refers to raw, unfinished, or unprocessed rod from the rod mill.

[12] The output using rotary blades can average *** per minute, whereas output using reciprocal cutting rarely exceeds *** per minute.

[13] China exports very few, if any, stainless steel helical spring lockwashers to the United States. Transcript, p. 127.

nonhelical spring lockwashers and tooth lockwashers are produced using a completely different process.[14] Large consumers, such as original-equipment manufacturers, design their products to use a specific kind of lockwasher and do not consider helical spring lockwashers and other types of lockwashers to be interchangeable. Substitutability of these products would occur only at the design stage, where manufacturers of products that incorporate lockwashers must decide which type of lockwasher to use. Once designed into a "downstream" product, such manufacturers would not substitute a tooth lockwasher, for example, for a helical spring lockwasher.[15]

U.S. Tariff Treatment

Imports of helical spring lockwashers subject to these investigations are provided for in subheading 7318.21.00 of the Harmonized Tariff Schedules (HTS) (covering nonthreaded articles, specifically spring washers and other lock washers). The column 1-general (most-favored-nation) rate of duty for these imported products is 5.8 percent ad valorem.

U.S. Producers

According to the petition, in 1980 there were seven U.S. producers of helical spring lockwashers.[16] Shakeproof identified four U.S. firms that it believed produced certain helical spring lockwashers during 1989-92: itself (including the former Mellowes operation), Crest Products (Crest), Lexington, KY; Beall Manufacturing (Beall), East Alton, IL; and Standard Lockwasher & Manufacturing Co. (Stanlok), Worcester, MA. Shakeproof noted, however, that currently it is the only remaining helical spring lockwasher manufacturer in the United States. Stanlok ceased production in 1988; Beall, in November 1991, when its assets were purchased by Shakeproof; and Crest, in 1992.

The Commission sent questionnaires to the four producers identified in the petition as producing helical spring lockwashers during 1989-92 and also sent questionnaires to additional producers suspected of producing other types of lockwashers, such as tooth lockwashers and nonhelical spring lockwashers. The petitioner did not provide a list of firms producing other types of lockwashers; accordingly, on the basis of review of various business digests such as the Thomas Register, the Commission sent 51 additional questionnaires to firms suspected of producing nonhelical spring lockwashers or tooth lockwashers. Of the 32 companies that responded, only 1 (Shakeproof) could provide usable data on helical spring lockwashers.[17] Twenty-nine firms reported that they did not produce any type of lockwashers; many indicated that they distribute lockwashers. Accordingly, 23 companies did not respond

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[14] In particular, they are formed from sheet material on stamping machines, rather than cut from wire as are helical spring lockwashers.

[15] Petition, p. 8; Interview with Joe Musuraca, Shakeproof, Elgin, IL, Sept. 15, 1992.

[16] Petition, p. 2.

[17] One firm, ***, provided usable data on nonhelical spring lockwashers. *** indicated support for the petition.

to the Commission's producer questionnaire.[18] Beall did not provide usable data in response to the Commission's questionnaire.[19]

Shakeproof is one of over 100 divisions of Illinois Tool Works (ITW), a $2.6 billion, highly diversified company that manufactures a wide variety of industrial products ranging from fasteners to plastic packaging. ITW began operations in 1912 in Chicago manufacturing metal-cutting equipment and gear assemblies. The tooth lockwasher, developed in 1923, was ITW's first major product innovation; the Shakeproof division, established first in Chicago and later in Elgin, IL, dates from that time. Helical spring lockwashers did not become part of Shakeproof's product line until April 1991, when Shakeproof bought the Mellowes Co., Milwaukee, WI, which previously was owned by Charter Manufacturing Co. Currently, Shakeproof produces helical spring lockwashers exclusively in the old Mellowes Milwaukee facility and produces tooth lockwashers and small quantities of nonhelical spring lockwashers in Elgin. Lockwashers are ***.

In November 1991, shortly after purchasing the Mellowes plant, Shakeproof purchased the assets of Beall's helical spring lockwasher operation. Shakeproof ***.[20] Other than the Beall and Mellowes acquisitions, Shakeproof reported no notable changes in its operations during the period of investigation.[21]

At the conference, respondents indicated that an additional U.S. firm, Marvec, Inc., Philadelphia, PA, has recently begun to produce, or has plans to produce, the full range of helical spring lockwashers. The Commission contacted Marvec to verify this assertion and discuss Marvec's business plans. Marvec indicated that ***.[22]

U.S. Importers

Imports of certain helical spring lockwashers enter the United States under HTS item No. 7318.21.00, entitled "Non-threaded articles: Spring washers and other lock washers"(sic). Accordingly, this tariff item also

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[18] This group includes Crest, reportedly a producer of helical spring lockwashers during the period for which data were collected. Another firm, ***, stated that it produces helical spring lockwashers; the extent and significance of this production, however, was not reported and is unknown. Employee, ***, telephone interview, Oct. 9, 1992. Except for these producers, there is no indication that any of the firms refusing to respond to the questionnaire were significant producers of certain helical spring lockwashers or other types of lockwashers during the period examined. Eleven of the nonresponding firms indicated that they do not manufacture, but rather distribute, helical spring lockwashers.

[19] Beall ***. Beall ***. ***.

[20] Beall ***. Questionnaire response of Shakeproof, p. 7.

[21] Transcript, p. 49.

[22] Conversation with ***. According to ***, ***.

provides for other types of lockwashers, such as nonhelical spring lockwashers and tooth lockwashers.[23] The Commission sent importers' questionnaires to 70 companies importing more than $50,000 annually under HTS item No. 7318.21.00 in any calendar year during 1989-91, according to the Customs Net Import File. The Commission's mailing list also included those importers named in the petition.[24] The Commission received responses from 46 companies, 28 of which provided usable data on imports of helical and nonhelical spring lockwashers, and tooth lockwashers.[25] Eleven companies reported that they did not import merchandise corresponding to the product definitions in the Commission's questionnaire. Twenty-two firms reported imports of carbon and/or stainless steel helical spring lockwashers; 14 firms reported imports of such merchandise from China and 8 firms from Taiwan. Seven companies reported imports of nonhelical spring lockwashers, and seven firms reported imports of tooth lockwashers. The majority of responding firms reported imports exclusively from China and Taiwan; other import sources included France, Germany, and Japan.

Importers of helical spring lockwashers are generally firms that warehouse and then distribute the product to other, smaller, distributors or to end users. Several responding companies, however, are manufacturers that import lockwashers directly for use in their production processes. Of the 28 companies that provided usable data in response to the questionnaire, 21 were wholesaler/distributors and 7 were manufacturer/end users.[26] Imports from China and Taiwan tend to be heavily represented in the wholesaler/distributor

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[23] It is unclear from the record of these investigations whether, in addition to nonhelical spring lockwashers and tooth lockwashers, there are other types of "lockwashers" that are provided for under this tariff item. Several firms, in responding to the Commission's importer questionnaire, reported that they imported neither tooth lockwashers nor spring lockwashers during 1989-92 but did import other items classifiable under this tariff item, such as "flat lockwashers." ***. At the conference, however, petitioner expressed doubt as to the existence of such a product. Transcript, p. 45. Petitioner indicated that flat washers, per se, would ordinarily be classified in a different tariff category, HTS item No. 7318.22.00, and noted that the value of such imports is over 10 times higher than those entering under item No. 7318.21.00. Transcript, p. 13.

[24] The petition named 27 firms as importing from China and 7 firms importing from Taiwan. Several of the firms named in the petition had Canadian addresses. A review of the Customs Net Import File, however, indicated that none of the Canadian firms entered merchandise under HTS item No. 7318.21.00 during 1989-92.

[25] Accordingly, 24 companies did not respond to the questionnaire, and 7 additional firms provided data that were incomplete or otherwise unusable. Companies known to be significant importers of certain helical spring lockwashers from China and/or Taiwan and who either did not respond or provided unusable data include Sun West Fasteners, Inc. (Sun West), Soule, Blake, & Wechsler (Soule), ***, Globe Fasteners (Globe), Inc., Reynolds Fasteners (Reynolds), Inc., ***, and ***. Sun West, Globe, Soule, and Reynolds are parties to the Commission's investigations.

[26] The membership of the American Association of Fastener Importers, which testified at the conference in opposition to the petition, is exclusively made up of wholesaler/distributors.

category. Manufacturers, by contrast, tended to import from their overseas parent companies in Europe or Japan.

Porteous Fastener Co. (Porteous), Carson, CA, is *** U.S. importer of certain helical spring lockwashers from China and Taiwan, accounting for *** percent of reported imports of certain helical spring lockwashers from those sources in 1991. During 1989-92 Porteous imported carbon steel helical spring lockwashers exclusively, the vast majority of which originated in China.[27] Porteous classified itself as a "master distributor," whose role it is to keep large stocks of standard items, and who generally sells to other, smaller distributors. Porteous generally sources its lockwashers from the Hangzhou Spring Washer Factory in Zhejiang, China, and ships to all locations in the United States from its central facility in southern California.[28] Based on official U.S. import statistics, Porteous' imports of the subject merchandise from China constitute *** percent, by value, of 1991 imports from China under HTS item No. 7318.21.00.

Several responding importers indicated that they are subsidiaries or divisions of larger firms. Those firms and their corporate parents are listed in the tabulation below:

Firm	Parent Company	Percent ownership
*	*	*
*	*	*
*	*	*
*	*	*

APPARENT U.S. CONSUMPTION

This report presents data concerning apparent U.S. consumption of certain helical spring lockwashers as compiled from a combination of responses to Commission questionnaires and from official Commerce statistics. The petitioner, Shakeproof, was the only U.S. producer of certain helical spring lockwashers to provide usable data in response to the Commission's producer questionnaire.[29] According to the petition, Shakeproof accounts for 100 percent of current U.S. shipments of the subject merchandise, and, with Mellowes, accounted for a substantial majority of such shipments during 1989-91, given the relatively small size of the other two companies (Crest and Beall) that operated during that period. Parties opposing the petition did not dispute Shakeproof's assertion that, in essence, its operations constitute the industry producing helical spring lockwashers, including those subject to investigation. Further, there is no reliable source of public data concerning the U.S. helical spring lockwasher industry.[30] Accordingly, data on U.S.

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[27] At the conference, Bruce Darling of Porteous noted that his firm stocks only carbon steel helical spring lockwashers; it does not deal in the stainless steel variety. Transcript, p. 138. Porteous also ***.

[28] Porteous also has a small export business in Canada and Mexico.

[29] Shakeproof also provided data on Mellowes' operations prior to its purchase in April 1991, but not on Beall's operations.

[30] Transcript, p. 52. U.S. Census Bureau statistics are available only at the level of "washers," which includes flat washers, tooth lockwashers, non-helical spring lockwashers, and other products not subject to investigation.

shipments of helical spring lockwashers are limited to data supplied by Shakeproof on its own (and Mellowes') operations.

Questionnaire-based data provided by importers are considerably more extensive; the Commission received usable data on lockwashers from 28 firms.[31] Such data, however, make up only 21 percent, by value, of 1989-91 official Commerce statistics under HTS item No. 7318.21.00.[32] Even though HTS item No. 7318.21.00 contains articles not subject to investigation, parties are in agreement that, at least for imports from China and Taiwan, official Commerce statistics would be an acceptable proxy for data on shipments of imports of certain helical spring lockwashers.[33] As a result, import data used to estimate apparent consumption of helical spring lockwashers and market penetration by imports of the subject products are based on official Commerce statistics. Such data are presented in table 2.[34]

The Commission used questionnaire data to measure apparent consumption and U.S. market penetration by imports of carbon steel and stainless steel helical spring lockwashers because the HTS does not classify these items separately. Those data are presented in tables 3 and 4. Estimates of apparent consumption for all varieties of spring lockwashers (including nonhelical spring lockwashers) and tooth lockwashers are presented in tables C-11 and C-12.

All Helical Spring Lockwashers

Apparent U.S. consumption of all varieties of helical spring lockwashers declined steadily in quantity terms from 1989 to 1991, by *** percent overall (table 2). In value terms the overall trend in consumption was also downward, but consumption actually rose in 1990 over 1989 levels, and the overall decline over the 3-year period was only *** percent. Both in terms of quantity and value, apparent consumption rebounded somewhat, however, in January-June 1992 when compared with the corresponding period of 1991.

In terms of quantity, imports of certain helical spring lockwashers from China and Taiwan increased as a share of consumption of all helical spring lockwashers from *** percent in 1989 to *** percent in 1991. In terms of value, this ratio also demonstrated an overall increase, from *** percent in 1989 to *** percent in 1991. Imports of certain helical spring lockwashers from the subject countries also gained market share when the January-June periods of 1991 and 1992 are compared. In terms of both quantity and value, Shakeproof lost market share over the 1989-91 period but regained some market share when the 6-month periods are compared.

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[31] Twenty-two of those firms reported data on the products subject to investigation.

[32] Questionnaire coverage for imports from China and Taiwan is, however, somewhat better, accounting for 30 percent, by value, of 1989-91 imports under HTS item No. 7318.21.00.

[33] Transcript, p. 60.

[34] Data on estimated apparent consumption of only the certain helical spring lockwashers subject to investigation (i.e., carbon and stainless steel helical spring lockwashers) and market penetration by imports of those products are presented in appendix D.

Table 2
Helical spring lockwashers:[1] Shakeproof's shipments, U.S. imports, and apparent consumption, 1989-91, January-June 1991, and January-June 1992

Item	1989	1990	1991	January-June-- 1991	1992
	Quantity (1,000 pounds)				
U.S. producers' shipments....	***	***	***	***	***
Imports of certain helical spring lockwashers from--					
China.....	6,385	6,759	6,966	2,595	3,392
Taiwan.....	1,553	1,246	1,415	679	695
Subtotal.....	7,938	8,005	8,380	3,274	4,087
All other sources[2].....	3,956	2,683	2,166	1,160	876
Total.....	11,894	10,688	10,546	4,434	4,963
U.S. consumption.....	***	***	***	***	***
	As a share of the quantity of apparent consumption (percent)				
U.S. producers' shipments....	***	***	***	***	***
Imports of certain helical spring lockwashers from--					
China.....	***	***	***	***	***
Taiwan.....	***	***	***	***	***
Subtotal.....	***	***	***	***	***
All other sources.....	***	***	***	***	***
Total.....	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' shipments....	***	***	***	***	***
Imports of certain helical spring lockwashers from--					
China.....	2,670	2,794	2,729	1,016	1,377
Taiwan.....	2,091	2,163	2,504	1,253	1,285
Subtotal.....	4,761	4,957	5,232	2,269	2,661
All other sources[2].....	6,457	8,100	8,047	4,403	4,003
Total.....	11,218	13,057	13,279	6,672	6,665
U.S. consumption.....	***	***	***	***	***
	As a share of the value of apparent consumption (percent)				
U.S. producers' shipments....	***	***	***	***	***
Imports of certain helical spring lockwashers from--					
China.....	***	***	***	***	***
Taiwan.....	***	***	***	***	***
Subtotal.....	***	***	***	***	***
All other sources.....	***	***	***	***	***
Total.....	***	***	***	***	***

[1] Includes all helical spring lockwashers regardless of metal content.
[2] As noted above, these data may be significantly overstated. Parties agree that the degree of overstatement for China and Taiwan, however, is considerably less.

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 3
Carbon steel helical spring lockwashers: Shakeproof's shipments, U.S. shipments of imports from China, Taiwan, and all other sources, and apparent consumption, 1989-91, January-June 1991, and January-June 1992

Item	1989	1990	1991	January-June-- 1991	1992
	Quantity (1,000 units)				
U.S. producers' shipments...	***	***	***	***	***
Shipments of imports from--					
China.....	448,235	***	736,254	***	342,840
Taiwan.....	12,752	***	38,699	***	17,969
Subtotal.....	460,987	614,382	774,953	403,498	360,809
All other sources.....	***	***	***	***	***
Total.....	***	***	***	***	***
U.S. consumption.....	2,742,720	2,796,187	2,604,207	1,360,882	1,459,893
	As a share of the quantity of apparent consumption (percent)				
U.S. producers' shipments...	***	***	***	***	***
Shipments of imports from--					
China.....	16.3	***	28.3	***	23.5
Taiwan.....	0.5	***	1.5	***	1.2
Subtotal.....	16.8	22.0	29.8	29.6	24.7
All other sources.....	***	***	***	***	***
Total imports.....	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' shipments...	***	***	***	***	***
Shipments of imports from--					
China.....	1,660	***	2,805	***	1,447
Taiwan.....	39	***	60	***	30
Subtotal.....	1,699	2,663	2,865	1,445	1,477
All other sources.....	***	***	***	***	***
Total.....	***	***	***	***	***
U.S. consumption.....	12,391	13,268	12,147	6,285	7,005
	As a share of the value of apparent consumption (percent)				
U.S. producers' shipments...	***	***	***	***	***
Shipments of imports from--					
China.....	13.4	***	23.1	***	20.7
Taiwan.....	0.3	***	0.5	***	0.4
Subtotal.....	13.7	20.1	23.6	23.0	21.1
All other sources.....	***	***	***	***	***
Total imports.....	***	***	***	***	***

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 4
Stainless steel helical spring lockwashers: Shakeproof's shipments, U.S. shipments of imports from China, Taiwan, and all other sources, and apparent consumption, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Carbon Steel Helical Spring Lockwashers

When the market for carbon steel helical spring lockwashers is considered, apparent U.S. consumption first increased from 1989 to 1990, then declined fairly sharply in 1991, to a level below that of 1989 (table 3). Consumption figures are shown to have increased again, however, when the January-June periods of 1991 and 1992 are compared. Shakeproof lost over *** points of market share in quantity terms and *** points in terms of value over the 1989-91 period. These trends reversed themselves in January-June 1992, though, when compared with January-June 1991. In terms of value, subject imports' market share nearly doubled from 14 percent in 1989 to 24 percent in 1991, but declined in January-June 1992 from the January-June 1991 level. The market shares of subject imports show a similar trend when quantity-based data are considered. The vast majority (more than 96 percent) of the volume of subject imports of carbon steel helical spring lockwashers were from China throughout the period examined.

Stainless Steel Helical Spring Lockwashers

Apparent consumption of stainless steel helical spring lockwashers, when viewed separately, declined throughout the 1989-91 period, both in terms of quantity and value (table 4). Consumption recovered, but rather slightly, in January-June 1992 from its January-June 1991 level. Shakeproof's share of the market for stainless steel helical spring lockwashers, which increased slightly in 1990, fell in 1991, and then recovered during January-June 1992 compared with January-June 1991, remained extremely high, never falling below *** percent. Reported shipments of imports of this product were limited to those from Taiwan and nonsubject sources. As such shipments were minimal, their market share varied widely.[35]

Parties characterized the demand for helical spring lockwashers as a derived demand.[36] Thus, consumption of lockwashers is driven by the consumption of products that incorporate lockwashers. Demand for lockwashers generally follows the level of overall economic activity, but swings in demand are tempered somewhat by the existence of a maintenance and replacement market; thus, in slow economic times, there will still be a consistent core

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[35] Taiwan's market share rose sharply in 1991, before declining in January-June 1992 when compared with January-June 1991. Levels and trends in these data, however, should be viewed with caution given the poor response rate of firms importing from Taiwan.

[36] See, e.g., transcript, p. 50.

demand for lockwashers.[37] Parties agreed that the lockwasher industry is not a dynamic one, and that no significant changes in demand are anticipated, but disagreed somewhat as to the trend in consumption since 1989. The petitioner characterized demand for lockwashers as fairly flat.[38] Importers' views on this subject were split; some detected a decline in demand since 1989, while others reported a surge in demand, at least for their products.[39] Shakeproof predicts an upturn in non-U.S. lockwasher demand, however, as more lockwasher-using industries move offshore. Respondents reported that as China industrializes, lockwasher consumption in the Chinese domestic market is expected to increase as well.[40]

As with most mature industries, the lockwasher industry is a global industry, but one that comprises very few firms. Although there are established lockwasher industries in most developed countries, firms generally limit their operations to their domestic markets. Few firms have multinational operations.[41] Shakeproof perceives a stratification of the global market, however, alleging that China and Taiwan tend to concentrate on supplying standard lockwasher sizes and types, leaving domestic companies to supply the special, low-volume varieties.[42] Shakeproof views this stratification as a long-term problem because of the static nature of technology in lockwashers; applications are quite standardized, and the industry has been characterized by few technological shifts in recent years.[43]

U.S. IMPORTS

As noted above in the section of this report entitled "U.S. importers," imports of helical spring lockwashers, and thus the specific varieties of helical spring lockwashers subject to investigation, are provided for under a basket tariff category (HTS item No. 7318.21.00) that also provides for tooth lockwashers and other types of lockwashers. Nevertheless, import data presented below are based on official U.S. import statistics. Parties both in support of and in opposition to the petition agree that, particularly in the case of China, official statistics would be an acceptable proxy for imports of the types of helical spring lockwashers subject to these investigations because virtually all the imports entering under HTS item No. 7318.21.00 from

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[37] Interview with Joe Musuraca, Shakeproof, Elgin, IL, Sept. 15, 1992; transcript, p. 115; respondents' postconference brief, p. 6.

[38] Questionnaire response of Shakeproof, p. 45; transcript, p. 51.

[39] In their questionnaire responses, *** reported declining demand for their products, whereas *** and *** indicated increasing demand. At the conference, however, an official of Porteous alleged that lockwashers are becoming less evident in certain applications due to the availability of substitute products such as torque locknuts and adhesives. Transcript, p. 94; also see respondents' postconference brief, p. 12.

[40] Transcript, p. 115.

[41] For example, ***. Interview with Joe Musuraca, Shakeproof, Elgin, IL, Sept. 15, 1992.

[42] Transcript, pp. 36, 67. Respondents also commented that several of their members import stainless steel helical spring lockwashers from Europe. Transcript, p. 121.

[43] Shakeproof indicated that ***. Interview with Joe Musuraca, Shakeproof, Milwaukee, WI, Sept. 16, 1992; transcript, p. 124.

China and Taiwan are either carbon or stainless steel helical spring lockwashers.[44] Further, the Commission did not receive questionnaire responses from 4 of the 10 largest importers of lockwashers under HTS item No. 7318.21.00 during 1989-92 and, consequently, data on imports from China and Taiwan of all varieties of lockwashers reported in response to Commission questionnaires constitute only 32 percent, by value, of total imports from those countries in 1991. Because official statistics, however, do not distinguish among lockwashers on the basis of metal content, data on imports of carbon and stainless steel helical spring lockwashers are based on responses to Commission questionnaires.

Certain Helical Spring Lockwashers

The volume of imports of certain helical spring lockwashers from the subject countries increased overall during the period of investigation (table 5). The increase during the 1989-91 period, however, was far less marked than that evidenced when the January-June periods of 1991 and 1992 are compared. A comparison of the 6-month periods yields an increase of 25 percent (with China accounting for almost all of the increase), whereas import volume grew by only 6 percent from 1989 to 1991.[45] Value-based data show generally similar trends, but increases were less marked when the 6-month periods are compared. The volume of imports of certain helical spring lockwashers from other sources (except Hong Kong) generally declined throughout the period of investigation but fluctuated in value and had significantly higher unit values. Unit values of imports from China showed no particular trend, whereas those from Taiwan rose steadily.

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[44] The petition asserted that virtually all imports under HTS item No. 7318.21.00 from China are carbon steel helical spring lockwashers, and at least 90 percent of such imports from Taiwan are carbon and/or stainless steel helical spring lockwashers (primarily stainless steel). Petition, p. 4; transcript, p. 60. At the conference, respondents agreed with this assertion regarding China; as for Taiwan, however, respondents allege that official data may be overstated due to significant imports of tooth lockwashers. Transcript, p. 129.

[45] Imports from Taiwan actually decreased over the 3-year period. At the conference, petitioners alleged that this recent surge in imports is likely to continue, as the July 1992 import volume of the subject products from China was extremely high. Transcript, p. 16.

Table 5
Nonthreaded articles: Spring washers and other lockwashers: U.S. imports, by sources, 1989-91, January-June 1991, and January-June 1992[1]

Source	1989	1990	1991	Jan.-June-- 1991	1992
	Quantity (1,000 pounds)				
China	6,385	6,759	6,966	2,595	3,392
Taiwan	1,553	1,246	1,415	679	695
Subtotal	7,938	8,005	8,380	3,274	4,087
Hong Kong	1,770	371	354	254	117
All other countries	2,186	2,312	1,812	906	759
Total imports	11,894	10,688	10,546	4,434	4,963
	Value (1,000 dollars)[2]				
China	2,670	2,794	2,729	1,016	1,377
Taiwan	2,091	2,163	2,504	1,253	1,285
Subtotal	4,761	4,957	5,233	2,269	2,662
Hong Kong	824	199	166	124	52
All other countries	5,633	7,901	7,880	4,279	3,951
Total imports	11,218	13,057	13,279	6,672	6,665
	Unit value (dollars/pound)[3]				
China	$0.42	$0.41	$0.39	$0.39	$0.41
Taiwan	1.35	1.74	1.77	1.84	1.85
Average	0.60	0.62	0.62	0.69	0.65
Hong Kong	0.47	0.54	0.47	0.49	0.44
All other countries	2.58	3.42	4.35	4.72	5.21
Average, all imports	0.94	1.22	1.26	1.50	1.34

[1] Includes all imports under HTS item 7318.21.00.
[2] C.i.f. duty-paid value.
[3] Calculated from unrounded data.

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

As seen in table 5, imports under HTS item No. 7318.21.00 from nonsubject sources are substantial. Major sources include Germany, Japan, and Canada.[46] Respondents noted that in 1989, imports classified by Customs as originating in Hong Kong were actually produced in China and that they should therefore be included in the totals for China.[47] In its questionnaire the Commission also requested importers to provide information on their company transfers, domestic shipments, and export shipments of imported merchandise. The vast majority of importers reported sales as domestic shipments, with only one firm, ***, reporting any export shipments.[48] The Commission also requested U.S. producers to respond to its importer questionnaire. Shakeproof did not import the subject merchandise during the period of investigation.[49]

Carbon Steel Helical Spring Lockwashers

Imports of carbon steel helical spring lockwashers from China increased sharply between 1989 and 1990, by *** percent in terms of quantity, but declined slightly in 1991 (table 6).[50] Imports from Taiwan were small but increased rapidly. When the January-June periods are compared, imports from China jumped by *** percent, but imports from Taiwan declined by 32 percent.

Value-based data on combined imports show very similar trends; i.e., a sharp increase in 1990, followed by a small decline in 1991, with subsequent strong growth in January-June 1992, when compared with the corresponding period of 1991. Again, when the 6-month periods are compared, the value of imports from Taiwan declined, whereas the value of imports from China increased. Unit values of combined imports increased very slightly between 1989 and 1991, then rose by over 20 percent in January-June 1992 when contrasted with January-June 1991. Between 1989 and 1991, unit values of imports from China rose, while unit values of imports from Taiwan fell by nearly 50 percent.

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[46] Respondents, however, stated at the conference that for the time being, China and Taiwan are the primary import sources for the certain helical spring lockwashers subject to investigation, and that this pattern of sourcing is not expected to change in the near future. Transcript, p. 121.

[47] Transcript, p. 90; respondent's postconference brief, p. 18. Respondents could not, however, explain why, after 1989, Customs would have changed its country-of-origin determinations for imports from Hong Kong. Rather, respondents suggested that the imports in question had simply been misidentified by the Hong Kong trading company, and they pointed out that the unit values of the imports closely approximated those for shipments from China. For purposes of this report, no changes have been made in official U.S. import statistics.

[48] These shipments accounted for less than 5 percent of its total shipments.

[49] Transcript, p. 15.

[50] The Commission collected data in questionnaires based on thousands of units. By contrast, official Commerce data measure units in terms of kilograms.

Table 6
Certain helical spring lockwashers: U.S. imports, by products and sources, 1989-91, January-June 1991, and January-June 1992

Item	1989	1990	1991	Jan.-June-- 1991	1992
	Quantity (1,000 units)				
Carbon steel helical spring lockwashers:					
China	513,836	***	643,977	***	378,466
Taiwan	***	***	***	***	***
Subtotal	***	***	***	***	***
All other sources[1]	***	***	***	***	***
Total	***	698,404	***	***	401,786
Stainless steel helical spring lockwashers:					
China	0	0	0	0	0
Taiwan	***	***	***	***	***
Subtotal	***	***	***	***	***
All other sources[1]	***	***	***	***	***
Total	***	1,056	***	***	***
Certain helical spring lockwashers:					
China	513,836	***	643,977	***	378,466
Taiwan	14,280	***	47,834	***	19,885
Subtotal	528,116	691,047	691,811	270,105	398,351
All other sources[1]	***	8,413	8,274	3,983	***
Total	***	699,460	700,085	274,088	***
	Value (1,000 dollars)[2]				
Carbon steel helical spring lockwashers:					
China	1,204	***	1,575	529	991
Taiwan	***	***	***	***	***
Subtotal	***	***	***	***	***
All other sources[1]	***	***	***	***	***
Total	***	***	***	***	***
Stainless steel helical spring lockwashers:					
China	0	0	0	0	0
Taiwan	***	***	***	***	***
Subtotal	***	***	***	***	***
All other sources[1]	***	***	***	***	***
Total	***	***	98	***	44
Certain helical spring lockwashers:					
China	1,204	***	1,575	529	991
Taiwan	53	***	135	80	54
Subtotal	1,257	1,646	1,710	609	1,045
All other sources[1]	132	304	***	***	***
Total	1,389	1,950	***	***	***

See footnotes at end of table.

Table 6--Continued
Certain helical spring lockwashers: U.S. imports, by products and sources, 1989-91, January-June 1991, and January-June 1992

Item	1989	1990	1991	Jan.-June-- 1991	Jan.-June-- 1992
	Unit value (per 1,000 units)				
Carbon steel helical spring lockwashers:					
China	$2.34	$2.40	$2.45	$***	$2.62
Taiwan	2.67	1.74	1.38	1.44	1.52
Average	2.35	2.38	2.38	2.14	2.57
All other sources[1]	9.48	35.84	38.02	38.86	42.03
Average	2.52	***	2.79	2.65	***
Stainless steel helical spring lockwashers:					
China	([3])	([3])	([3])	([3])	([3])
Taiwan	12.43	9.26	9.27	9.33	17.15
Average	12.43	9.26	9.27	9.33	17.15
All other sources[1]	41.53	40.70	39.08	41.47	52.79
Average	17.38	***	***	10.85	***
Certain helical spring lockwashers:					
China	2.34	2.40	2.45	***	2.62
Taiwan	3.71	1.92	2.82	***	2.72
Average	2.38	2.38	2.47	2.25	2.62
All other sources[1]	***	36.13	***	***	42.72
Average	***	2.79	***	***	3.15

[1] Primarily from Germany and Japan.
[2] C.i.f., duty-paid.
[3] Not applicable.

Note.--Unit values calculated using data of firms providing both quantity and value information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Stainless Steel Helical Spring Lockwashers

Imports of stainless steel helical spring lockwashers reported in response to Commission questionnaires were very small and fluctuated widely throughout the period of investigation. Both the quantity and value of imports from all sources fell in 1990, then nearly quadrupled in 1991. Imports fell in January-June 1992 when compared with the corresponding months of 1991. Imports from Taiwan followed trends that were similar to those for imports from all sources.[51]

[51] There were no reported imports of stainless steel helical spring lockwashers from China during the period examined.

Unit values of imports of these products from Taiwan fell markedly between 1989 and 1990, then remained virtually constant in 1991. These unit values jumped substantially in January-June 1992 compared with those in the corresponding period in 1991.

U.S. IMPORTERS' INVENTORIES

Of the 22 firms reporting imports of the subject helical spring lockwashers, 13 also reported end-of-period inventories of those imports. These data are presented in table 7.

*** inventories of imports from Taiwan were ***. End-of-period inventories of certain helical spring lockwashers from China were high throughout the period examined and increased strongly between 1989 and 1990, but in 1991 they retreated to slightly below their 1989 level. When the January-June periods of 1991 and 1992 are compared, inventory levels for both countries increased markedly, both by themselves and in relation to shipments. Because inventories of stainless steel helical spring lockwashers were so minimal throughout the period, movements in inventories of carbon steel helical spring lockwashers parallel those of the combined category.

Importers responding to the Commission's questionnaire generally reported shorter leadtimes on stock items than the 1-week estimate provided by Shakeproof. Three importers indicated that they could provide immediate delivery of high-volume stock items, and the remaining firms generally promise delivery within 3 to 5 days.[52] On special made-to-order items, however, Shakeproof claimed a turnaround time of 6 to 8 weeks, as opposed to 4 months at best for importers from China or Taiwan.[53] Importers, though, indicated that they sell almost exclusively from stock.[54] Inventory is kept by part and is not segregated by customer or by country of origin.[55] Importers are considerably more likely to keep inventories than Shakeproof, as seen by comparing table 7 with table 12.

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[52] At the conference, an importer from China claimed a 1-day turnaround on stock items. Transcript, p. 124.

[53] Transcript, p. 88. The quickest delivery in China is offered by the Hangzhou factory, according to Porteous. Other Chinese factories, according to Porteous, offer leadtimes on new items that extend to 5 to 5½ months.

[54] Transcript, p. 123.

[55] According to parties, customers do not tend to specify the origin of imported lockwashers when ordering. Except for military and certain government sales, customers do not generally stipulate domestic origin for lockwashers. Transcript, pp. 62, 127.

Table 7
Certain helical spring lockwashers: End-of-period inventories of U.S. importers, by products and sources, 1989-91, and as of June 30, 1991, and June 30, 1992

Item	As of Dec. 31-- 1989	1990	1991	As of June 30-- 1991	1992
	Quantity (1,000 units)				
Carbon steel helical spring lockwashers:					
China	***	***	***	***	***
Taiwan	***	***	***	***	***
Subtotal	***	***	***	***	***
Other sources	***	***	***	***	***
Total	***	***	***	***	***
Stainless steel helical spring lockwashers:					
China	0	0	0	0	0
Taiwan	***	***	***	***	***
Subtotal	***	***	***	***	***
Other sources	***	***	***	***	***
Total	***	***	***	***	***
Certain helical spring lockwashers:					
China	***	***	***	***	***
Taiwan	***	***	***	***	***
Subtotal	320,829	392,796	300,405	246,483	317,788
Other sources	***	***	***	***	***
Total	***	***	***	***	***
	Ratio to U.S. shipments of imports (percent)				
Carbon steel helical spring lockwashers:					
China	***	67.4	***	32.6	***
Taiwan	***	***	***	1.2	***
Average	***	***	***	***	***
Other sources	.3	17.1	21.4	11.3	26.6
Average	63.4	64.5	39.3	30.4	44.6
Stainless steel helical spring lockwashers:					
China	(1)	(1)	(1)	(1)	(1)
Taiwan	***	***	38.1	***	87.5
Average	***	***	38.1	***	87.5
Other sources	***	***	***	***	***
Average	***	***	38.1	***	87.5
Certain helical spring lockwashers:					
China	***	67.4	***	32.6	***
Taiwan	***	***	***	***	***
Average	65.6	64.9	39.5	30.5	44.8
Other sources	.1	17.1	21.4	11.3	26.6
Average	63.4	64.4	39.3	30.4	44.6

[1] Not applicable.

Note.--Ratios are calculated using data of firms providing both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

In its questionnaire, the Commission requested importers to list any expected deliveries of carbon and/or stainless steel helical spring lockwashers from China and/or Taiwan after June 30, 1992. Data received in response to this request are presented in the following tabulation:

Importer	Source	Quantity (1,000 units)	Expected delivery
***	China	***	Sept. 1992
		***	Nov. 1992
			Jan. 1993
***	Subject	***	Feb. 1993
***	Subject	***	Sept. 1992
***	Subject	***	July 1992
		***	Sept. 1992
		***	Nov. 1992
***	Subject	***	Aug. 1992
		***	Oct. 1992
		***	Nov. 1992
***	Subject	***	Aug. 1992
		***	Sept. 1992
		***	Oct. 1992
***	Subject	***	Oct. 1992
***	Subject	***	Feb. 1993
***	China	***	July 1992
		***	Sept. 1992
***	Subject	***	Nov. 1992
Total		271,891	

ABILITY OF FOREIGN PRODUCERS TO GENERATE EXPORTS AND AVAILABILITY OF EXPORT MARKETS OTHER THAN THE UNITED STATES

The Chinese Industry

The petition identified 11 producers of certain helical spring lockwashers in China, along with 5 firms with Hong Kong addresses believed to be manufacturing certain helical spring lockwashers in China. Only one of these producers, Hangzhou Spring Washer Factory (Hangzhou), Zhejiang, China, was represented by counsel; Hangzhou, however, reportedly accounts currently for more than 80 percent of Chinese exports of the subject merchandise to the United States.[56] Data supplied by counsel for Hangzhou are presented in table 8.

[56] Transcript, p. 84. The Commission also requested the U.S. Embassy in Beijing to provide data on the operations of the firms named in the petition. To date the Commission has not received a response to that request.

Table 8
Carbon steel helical spring lockwashers: China's production, capacity, end-of-period inventories, home-market shipments, and exports to the United States and to all other countries, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Hangzhou's capacity to produce carbon steel helical spring lockwashers increased by *** percent between 1989 and 1990 and rose more sharply, by *** percent, in 1991. Capacity is expected to increase even further in 1992, to an annualized level of ***.[57] Production dipped slightly in 1990 but rebounded strongly in 1991 and rose again when the January-June periods are compared. Utilization levels were very high throughout the period. Home-market shipments increased each year and accounted for a greater share of total shipments at the end of the period than at the beginning.[58]

Exports to the United States increased steadily and substantially from 1989 to 1991 and increased yet again, but less markedly, in January-June 1992 compared with the corresponding period of 1991. Exports to the United States, as a ratio to production, rose overall from 1989 to 1991, as did their share of total exports. Hangzhou projects that for full-year 1992, total production and total exports will increase over 1991 levels but exports to the United States will decline slightly. The share of total exports going to sources other than the United States is expected to increase slightly during 1993 as well.

Parties testifying at the conference provided further information concerning the Chinese industry. Hangzhou, as noted above, clearly dominates the industry. Its plant produces carbon steel helical spring lockwashers primarily but also produces small amounts of products such as hex bolts.[59] Hangzhou's production process for helical spring lockwashers is similar to that employed by Shakeproof, with one significant difference: the coiling and cutting processes are done in separate steps.[60]

Importers purchasing from China reported that they have experienced sporadic supply problems, primarily with regard to plant slowdowns and shutdowns occasioned by lack of availability of raw materials, such as steel. Respondents testified at the conference that there is no distributor network as such in China; Hangzhou sells directly to end users.[61]

With regard to Hong Kong firms alleged to be producing the subject merchandise in Hong Kong or in China, the petitioner stated at the conference

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[57] Based on 6-month data.

[58] Respondents testified at the conference that, currently, the Chinese domestic market accounts for approximately 25 percent of Hangzhou's helical spring lockwasher sales. Transcript, p. 98.

[59] These items are not produced on the same equipment as that used for helical spring lockwashers. Transcript, pp. 97, 117.

[60] Transcript, p. 119; Interview with Joe Musuraca, Shakeproof, Milwaukee, WI, Sept. 16, 1992.

[61] Transcript, p. 120.

that the Hong Kong firms named in the petition have production operations in China.[62] The U.S. Counsel in Hong Kong, however, reported, based on information from four of the five companies named in the petition, that those firms' activities are limited to reexporting merchandise manufactured in China by unrelated companies. Those firms could not provide any information on the capacity, production, inventory levels, or home-market sales of the Chinese firms they dealt with but did provide data on the value of their own exports, which totaled $***.

The Taiwanese Industry

The petition named three firms as producing helical spring lockwashers in Taiwan during the period of investigation. In response to the Commission's request for information on the Taiwanese industry, the American Institute in Taiwan (AIT) provided limited data on the operations of these firms.[63] According to AIT, the three firms named in the petition are not producers of the subject merchandise but rather are exporters. During the period of investigation, these firms dealt with four manufacturers.[64] The manufacturing firms all reported to AIT that they plan to discontinue production within 1 year.

The Taiwanese helical spring lockwasher industry appears to be contracting. AIT reported that the industry peaked in 1985-86, with seven manufacturers producing over 500 metric tons per month. Since 1987, however, foreign buyers increasingly have shifted their imports to China, which can undersell the Taiwanese product by 20 to 30 percent. This shift has allegedly led to the closing of almost all Taiwanese plants producing lockwashers.

AIT could not provide any information regarding Taiwanese production capacity, production levels, inventories, or home-market sales. It did, however, provide data on these firms' exports, which data are presented in table 9.

AIT noted further that Taiwanese exports are not affected by any nontariff barriers, such as antidumping findings, in countries other than the United States.

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[62] Transcript, p. 63.
[63] Taiwanese firms were not represented by counsel.
[64] AIT did not identify these firms.

Table 9
Certain helical spring lockwashers: Taiwan's exports to the United States and to all other countries, 1989-91, January-June 1991, and January-June 1992

Item	1989	1990	1991	January-June-- 1991	1992
Exports (1,000 kilograms)--					
To the United States.....	714	610	191	(1)	89
To all other countries[2]..	337	328	447	(1)	394
Total exports.....	1,051	938	638	(1)	483
Exports (1,000 dollars)--					
To the United States.....	1,662	1,324	381	(1)	271
To all other countries[2]..	985	1,004	947	(1)	626
Total exports.....	2,647	2,328	1,328	(1)	897
Exports to the United States as a ratio to total exports (percent):					
Quantity.....	68	65	30	(1)	18
Value.....	63	57	29	(1)	30

[1] Data not provided.
[2] Includes Australia, New Zealand, Hong Kong, Canada, and Japan.

Source: American Institute in Taiwan, telegram to USITC, Oct. 1, 1992.

CONDITION OF THE INDUSTRY IN THE UNITED STATES

The information in this section of the report is based primarily on Shakeproof's response to the Commission's producer questionnaire. As indicated in the section of the report entitled "U.S. producers," Shakeproof/Mellowes was the only U.S. company to provide usable data to the Commission regarding operations producing certain helical spring lockwashers. The two other firms producing the subject merchandise during the period of investigation--Crest and Beall--either did not respond to the questionnaire or provided unusable data.

With regard to nonhelical spring lockwashers, such as conical spring lockwashers, the Commission received limited data from ***, in addition to Shakeproof. Data on tooth lockwashers are limited to those provided by Shakeproof. Data on all spring lockwashers (including nonhelical) and tooth lockwashers are presented in tables C-11 and C-12.

Production, Capacity, and Capacity Utilization

Shakeproof's production of helical spring lockwashers decreased annually from *** in 1989 to *** in 1991, but a comparison of January-June 1992 to January-June 1991 shows an increase of *** percent (table 10). The production trend is identical when carbon steel helical spring lockwashers are examined separately. Production of stainless steel helical spring lockwashers also declined over the 1989-91 period, but in contrast to the trend for carbon steel helical spring lockwashers also declined when the 6-month periods January-June 1991 and January-June 1992 are compared.

Table 10
Helical spring lockwashers: Shakeproof's capacity, production, and capacity utilization, by products, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

As Shakeproof's capacity to produce helical spring lockwashers remained constant throughout 1989-91, the declining trend in production noted above caused Shakeproof's capacity utilization to fall steadily, from *** percent in 1989 to *** percent in 1991. This indicator reversed direction in January-June 1992, when compared with January-June 1991, rising from *** to *** percent. Shakeproof experienced similar trends in capacity utilization for carbon steel helical spring lockwashers, with utilization levels slightly *** throughout the period of investigation. Utilization levels for stainless steel helical spring lockwashers fell consistently, both over the 3 full calendar years and when the January-June periods are compared.

Shakeproof operates its Milwaukee plant ***.[65] The production equipment used to manufacture helical spring lockwashers is completely dedicated to that product; nothing else can be produced on the equipment.[66] Shakeproof ***. ***.[67] For the most common one-quarter-inch helical spring lockwasher, Shakeproof's average production run is 20 million pieces.[68]

Shakeproof noted that it experienced no constraints during the period of investigation regarding supply of materials, labor, capital equipment, or any unusual increases in fixed costs.[69] ***.[70]

Shakeproof manufactures helical spring lockwashers not only from carbon and stainless steel, but also from copper, aluminum alloy, phosphor bronze, and other materials. Shakeproof reported that helical spring lockwashers are all manufactured on the same machinery, regardless of metal content, and that only minor retooling is necessary when switching from one metal to another.[71] ***. ***.[72]

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[65] Interview with Joe Musuraca, Shakeproof, Milwaukee, WI, Sept. 16, 1992. As noted above in the section of the report entitled "U.S. producers," the Milwaukee plant is the only one producing helical spring lockwashers.

[66] Questionnaire response of Shakeproof, p. 11; transcript, p. 48.

[67] ***. Interview with Joe Musuraca, Shakeproof, Milwaukee, WI, Sept. 16, 1992.

[68] Interview with Joe Musuraca, Shakeproof, Milwaukee, WI, Sept. 16, 1992; transcript, p. 56; petitioner's postconference brief at 3. Minimum production runs range as low as ***. Shakeproof noted that ***.

[69] Interview with Joe Musuraca, Shakeproof, Milwaukee, WI, Sept. 16, 1992; transcript, p. 59.

[70] ***. Questionnaire response of Shakeproof, p. 7.

[71] Questionnaire response of Shakeproof, p. 11; transcript, pp. 70, 72. In addition, few adjustments are needed in order to produce the various types of helical spring lockwashers, such as heavy, light, high-collar, extra-duty, etc. Transcript, p. 48.

[72] Questionnaire response of Shakeproof, p. 12.

Domestic and Export Shipments

As seen in table 11, the quantity of Shakeproof's U.S. shipments of all varieties of helical spring lockwashers declined by *** percent from 1989 to 1990, and then more strongly, by *** percent, from 1990 to 1991. In terms of value, such shipments also decreased consistently from 1989 to 1991. Unit values increased slowly but steadily throughout 1989-91. Trends in the data reverse direction when the January-June periods are compared; i.e., increases in quantity and value of shipments, and declines in their unit values. When shipment data for carbon and stainless steel helical spring lockwashers are examined separately, trends in the data can be seen to be similar to those for all helical spring lockwashers.

Table 11
Helical spring lockwashers: Shipments by Shakeproof, by products and by types, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Shakeproof's export business is ***. The quantity and value of export shipments, regardless of type of lockwasher, declined between 1989 and 1990 but, in contrast to U.S. shipments, turned up in 1991. Such shipments declined slightly in January-June 1992 compared with the corresponding period in 1991.

End-of-Period Inventories

With regard to Shakeproof's inventories of all varieties of helical spring lockwashers, inventories climbed steadily and markedly from 1989 to 1991, by *** percent over the 3-year period (table 12). Inventories as of June 30, 1992 also showed an increase over their level as of June 30, 1991. End-of-period inventories of carbon steel helical spring lockwashers showed an identical trend, but trends in inventory levels for stainless steel helical spring lockwashers were more erratic, increasing overall from 1989 to 1991, but declining when the January-June periods are compared.

Table 12
Helical spring lockwashers: Shakeproof's end-of-period inventories, by products, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Ratios of inventories to preceding-period shipments were generally quite low throughout the 3 full calendar years, ranging between *** and *** percent. These ratios showed an increasing trend, for both carbon steel helical spring lockwashers viewed separately and for all varieties of helical spring lockwashers. When the January-June periods are examined, however, this ratio declined for all helical spring lockwashers, but rose for the carbon steel

variety. The trend for stainless steel helical spring lockwashers was somewhat different, with an overall increase in the ratio between 1989 and 1991, as opposed to a decline as of June 30, 1992, when compared with June 30, 1991.

Shakeproof indicated that there were no unusual occurrences during the period of investigation that would unduly affect inventory levels. It reported that it keeps around *** percent of its complete product line in inventory; by contrast, over *** percent of helical spring lockwasher varieties are kept in stock.[73] Nevertheless, Shakeproof claims no advantage over importers in supplying stock items.[74] Shakeproof does have an edge, however, in servicing orders of 1,000 pieces or less; many importers, according to Shakeproof, will not fill those orders. Shakeproof also indicated that when new designs or applications are required, or when special sizes are requested for which stock is unavailable, it can fill the order within 6 to 8 weeks, as opposed to 4 to 6 months for product sourced from overseas.[75]

Employment, Wages, and Productivity

In its questionnaire, Shakeproof provided information on the number of production and related workers, total hours worked by those employees, and the wages and total compensation paid to those employees during the period of investigation. For Shakeproof's operations producing all varieties of helical spring lockwashers, during 1989-91 the number of workers in the Milwaukee plant dropped from *** to ***, with a further decline to *** workers by the end of June 1992 (table 13). Hours worked by those workers remained fairly constant during the 1989-91 period but dropped substantially when the January-June periods are compared. Wages and total compensation showed no clear trend. Productivity fell steadily between 1989 and 1991, and hourly compensation fell off slightly; these trends reversed direction in January-June 1992, compared with the corresponding period of 1991.[76]

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[73] Interview with Joe Musuraca, Shakeproof, Elgin, IL, Sept. 15, 1992; transcript, p. 56.

[74] Interview with Joe Musuraca, Shakeproof, Milwaukee, WI, Sept. 16, 1992; transcript, p. 57. ***. Questionnaire response of Shakeproof at 43.

[75] Interview with Joe Musuraca, Shakeproof, Milwaukee, WI, Sept. 16, 1992; transcript, p. 57.

[76] Respondent claims that the decline in labor productivity stems from Shakeproof's restructuring of its product mix subsequent to its purchase of the Mellowes plant in 1991. This restructuring, according to respondents, left many of Shakeproof's high-speed machines underutilized, leading to a decline in productivity. Respondents' postconference brief, p. 13.

Table 13
Average number of total employees and production and related workers in Shakeproof's establishment wherein helical spring lockwashers are produced, hours worked, wages and total compensation paid to such employees, and hourly wages, productivity, and unit production costs, by products, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

When Shakeproof's operations producing carbon and stainless steel helical spring lockwashers are viewed separately, trends in the data appear quite similar to those for its operations producing all varieties of helical spring lockwashers. For the most part, the number of production workers, hours worked, and wages and total compensation paid demonstrated declines during the period examined, with more marked decreases when the January-June periods of 1992 and 1991 are compared.

For a plant producing millions of pounds of the subject merchandise annually, it would seem that Shakeproof's work force is unusually small.[77] Shakeproof noted, however, that lockwasher manufacture is extraordinarily capital intensive.[78] ***. ***.

In its petition, Shakeproof alleged that since 1980 over 250 jobs have been lost in the U.S. lockwasher industry because of the various plant closings and company consolidations.[79] In its questionnaire, the Commission requested Shakeproof to provide detailed information concerning reductions in the number of production and related workers producing helical spring lockwashers during the period of investigation, if such reductions involved at least 5 percent of the work force or more than 50 workers. The reported layoffs are shown in the following tabulation:

Product	Year	Number of workers	Duration	Reason
*	*	*	*	* * *

[77] Shakeproof indicated that its employees are not represented by any union.

[78] Petition, p. 3; transcript, p. 15.

[79] Petition, p. 2.

Financial Experience of U.S. Producers

Shakeproof,[80] representing over 90 percent of U.S. certain helical spring lockwasher production in 1991, submitted financial data on the establishment[81] in which helical spring lockwashers are produced and on its carbon helical spring lockwasher, stainless steel helical spring lockwasher, and all helical spring lockwasher operations.

* * * * * * *

Overall Establishment Operations

Income-and-loss data of Shakeproof on its overall establishment operations in which helical spring lockwashers are produced are shown in table 14.[82] Net sales on overall establishment operations decreased by *** percent from $*** in 1989 to $*** in 1990, and decreased *** percent to $*** in 1991. The operating income was $*** in 1989, $*** in 1990, and $*** in 1991. The operating income as a share of sales was *** percent in 1989, *** percent in 1990, and *** percent in 1991. Net sales of $*** for the 6-month period ended June 30, 1992, were *** percent more than the net sales of $*** for the 6-month period ended June 30, 1991. The operating income was $*** in the 1992 interim period compared with an operating income of $*** in interim 1991. The operating income margin as a share of sales was *** percent in interim 1991 and *** percent in interim 1992.

Table 14
Income-and-loss experience of Shakeproof on its overall establishment operations in which helical spring lockwashers are produced, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Operations on All Helical Spring Lockwashers

Income-and-loss data for Shakeproof on its operations for all helical spring lockwashers are shown in table 15. Net sales of all helical spring lockwashers decreased by *** percent from $*** in 1989 to $*** in 1990, and decreased by *** percent to $*** in 1991. The operating income was $*** in 1989, $*** in 1990, and $*** in 1991. The operating income as a share of sales was *** percent in 1989, *** percent in 1990, and *** percent in 1991. Net sales of $*** for the 6-month period ended June 30, 1992, were *** percent more than the net sales of $*** for the 6-month period ended June 30, 1991. The operating income was $*** in the 1992 interim period, compared with an operating income of $*** in interim 1991. The operating income margin as a

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[80] ITW purchased Mellowes (a division of Charter Manufacturing) in April 1991 for ***. ***.

[81] ***.

[82] In addition to helical spring lockwashers, data relate to production of cotter pins.

share of sales was *** percent in interim 1991 and *** percent in interim 1992.

* * * * * * *

Table 15
Income-and-loss experience of Shakeproof on its operations producing all helical spring lockwashers, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Operations on Carbon Steel and Stainless Steel Helical Spring Lockwashers

Income-and-loss data for Shakeproof on its operations for carbon steel and stainless steel helical spring lockwashers combined are shown in table 16. Net sales of combined carbon steel and stainless steel helical spring lockwashers decreased by *** percent from $*** in 1989 to $*** in 1990, and decreased by *** percent to $*** in 1991. The operating income was $*** in 1989, $*** in 1990, and $*** in 1991. The operating income as a share of sales was *** percent in 1989, *** percent in 1990, and *** percent in 1991. Net sales of $*** for the 6-month period ended June 30, 1992, were *** percent more than the net sales of $*** for the 6-month period ended June 30, 1991. The operating income was $*** in the 1992 interim period compared with an operating income of $*** in interim 1991. The operating income margin as a share of sales was *** percent in interim 1991 and *** percent in interim 1992.

Table 16
Income-and-loss experience of Shakeproof on its operations producing carbon steel and stainless steel helical spring lockwashers combined, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Operations on Carbon Steel Helical Spring Lockwashers

Income-and-loss data for Shakeproof on its operations for carbon steel helical spring lockwashers are shown in table 17. Net sales of carbon steel helical spring lockwashers decreased by *** percent from $*** in 1989 to $*** in 1990, and decreased by *** percent to $*** in 1991. The operating income was $*** in 1989, $*** in 1990, and $*** in 1991. The operating income as a share of sales was *** percent in 1989, *** percent in 1990, and *** percent in 1991. Net sales of $*** for the 6-month period ended June 30, 1992, were *** percent more than the net sales of $*** for the 6-month period ended June 30, 1991. The operating income was $*** in the 1992 interim period, compared with an operating income of $*** in interim 1991. The operating income margin as a share of sales was *** percent in interim 1991 and *** percent in interim 1992.

Table 17
Income-and-loss experience of Shakeproof on its operations producing carbon steel helical spring lockwashers, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

The average unit sales value (on a per-pound basis), as shown in table 18, for Shakeproof's carbon steel helical spring lockwasher operations was $*** in 1991, compared with $*** in 1990 and $*** in 1989. The quantity sold (***) in 1991 was significantly lower than the *** sold in 1990 and the *** sold in 1989. The operating income was $*** per pound in 1991 compared to $*** in 1990 and $*** in 1989. The per-pound sales values were similar in the interim periods (***) in interim 1991. The quantities sold were significantly higher in interim 1992 (***) than the *** sold in interim 1991. The operating income on a per-pound basis for the interim periods was $*** in interim 1992 and $*** in interim 1991. The cost of raw material dropped by $*** per pound from $*** in 1989 to $*** in 1991 and interim 1992. The direct labor cost per pound remained relatively constant ($*** and $*** per pound) throughout the period. Factory overhead and selling, general, and administrative expenses fluctuated on a per-pound basis with changes in the quantities sold. Any analysis on a per-pound basis may be affected by the mix of products between periods.

Table 18
Income-and-loss experience (on a per-pound basis) of Shakeproof on its operations producing carbon steel helical spring lockwashers, calendar years 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Operations on Stainless Steel Helical Spring Lockwashers

Income-and-loss data for Shakeproof on its operations for stainless steel helical spring lockwashers are shown in table 19. Net sales of stainless steel helical spring lockwashers decreased by *** percent from $*** in 1989 to $*** in 1990, and decreased by *** percent to $*** in 1991. The operating income was $*** in 1989, $*** in 1990, and $*** in 1991. The operating income as a share of sales was *** percent in 1989, *** percent in 1990, and *** percent in 1991. Net sales of $*** for the 6-month period ended June 30, 1992, were *** percent more than the net sales of $*** for the 6-month period ended June 30, 1991. The operating income was $*** in the 1992 interim period, compared with an operating income of $*** in interim 1991. The operating income margin as a share of sales was *** percent in interim 1991 and *** percent in interim 1992.

Table 19
Income-and-loss experience of Shakeproof on its operations producing stainless steel helical spring lockwashers, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

The average unit sales value (on a per-pound basis), as shown in table 20, for Shakeproof's stainless steel helical spring lockwasher operations was $*** in 1991, compared with $*** in 1990 and $*** in 1989. The quantity sold (***) in 1991 was significantly lower than the *** sold in 1990 and the *** sold in 1989. The operating income was $*** per pound in 1991 compared to $*** in 1990 and $*** in 1989. The per-pound sales values were $*** in interim 1992 and $*** in interim 1991. The quantities sold were slightly higher in interim 1992 (***) than the *** sold in interim 1991. The operating income on a per-pound basis was $*** in interim 1992 compared to $*** in interim 1991. The cost of raw material dropped by $*** per pound from $*** in 1989 to $*** in 1991, and dropped by an additional $*** per pound to $*** in interim 1992. The variable labor cost per pound remained constant ($*** to $*** per pound) throughout the period. Factory overhead and selling, general, and administrative expenses fluctuated on a per-pound basis with changes in the quantities sold, except for a ***. Any analysis on a per-pound basis may be affected by the mix of products between periods.

Table 20
Income-and-loss experience (on a per-pound basis) of Shakeproof on its operations producing stainless steel helical spring lockwashers, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Capital Expenditures

Capital expenditures of Shakeproof for its establishment in which lockwashers are produced are shown in table 21. Shakeproof reported that ***.

Table 21
Capital expenditures by Shakeproof on its overall establishment and helical spring lockwasher operations, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Investment in Productive Facilities

The investment in productive facilities for Shakeproof are presented in table 22 for operations on its overall establishment and lockwashers. ***.

Table 22
Value of assets of Shakeproof for its overall establishment and helical spring lockwasher operations, 1989-91

* * * * * * *

Research and Development Expenses

Shakeproof's research and development expenses are shown in table 23. Research and development expenses consist primarily of ***.[83]

Table 23
Research and development expenses by Shakeproof on its overall establishment and helical spring lockwasher operations, 1989-91, January-June 1991, and January-June 1992

* * * * * * *

Impact of Imports on Capital and Investment

The Commission requested Shakeproof to describe any actual or potential negative effects of imports of certain helical spring lockwashers from China and/or Taiwan on its growth, development and production efforts, investment, and ability to raise capital (including efforts to develop a derivative or improved version of their product). Comments are presented in appendix E.

Prices

Market Characteristics

Although helical spring lockwashers are ultimately used largely by manufacturing industries and, to a much smaller extent, by retail consumers, Shakeproof and major importers of helical spring lockwashers from China sell mainly to wholesalers/distributors who in turn sell to industrial users and retail outlets.[84] Shakeproof reported that ***. Some of Shakeproof's customers are master distributors that purchase large volumes and then resell

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[83] ***.

[84] Because of a lack of questionnaire responses from importers, very little information is available concerning the distribution channels in the United States for imports of either carbon or stainless steel helical spring lockwashers imported from Taiwan.

the products to smaller wholesalers/distributors. Most imports of helical spring lockwashers are also sold to wholesalers/distributors. Some of the larger importers, such as Porteous, also qualify as master distributors. A small percentage of imports from China and Taiwan are marketed directly to retail outlets.[85] These products are sold in small volumes in packaged rather than bulk form and are priced higher than comparable items marketed in bulk form to wholesalers/distributors.

Most sales by Shakeproof and the major importers are on a spot rather than a contract basis. Shakeproof indicated that ***. Shakeproof's contracts ***. Only a very small percentage of imported helical spring lockwashers are sold on a contract basis. The terms of these contracts vary widely.

Prices of helical spring lockwashers are commonly quoted on either an f.o.b. or a delivered basis. Shakeproof ***. Among the large importers of Chinese products, ***.

The use of list prices varies widely in this industry. Shakeproof publishes price lists and has indicated that it ***. ***. Shakeproof indicated that ***. *** also publishes price lists and regularly follows these lists in most of its transactions. It provides discounts, however, of 2 to 5 percent for large-volume sales. *** do not make use of published price lists. Both of these companies regularly negotiate prices with their customers for each sale.

Helical spring lockwashers are marketed throughout the entire continental United States although some importers focus their efforts on specific regions. Whereas *** and *** sell nationwide, *** sells primarily in the East, lower Midwest, Southwest, and West. ***. *** sells mainly on the West Coast and *** sells mainly in the Southeast.

Most shipments of helical spring lockwashers to customers are made by truck to wholesalers/distributors, with small amounts being shipped by rail and other means. The majority of these shipments are within a radius of 500 miles from the supplier's shipping point within the United States. Shakeproof and the major importers generally consider transportation costs important. Shakeproof's costs range from *** to ***. Shipping costs reported by major importers of products from China and Taiwan generally amounted to 5 percent or less of the delivered price for distances of 100 miles or less but range as high as 10 percent for distances of 100 to 500 miles and as much as 20 percent, in some cases, for distances of more than 500 miles.

Shakeproof and the importers generally agreed that the helical spring lockwashers from China and Taiwan are comparable in quality with the domestic product and are completely interchangeable in their end uses. Similarly, the domestic producer and importers do not differ significantly in the leadtimes required for delivery of standard items. Shakeproof reported that deliveries are commonly made within 1 week of the receipt of the order for items commonly in stock. Importers reported leadtimes ranging from 1 to 10 days for items in stock.

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[85] ***.

Questionnaire Price Data

Price data were requested for four standard carbon steel helical spring lockwashers and two stainless steel helical spring lockwasher types that are commonly sold by both the producer and importers to wholesalers/distributors. For each of these products listed below, Shakeproof and the importers were requested to provide prices on their largest sales in each quarter as well as total quantities and values shipped in all quarters during January 1989-June 1992.

Product Categories

Product 1:	Carbon steel helical spring lockwasher, plain finish regular section, one-quarter inch.
Product 2:	Carbon steel helical spring lockwasher, zinc plated, regular section, one-quarter inch.
Product 3:	304 stainless steel helical spring lockwasher, regular section, one-quarter inch.
Product 4:	Carbon steel helical spring lockwasher, plain finish regular section, three-eighths inch.
Product 5:	Carbon steel helical spring lockwasher, zinc plated, regular section, three-eighths inch.
Product 6:	304 stainless steel helical spring lockwasher, regular section, three-eighths inch.

Shakeproof was able to complete the questionnaire for all six product categories. Only nine importers, however, provided usable prices, and in some cases these responses were not complete. A number of important importers did not provide any price data at all, despite repeated efforts to obtain it, and no price data are available on sales of stainless steel helical spring lockwashers from China or Taiwan.[86] Although a substantial amount of price data were received on sales of carbon steel helical spring lockwashers from China, the data set is not as complete as it should be.

[86] For example, Soule, Blake and Wechsler, which ***, did not provide price data in spite of repeated requests, even though a representative of this company appeared at the conference to testify on behalf of the respondents.

Price Trends

Quarterly prices of the six domestic products and the four carbon steel helical spring lockwasher products from China are shown in tables 24-27. None of the domestic price series for the carbon steel products 1, 2, 4, and 5 exhibited a clear trend during the 14 quarters for which data were collected. Shakeproof's prices for each of these products varied over a wide range during the 14 quarters for which data were collected. Prices for product 1 ranged from $*** per thousand pieces to $***, and prices of product 2 ranged from $*** to $***. Product 4 prices ranged from $*** to $***, and for product 5 the range was from $*** to $***. Prices of the stainless steel helical spring lockwasher types also varied over a wide range, exhibiting no clear trend during the period. Prices of product 3 ranged from $*** to $***, and prices of product 6 ranged from $*** to $***.

Prices of imports of carbon steel helical spring lockwashers from China all fluctuated widely during the 14 quarters for which data were collected. Prices of product 1 ranged from a low of $*** per thousand units in the fourth quarter of 1991 to a high of $*** in the second quarter of 1992. Prices for product 2 ranged between $*** and $***. Chinese prices for product 2 were generally somewhat lower in 1991 and the first half of 1992 than in 1989 and 1990. Prices of product 4 ranged from $*** to $***, and prices of product 5 ranged from $*** to $***. Product 5 prices showed evidence of a decline during the period, although quarterly movements were irregular.

Trends in prices of carbon and stainless steel helical spring lockwashers from Taiwan could not be determined because of a lack of questionnaire data. Only two quarters of price data on product 2 and one quarter of data on product 5 were provided. All of the reported transactions occurred in 1989. No price data were provided on sales of stainless steel helical spring lockwashers from Taiwan.

Price Comparisons

Although price comparisons between domestic and imported helical spring lockwashers have been developed, these comparisons should be viewed with caution. For one thing, a number of large importers did not provide price data, and therefore the data are not as complete as they should be. In addition, the complex levels of distribution in this industry raise some question as to whether the prices reported by Shakeproof and the importers reflect competition at the same level of distribution.[87]

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[87] The petitioner argued that direct price comparisons between domestic and import prices are inappropriate, because the prices reflect sales to different categories of customers. Petitioner's postconference brief, pp. 7-9. The petitioner argued that its prices reflect sales to large master distributors, whereas prices reported by the larger importers, which are also master distributors, reflect sales to much smaller wholesalers and distributors. This argument is difficult to evaluate with the information available. The questionnaire data do show, however, that the volumes of the largest sales reported by Shakeproof are significantly larger in most quarters than those reported by any of the importers, including ***, a master distributor.

Table 24
Delivered prices of product 1 reported by Shakeproof and weighted-average delivered prices of importers, margins of under/(over)selling, and total shipments, by quarters, January 1989-June 1992

Period	United States		China		
	Price Per 1,000 units	Quantity 1,000 units	Price Per 1,000 units	Quantity 1,000 units	Margin Percent
1989:					
January-March.....	$***	***	$***	***	(36.3)
April-June.....	***	***	***	***	(44.8)
July-September....	***	***	***	***	(45.9)
October-December..	***	***	***	***	(30.8)
1990:					
January-March.....	***	***	***	***	(30.9)
April-June.....	***	***	***	***	(31.7)
July-September....	***	***	***	***	(43.4)
October-December..	***	***	***	***	(16.8)
1991:					
January-March.....	***	***	***	***	(22.3)
April-June.....	***	***	***	***	(22.8)
July-September....	***	***	***	***	(10.2)
October-December..	***	***	***	***	7.9
1992:					
January-March.....	***	***	***	***	(35.1)
April-June.....	***	***	***	***	(40.7)

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 25
Delivered prices of product 2 reported by Shakeproof and weighted-average delivered prices of importers, margins of under/(over)selling, and total shipments, by quarters, January 1989-June 1992

Period	United States		China		
	Price Per 1,000 units	Quantity 1,000 units	Price Per 1,000 units	Quantity 1,000 units	Margin Percent
1989:					
January-March.....	$***	***	$***	***	(14.3)
April-June.....	***	***	***	***	(18.8)
July-September....	***	***	***	***	(4.3)
October-December..	***	***	***	***	(23.2)
1990:					
January-March.....	***	***	***	***	(23.3)
April-June.....	***	***	***	***	(5.0)
July-September....	***	***	***	***	(4.6)
October-December..	***	***	***	***	(26.9)
1991:					
January-March.....	***	***	***	***	(1.2)
April-June.....	***	***	***	***	1.8
July-September....	***	***	***	***	3.7
October-December..	***	***	***	***	9.1
1992:					
January-March.....	***	***	***	***	1.4
April-June.....	***	***	***	***	12.9

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 26
Delivered prices of product 3 reported by Shakeproof and product 4 reported by Shakeproof and 1 importer, margins of under/(over)selling, and total shipments, by quarters, January 1989-June 1992

Period	Product 3		Product 4				
	United States		United States		China		
	Price	Quantity	Price	Quantity	Price	Quantity	Margin
	Per 1,000 units	1,000 units	Per 1,000 units	1,000 units	Per 1,000 units	1,000 units	Percent
1989:							
January-March.....	$***	***	$***	***	$***	***	(25.4)
April-June.....	***	***	***	***	***	***	(2.7)
July-September....	***	***	***	***	***	***	(0.2)
October-December..	***	***	***	***	***	***	(35.9)
1990:							
January-March.....	***	***	***	***	***	***	(41.6)
April-June.....	***	***	***	***	***	***	(34.2)
July-September....	***	***	***	***	***	***	(19.2)
October-December..	***	***	***	***	***	***	8.2
1991:							
January-March.....	***	***	***	***	***	***	(10.8)
April-June.....	***	***	***	***	***	***	(9.7)
July-September....	***	***	***	***	***	***	(20.9)
October-December..	***	***	***	***	***	***	15.0
1992:							
January-March.....	***	***	***	***	***	***	(21.2)
April-June.....	***	***	***	***	***	***	(9.0)

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 27
Delivered prices of products 5 and 6 reported by Shakeproof and weighted-average delivered prices of importers, margins of under/(over)selling, and total shipments, by quarters, January 1989-June 1992

Period	Product 5					Product 6	
	United States		China			United States	
	Price Per 1,000 units	Quantity 1,000 units	Price Per 1,000 units	Quantity 1,000 units	Margin	Price Per 1,000 units	Quantity 1,000 units
					Percent		
1989:							
January-March.....	$***	***	$***	***	(27.5)	$***	***
April-June.....	***	***	***	***	(18.9)	***	***
July-September....	***	***	***	***	(14.4)	***	***
October-December..	***	***	***	***	(17.6)	***	***
1990:							
January-March.....	***	***	***	***	(23.2)	***	***
April-June.....	***	***	***	***	(14.8)	***	***
July-September....	***	***	***	***	(24.2)	***	***
October-December..	***	***	***	***	(22.9)	***	***
1991:							
January-March.....	***	***	***	***	1.6	***	***
April-June.....	***	***	***	***	1.8	***	***
July-September....	***	***	***	***	6.7	***	***
October-December..	***	***	***	***	12.0	***	***
1992:							
January-March.....	***	***	***	***	(2.0)	***	***
April-June.....	***	***	***	***	7.8	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Price comparisons between domestic products 1, 2, 4, and 5 and imports from China were available for 56 quarters. Chinese prices were lower than domestic prices in 13 quarters but above domestic prices in 43 quarters. Of the 13 instances of underselling, 12 occurred during 1991 and the first two quarters of 1992.

For product 1, imports were priced below the domestic price in one quarter by a margin of 7.9 percent. In the other 13 quarters imports from China were priced above the domestic price by margins ranging from 10.2 percent to 45.9 percent. For product 2, the import price was below the domestic price in 5 of 14 quarters by margins ranging from 1.4 percent to 12.9 percent. All five instances of underselling for product 2 occurred between the second quarter of 1991 and the second quarter of 1992. In the nine earlier quarters, the Chinese price was consistently above the domestic price by margins ranging from 1.2 percent to 26.9 percent. For product 4, prices of imports from China were below domestic prices in 2 of 14 quarters by margins of 8.2 percent and 15.0 percent. In the other 12 quarters imports were priced higher than the domestic product by margins ranging from 0.2 percent to 41.6 percent. For product 5, imports from China were lower than the domestic price in 5 of 14 quarters. All 5 instances of underselling occurred during 1991 and the first half of 1992. Margins of underselling for product 5 ranged from 1.6 percent to 12.0 percent. In the other 9 quarters the Chinese product was priced higher by margins ranging from 2.0 percent to 27.5 percent.

Price comparisons between the domestic product and imports of carbon steel helical spring lockwashers from Taiwan were available only during three quarters in 1989. The Taiwanese price and the percentage margins are not shown in the tables. The price of product 2 from Taiwan was 0.7 percent lower than the domestic price in the third quarter of 1989 and 5.4 percent higher in the fourth quarter. The price of product 5 from Taiwan was 15.1 percent higher than the domestic price in the second quarter of 1989. No price data were available from Taiwan for making comparisons between domestic and imported stainless steel helical spring lockwasher prices.

Exchange Rates

Quarterly data reported by the International Monetary Fund indicate that during January-March 1989 through April-June 1992 the nominal value of the Taiwan dollar fluctuated, appreciating by 9.9 percent overall relative to the U.S. dollar (table 28).[88] Adjusted for movements in producer price indexes in the United States and Taiwan, the real value of the Taiwan dollar depreciated by less than 1 percent overall between January-March 1989 and the second quarter of 1992.[89]

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[88] International Financial Statistics, Sept. 1992.

[89] The value of Chinese currency is determined by the Chinese Government rather than the free market. Therefore, an accurate description of movements in the Chinese exchange rate cannot be presented.

Table 28
Exchange rates:[1] Indexes of nominal and real exchange rates of the Taiwan dollar and indexes of producer prices in the United States and Taiwan,[2] by quarters, January 1989-June 1992

(January-March 1989 = 100)

Period	U.S. producer price index	Taiwan producer price index	Nominal exchange-rate index	Real exchange-rate index[3]
1989:				
January-March	100.0	100.0	100.0	100.0
April-June	101.8	99.7	105.3	103.1
July-September	101.4	97.9	107.4	103.7
October-December	101.8	96.6	106.5	101.0
1990:				
January-March	103.3	96.1	105.6	98.3
April-June	103.1	96.9	102.8	96.6
July-September	104.9	98.8	101.5	95.6
October-December	108.1	99.8	101.5	93.7
1991:				
January-March	105.9	99.2	101.7	95.3
April-June	104.8	98.7	101.4	95.5
July-September	104.7	98.0	103.3	96.7
October-December	104.8	96.5	106.2	97.7
1992:				
January-March	104.6	94.7	109.7	99.4
April-June[4]	105.6	95.4	109.9	99.3

[1] Exchange rates expressed in U.S. dollars per Taiwan dollar.

[2] Producer price indexes--intended to measure final product prices--are based on period-average quarterly indexes presented in line 63 of the International Financial Statistics.

[3] The real exchange rate is derived from the nominal rate adjusted for relative movements in producer prices in the United States and Taiwan.

[4] Derived from Taiwanese exchange rate and price data reported for April-May only.

Note.--January-March 1989 = 100.

Source: International Monetary Fund, International Financial Statistics, Sept. 1992.

Lost Sales and Lost Revenues

Shakeproof provided eight allegations of lost sales in its questionnaire response.[90] Four of the allegations related to stainless steel helical spring lockwashers from Taiwan and four related to carbon steel helical spring lockwashers from China. Only three of the eight allegations included specific quantities and values. The Commission was able to contact seven purchasers to investigate these allegations.

* * * * * * *

[90] Shakeproof did not include any lost revenue allegations. In its questionnaire Shakeproof stated that the prices from China and Taiwan were too low for it to be able to roll back prices.

APPENDIX A

FEDERAL REGISTER NOTICES OF THE U.S. INTERNATIONAL TRADE COMMISSION AND THE U.S. DEPARTMENT OF COMMERCE

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 731-TA-624 and 625 (Preliminary)]

Certain Helical Spring Lockwashers from the People's Republic of China and Taiwan

AGENCY: United States International Trade Commission.

ACTION: Institution and scheduling of preliminary antidumping investigations.

SUMMARY: The Commission hereby gives notice of the institution of preliminary antidumping investigations Nos. 731-TA-624 and 625 (Preliminary) under section 733(a) of the Tariff Act of 1930 (19 U.S.C. 1673b(a)) to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from the People's Republic of China and Taiwan of certain helical spring lockwashers,[1] provided for in subheading 7318.21.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value. The Commission must complete preliminary antidumping investigations in 45 days, or in this case by October 23, 1992.

For further information concerning the conduct of these investigations and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A through E (19 CFR part 201), and part 207, subparts A and B (19 CFR part 207).

EFFECTIVE DATE: September 8, 1992.

FOR FURTHER INFORMATION CONTACT: Jonathan Seiger (202-205-3183), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202-205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000.

SUPPLEMENTARY INFORMATION:

Background

These investigations are being instituted in response to a petition filed on September 8, 1992, by the Shakeproof Industrial Products Division, Illinois Tools Works, Milwaukee, WI.

Participation in the Investigations and Public Service List

Persons (other than petitioners) wishing to participate in the investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in §§ 201.11 and 270.10 of the Commission's rules, not later than seven (7) days after publication of this notice in the **Federal Register**. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to these investigations upon the expiration of the period for filing entries of appearance.

[1] For purposes of these investigations, "certain helical spring lockwashers" consist of circular, twisted-helix washers of iron or steel (including stainless steel), whether or not heat-treated or plated, designed to function as a spring to compensate for out-of-tolerance looseness between component parts of an assembly, to provide a hardened bearing surface, or for similar functions.

Limited Disclosure of Business Proprietary Information (BPI) under an Administrative Protective Order (APO) and BPI Service List

Pursuant to § 207.7(a) of the Commission's rules, the Secretary will make BPI gathered in these preliminary investigations available to authorized applicants under the APO issued in the investigations, provided that the application is made not later than seven (7) days after the publication of this notice in the **Federal Register**. A separate service list will be maintained by the Secretary for those parties authorized to receive BPI under the APO.

Conference

The Commission's Director of Operations has scheduled a conference in connection with this investigation for 9:30 a.m. on September 30, 1992, at the U.S. International Trade Commission Building, 550 E Street SW., Washington, DC. Parties wishing to participate in the conference should contact Jonathan Seiger (202-205-3183) not later than September 28, 1992, to arrange for their appearance. Parties in support of opposition to the imposition of such duties will each be collectively allocated one hour within which to make an oral presentation at the conference. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the conference.

Written Submissions

As provided in §§ 201.8 and 207.15 of the Commission's rules, any person may submit to the commission on or before October 5, 1992, a written brief containing information and arguments pertinent to the subject matter of the investigations. Parties may file written testimony in connection with their presentation at the conference no later than three (3) days before the conference. If briefs or written testimony contain BPI, they must conform with the requirements of §§ 201.6, 207.3, and 207.7 of the Commission's rules.

In accordance with §§ 201.16(c) and 207.3 of the rules, each document filed by a party to the investigations must be served on all other parties to the investigations (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

Authority: These investigations are being conducted under authority of the Tariff Act of

1930, title VII. This notice is published pursuant to § 207.12 of the Commission's rules.

Issued: September 10, 1992.

By order of the Commission.

Paul R. Bardos,

Acting Secretary.

[FR Doc. 92-22347 Filed 9-15-92; 8:45 am]

BILLING CODE 7020-02-M

Notices

Federal Register
Vol. 57, No. 193
Monday, October 5, 1992

International Trade Administration

[[A-570-822 and A-583-820]

Initiation of Antidumping Duty Investigations; Certain Helical Spring Lock Washers From the People's Republic of China and Taiwan

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

EFFECTIVE DATE: October 5, 1992.

FOR FURTHER INFORMATION CONTACT: John Beck, Office of Antidumping Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230; telephone (202) 482-3464.

Initiation of Investigations

The Petition

On September 8, 1992, we received a petition filed in proper form by the Shakeproof Industrial Products Division of Illinois Tool Works Inc. (petitioner). Supplements to the petition were received on September 15 and 23, 1992

In accordance with 19 CFR 353.12, the petitioner alleges that certain helical spring lock washers (spring lock washers) from the People's Republic of China (PRC) and Taiwan are being, or are likely to be, sold in the United States at less than fair value within the meaning of section 731 of the Tariff Act of 1930, as amended (the Act), and that these imports are materially injuring, or threaten material injury to, a U.S. industry.

The petitioner has stated that it has standing to file the petition because it is an interested party, as defined under section 771(9)(C) of the Act, and because the petition was filed on behalf of the U.S. industry producing the products subject to this investigation. If any interested party, as described under paragraphs (C), (D), (E), or (F) of section 771(9) of the Act, wishes to register support for, or opposition to, this petition, it should file a written notification with the Assistant Secretary for Import Administration.

Under the Department's regulations, any producer or reseller seeking exclusion from a potential antidumping duty order must submit its request for exclusion within 30 days of the date of the publication of this notice. The procedures and requirements are contained in 19 CFR 353.14.

Scope of Investigations

For purposes of these investigations, spring lock washers are circular washers of carbon steel (including carbon alloy steel), or of stainless steel, heat-treated or non-heat-treated, plated or non-plated, with ends that are off-line. Spring lock washers are designed to: (1) Function as a spring to compensate for developed looseness between the component parts of a fastened assembly; 2) distribute the load over a larger area for screws or bolts: and (3) provide a hardened bearing surface. The scope does not include internal or external tooth washers, nor does it include spring lock washers made of other metals, such as cooper. Spring lock washers constitute one class or kind of merchandise. The spring lock washers subject to these investigations are classifiable under subheading 7318.21.0000 of the Harmonized Tariff Schedule of the United States (HTS). Although the HTS subheadings are provided for convenience and customs purposes, our written description of the scope of these proceedings is dispositive.

United States Price and Foreign Market Value

Petitioner based United States price (USP) on observed price quotes of spring lock washers by producers of the subject merchandise in the PRC and Taiwan. Petitioner made deductions from USP for U.S. duty and freight charges. For Taiwan, petitioner made an additional deduction for sales commissions.

For the PRC, petitioner based foreign market value (FMV) on the market valuation of the factors of production used in producing the subject merchandise. For Taiwan, petitioner based FMV on the constructed value of the subject merchandise. Petitioner selected India as the most comparable surrogate for the PRC. Petitioner, therefore, first attempted to value the factors of production using Indian information. Where this was not possible, petitioner valued the factors of production based on its own experience. Petitioner obtained and valued the factors of production in the PRC and constructed a value for Taiwan as follows:

- For carbon steel, petitioner used for the PRC and Taiwan the high carbon wire rod per pound quotation contained in the American Metal Market Closing Prices Report for July 7, 1992. Petitioner claimed that it was unable to obtain prices for high carbon wire rod in India. Petitioner used the cost in the United States for processing the green carbon rod to finished trapezoidally shaped wire. For stainless steel in Taiwan, petitioner used price quotations in Taiwan.
- For labor, petitioner estimated the number of workers involved in producing spring lock washers based on its own experience using comparable equipment. For the PRC, petitioner valued these labor figures in India. For Taiwan, petitioner adjusted its own labor costs to account for the cost differences in the wage rates of workers in Taiwan.
- For depreciation, petitioner has provided evidence that its own equipment used to produce the subject merchandise is comparable to the equipment in the PRC and Taiwan. Petitioner valued this equipment using estimated costs of equipment available in the United States, Taiwan and Japan. Depreciation was based on a ten year period.
- For energy, petitioner estimated the amount consumed in producing the subject merchandise based on its own experience using comparable equipment. Petitioner divided energy cost into electricity cost and natural gas cost. For the PRC, petitioner adjusted its own energy costs to reflect the costs in India. For Taiwan, petitioner adjusted its own electricity cost to reflect the cost of electricity in Taiwan. Petitioner claimed that Taiwan natural gas costs were comparable to its own, and therefore made no adjustment.
- For tooling, petitioner used its own actual costs for both the PRC and Taiwan. Petitioner stated that it was impossible to obtain a public source for tooling costs since tooling is a function of production and the materials used. Petitioner stated that the tooling costs in the PRC and Taiwan should not vary from its own costs when using comparable equipment.
- For selling, general and administrative expenses (SG&A), petitioner used the statutory minimum of ten percent of the cost of manufacture for both the PRC and Taiwan.
- For profit, petitioner used the statutory minimum of eight percent of the cost of manufacture plus SG&A expenses for both the PRC and Taiwan.
- For packing, petitioner estimated the cost for both the PRC and Taiwan as a percentage of the cost of production based on its own experience.

Petitioner calculated margins for both plain and plated carbon steel lock washers in the PRC and Taiwan. For Taiwan, petitioner provided a plating price quote in Taiwan to demonstrate this cost. For the PRC, petitioner obtained and valued the plating factors of production as follows:

- For chemicals, petitioner stated that it was not able to value these factors in India after expending considerable time and effort. However, petitioner stated that the costs of the chemicals in India are comparable to its own chemical costs. Therefore, petitioner used its own chemical costs, adjusted for one percent waste.
- For labor, petitioner estimated the number of workers involved in the plating operation producing spring lock washers based on its own experience using comparable equipment. Petitioner valued these labor figures in India.
- For depreciation, petitioner stated that its own equipment used to produce the subject merchandise is comparable to the equipment in the PRC. Depreciation was based on a ten year period.
- For energy, petitioner used its own cost per pound.
- For SG&A, petitioner used the statutory minimum of ten percent of the cost of manufacture.
- For profit, petitioner used the statutory minimum of eight percent of the cost of manufacture plus SG&A expenses.

The range of dumping margins of spring lock washers from the PRC based on a comparison of USP to CV alleged by petitioner is 92.30 percent to 128.63

percent. The range of dumping margins of spring lock washers from Taiwan based on a comparison of USP to CV alleged by petitioner is 6.88 percent to 36.15 percent.

Initiation of Investigations

We have examined the petition on spring lock washers from the PRC and Taiwan and have found that the petition meets the requirements of section 732(b) of the Act. Therefore, we are initiating antidumping duty investigations to determine whether imports of spring lock washers from the PRC and Taiwan are being, or are likely to be, sold in the United States at less than fair value.

Preliminary Determinations by the International Trade Commission

The International Trade Commission (ITC) will determine by October 23, 1992, whether there is a reasonable indication that imports of spring lock washers from the PRC and Taiwan are materially injuring, or threaten material injury to, a U.S. industry. Negative ITC determinations will result in the investigations being terminated; otherwise, the investigations will proceed according to statutory and regulatory time limits.

This notice is published pursuant to section 732(c)(2) of the Act and 19 CFR 353.13(b).

Dated: September 28, 1992.

Rolf Th. Lundberg, Jr.,

Acting Assistant Secretary for Import Administration.

[FR Doc. 92-24100 Filed 10-2-92; 8:45 am]

BILLING CODE 3510-DS-M

APPENDIX B

CALENDAR OF THE PUBLIC CONFERENCE

CALENDAR OF PUBLIC CONFERENCE

Investigations Nos. 731-TA-624 and 625 (Preliminary)

CERTAIN HELICAL SPRING LOCKWASHERS FROM THE PEOPLE'S REPUBLIC OF CHINA AND TAIWAN

Those listed below appeared at the U.S. International Trade Commission's conference that was held in connection with the subject investigations at 9:30 a.m. on Wednesday, September 30, 1992, in the Main Hearing Room (room 101) of the USITC building, 500 E Street, S.W., Washington, DC:

In support of the imposition of antidumping duties

Hume & Associates
Los Angeles, CA
on behalf of--

Shakeproof Industrial Products Division, Illinois Tool Works

Joseph F. Musuraca, General Manager
Kenneth Vahl, Sales Manager

West Coast Lockwasher, City of Industry, CA

Lee Harper, President

Robert T. Hume, Esq.--OF COUNSEL

In opposition to the imposition of antidumping duties

Barnes, Richardson, & Colburn
Washington, DC
on behalf of--

American Association of Fastener Importers (AAFI)

Steven Soule, Principal, Soule, Blake, & Wechsler
Bruce Darling, Purchasing Manager, Porteous Fastener

Matthew T. McGrath, Esq.--OF COUNSEL

APPENDIX C
SUMMARY DATA

Table C-1
Carbon steel helical spring lockwashers: Summary data concerning the U.S. market (**QUANTITIES IN POUNDS**), 1989-91, January-June 1991, and January-June 1992

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Table C-2
Carbon steel helical spring lockwashers: Summary data concerning the U.S. market (QUANTITIES IN UNITS), 1989-91, January-June 1991, and January-June 1992

(Quantity = 1,000 units, value = 1,000 dollars, unit values and unit labor costs are per 1,000 units, period changes = percent, except where noted)

Item	Reported data			Jan.-June--		Period changes			
	1989	1990	1991	1991	1992	1989-91	1989-90	1990-91	Jan.-June 1991-92
U.S. consumption quantity:									
Amount	2,742,720	2,796,187	2,604,207	1,360,882	1,459,893	-5.1	+1.9	-6.9	+7.3
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	16.3	***	28.3	***	23.5	+11.9	***	***	***
Taiwan	0.5	***	1.5	***	1.2	+1.0	***	***	***
Subtotal	16.8	22.0	29.8	29.6	24.7	+13.0	+5.2	+7.8	-4.9
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	12,391	13,268	12,147	6,285	7,005	-2.0	+7.1	-8.4	+11.5
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	13.4	***	23.1	***	20.7	+9.7	***	***	***
Taiwan	0.3	***	0.5	***	0.4	+0.2	***	***	***
Subtotal	13.7	20.1	23.6	23.0	21.1	+9.9	+6.4	+3.5	-1.9
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. importers' imports from--									
China:									
U.S. shipments quantity	448,235	***	736,254	***	342,840	+64.3	***	***	***
U.S. shipments value	1,660	***	2,805	***	1,447	+69.0	***	***	***
Unit value	$3.70	$***	$3.81	$***	$4.22	+2.9	***	***	***
Ending inventory qty	***	***	***	***	***	-6.6	+22.4	-23.7	+28.6
Taiwan:									
U.S. shipments quantity	12,752	***	38,699	***	17,969	+203.5	***	***	***
U.S. shipments value	39	***	60	***	30	+53.8	***	***	***
Unit value	$3.06	$***	$1.55	$***	$1.67	-49.3	***	***	***
Ending inventory qty	***	***	***	***	***	(4)	0	(4)	+33.3
Subject sources:									
U.S. shipments quantity	460,987	614,382	774,953	403,498	360,809	+68.1	+33.3	+26.1	-10.6
U.S. shipments value	1,699	2,663	2,865	1,445	1,477	+68.6	+56.7	+7.6	+2.2
Unit value	$3.69	$4.33	$3.70	$3.58	$4.09	+0.3	+17.6	-14.7	+14.3
Ending inventory qty	***	***	***	***	***	-6.5	+22.4	-23.6	+28.6
Other sources:									
U.S. shipments quantity	***	***	***	***	***	-56.3	-59.4	+7.8	+22.2
U.S. shipments value	***	***	***	***	***	+41.7	+21.6	+16.5	+31.7
Unit value	$***	$***	$***	$***	$***	+224.5	+199.9	+8.2	+7.8
Ending inventory qty	***	***	***	***	***	(5)	(5)	+38.5	+178.7
All sources:									
U.S. shipments quantity	***	***	***	***	***	+63.7	+30.0	+25.9	-10.3
U.S. shipments value	***	***	***	***	***	+65.8	+53.1	+8.3	+4.8
Unit value	$***	$***	$***	$***	$***	+1.3	+17.8	-14.0	+16.8
U.S. producers'--									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments[1]	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventory/shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Total comp. ($1,000)	***	***	***	***	***	***	***	***	***
Hourly total compensation	$***	$***	$***	$***	$***	***	***	***	***
Productivity (units/hour)	***	***	***	***	***	***	***	***	***
Unit labor costs	$***	$***	$***	$***	$***	***	***	***	***
Net sales value	***	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***	***	***	***
Op. income (loss)/sales[1]	***	***	***	***	***	***	***	***	***

[1] 'Reported data' are in percent and 'period changes' are in percentage-point.
[2] An increase of less than 0.05 percentage points.
[3] A decrease of less than 0.05 percentage points.
[4] Not applicable.
[5] An increase of 1,000 percent or more.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table C-3
Stainless steel helical spring lockwashers: Summary data concerning the U.S. market (**QUANTITIES IN POUNDS**), 1989-91, January-June 1991, and January-June 1992

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Table C-4
Stainless steel helical spring lockwashers: Summary data concerning the U.S. market (**QUANTITIES IN UNITS**), 1989-91, January-June 1991, and January-June 1992

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Table C-5
Subject helical spring lockwashers: Summary data concerning the U.S. market (QUANTITIES IN POUNDS), 1989-91, January-June 1991, and January-June 1992

(Quantity=1,000 pounds, value=1,000 dollars, unit values and unit labor costs are per pound, period changes=percent, except where noted)

Item	Reported data			Jan.-June--		Period changes			
	1989	1990	1991	1991	1992	1989-91	1989-90	1990-91	Jan.-June 1991-92
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***	***	***
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***	***	***
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. importers' imports from--									
China:									
Imports quantity	6,385	6,759	6,966	2,595	3,392	+9.1	+5.9	+3.1	+30.7
Imports value	2,670	2,794	2,729	1,016	1,377	+2.2	+4.6	-2.3	+35.5
Unit value	$0.42	$0.41	$0.39	$0.39	$0.41	-6.3	-1.1	-5.2	+3.7
Taiwan:									
Imports quantity	1,553	1,246	1,415	679	695	-8.9	-19.8	+13.6	+2.4
Imports value	2,091	2,163	2,504	1,253	1,285	+19.8	+3.4	+15.8	+2.6
Unit value	$1.35	$1.74	$1.77	$1.84	$1.85	+31.4	+28.9	+1.9	+0.2
Subject sources:									
Imports quantity	7,938	8,005	8,380	3,274	4,087	+5.6	+0.8	+4.7	+24.8
Imports value	4,761	4,957	5,232	2,269	2,661	+9.9	+4.1	+5.5	+17.3
Unit value	$0.60	$0.62	$0.62	$0.69	$0.65	+4.1	+3.2	+0.8	-6.0
Other sources:									
Imports quantity	3,956	2,683	2,166	1,160	876	-45.2	-32.2	-19.3	-24.5
Imports value	6,457	8,100	8,046	4,403	4,003	+24.6	+25.4	-0.7	-9.1
Unit value	$1.63	$3.02	$3.72	$3.80	$4.57	+127.6	+84.9	+23.1	+20.4
All sources:									
Imports quantity	11,894	10,688	10,546	4,434	4,963	-11.3	-10.1	-1.3	+11.9
Imports value	11,218	13,057	13,279	6,672	6,665	+18.4	+16.4	+1.7	-0.1
Unit value	$0.94	$1.22	$1.26	$1.50	$1.34	+33.5	+29.5	+3.1	-10.7
U.S. producers'--									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments[1]	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventory/shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Total comp. ($1,000)	***	***	***	***	***	***	***	***	***
Hourly total compensation	$***	$***	$***	$***	$***	***	***	***	***
Productivity (pounds/hr.)	***	***	***	***	***	***	***	***	***
Unit labor costs	$***	$***	$***	$***	$***	***	***	***	***
Net sales value	***	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***	***	***	***
Op. income (loss)/sales[1]	***	***	***	***	***	***	***	***	***

[1] 'Reported data' are in percent and 'period changes' are in percentage-point.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table C-6
Subject helical spring lockwashers: Summary data concerning the U.S. market (**QUANTITIES IN UNITS**), 1989-91, January-June 1991, and January-June 1992

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Table C-7
Nonsubject helical spring lockwashers: Summary data concerning the U.S. market (**QUANTITIES IN POUNDS**), 1989-91, January-June 1991, and January-June 1992

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Table C-8
Nonsubject helical spring lockwashers: Summary data concerning the U.S. market (**QUANTITIES IN UNITS**), 1989-91, January-June 1991, and January-June 1992

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Table C-9
Helical spring lockwashers: Summary data concerning the U.S. market (QUANTITIES IN POUNDS), 1989-91, January-June 1991, and January-June 1992

(Quantity=1,000 pounds, value=1,000 dollars, unit values and unit labor costs are per pound, period changes=percent, except where noted)

Item	Reported data			Jan.-June--		Period changes			
	1989	1990	1991	1991	1992	1989-91	1989-90	1990-91	Jan.-June 1991-92
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***	***	***
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***	***	***
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. importers' imports from--									
China:									
Imports quantity	6,385	6,759	6,966	2,595	3,392	+9.1	+5.9	+3.1	+30.7
Imports value	2,670	2,794	2,729	1,016	1,377	+2.2	+4.6	-2.3	+35.5
Unit value	$0.42	$0.41	$0.39	$0.39	$0.41	-6.3	-1.1	-5.2	+3.7
Taiwan:									
Imports quantity	1,553	1,246	1,415	679	695	-8.9	-19.8	+13.6	+2.4
Imports value	2,091	2,163	2,504	1,253	1,285	+19.8	+3.4	+15.8	+2.6
Unit value	$1.35	$1.74	$1.77	$1.84	$1.85	+31.4	+28.9	+1.9	+0.2
Subject sources:									
Imports quantity	7,938	8,005	8,380	3,274	4,087	+5.6	+0.8	+4.7	+24.8
Imports value	4,761	4,957	5,232	2,269	2,661	+9.9	+4.1	+5.5	+17.3
Unit value	$0.60	$0.62	$0.62	$0.69	$0.65	+4.1	+3.2	+0.8	-6.0
Other sources:									
Imports quantity	3,956	2,683	2,166	1,160	876	-45.2	-32.2	-19.3	-24.5
Imports value	6,457	8,100	8,046	4,403	4,003	+24.6	+25.4	-0.7	-9.1
Unit value	$1.63	$3.02	$3.72	$3.80	$4.57	+127.6	+84.9	+23.1	+20.4
All sources:									
Imports quantity	11,894	10,688	10,546	4,434	4,963	-11.3	-10.1	-1.3	+11.9
Imports value	11,218	13,057	13,279	6,672	6,665	+18.4	+16.4	+1.7	-0.1
Unit value	$0.94	$1.22	$1.26	$1.50	$1.34	+33.5	+29.5	+3.1	-10.7
U.S. producers'--									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments[1]	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventory/shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Total comp. ($1,000)	***	***	***	***	***	***	***	***	***
Hourly total compensation	$***	$***	$***	$***	$***	***	***	***	***
Productivity (pounds/hr.)	***	***	***	***	***	***	***	***	***
Unit labor costs	$***	$***	$***	$***	$***	***	***	***	***
Net sales value	***	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***	***	***	***
Op. income (loss)/sales[1]	***	***	***	***	***	***	***	***	***

[1] 'Reported data' are in percent and 'period changes' are in percentage-point.
[2] A decrease of less than 0.05 percentage points.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table C-10
Helical spring lockwashers: Summary data concerning the U.S. market (QUANTITIES IN UNITS), 1989-91, January-June 1991, and January-June 1992

(Quantity=1,000 units, value=1,000 dollars, unit values and unit labor costs are per 1,000 units, period changes=percent, except where noted)

Item	Reported data			Jan.-June--		Period changes			
	1989	1990	1991	1991	1992	1989-91	1989-90	1990-91	Jan.-June 1991-92
U.S. consumption quantity:									
Amount	***	***	***	***	***	-5.4	+1.4	-6.7	+6.9
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	+11.1	+4.6	+6.5	-3.9
Taiwan	***	***	***	***	***	+1.2	+0.3	+0.9	-0.9
Subtotal	***	***	***	***	***	+12.3	+4.8	+7.4	-4.7
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	-5.4	+3.6	-8.7	+10.0
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	+8.0	+5.4	+2.7	-1.1
Taiwan	***	***	***	***	***	+0.7	-0.1	+0.8	-0.5
Subtotal	***	***	***	***	***	+8.7	+5.2	+3.5	-1.6
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. importers' imports from--									
China:									
U.S. shipments quantity	***	***	***	***	***	+64.3	+32.1	+24.4	-9.1
U.S. shipments value	***	***	***	***	***	+69.0	+58.0	+6.9	+3.1
Unit value	$***	$***	$***	$***	$***	+2.9	+19.6	-14.0	+13.3
Ending inventory qty	***	***	***	***	***	-6.6	+22.4	-23.7	+28.6
Taiwan:									
U.S. shipments quantity	***	***	***	***	***	+229.4	+60.8	+104.8	-37.9
U.S. shipments value	***	***	***	***	***	+154.7	-28.1	+254.3	-35.8
Unit value	$***	$***	$***	$***	$***	-22.7	-55.3	+73.0	+3.3
Ending inventory qty	***	***	***	***	***	(2)	0	(2)	+150.0
Subject sources:									
U.S. shipments quantity	462,515	614,922	783,288	407,891	362,025	+69.4	+33.0	+27.4	-11.2
U.S. shipments value	1,724	2,669	2,968	1,499	1,508	+72.2	+54.8	+11.2	+0.6
Unit value	$3.73	$4.34	$2.51	$3.68	$4.17	+1.7	+16.4	-12.7	+13.3
Ending inventory qty	320,829	392,796	300,405	246,483	317,788	-6.4	+22.4	-23.5	+28.9
Other sources:									
U.S. shipments quantity	***	***	***	***	***	+129.9	+76.2	+30.5	+75.6
U.S. shipments value	***	***	***	***	***	+150.0	+99.5	+25.3	+56.9
Unit value	$***	$***	$***	$***	$***	+8.8	+13.2	-3.9	-10.6
Ending inventory qty	***	***	***	***	***	(3)	(3)	+38.5	+178.7
All sources:									
U.S. shipments quantity	***	***	***	***	***	+71.6	+34.5	+27.5	-7.5
U.S. shipments value	***	***	***	***	***	+80.9	+59.8	+13.2	+8.9
Unit value	$***	$***	$***	$***	$***	+5.4	+18.8	-11.3	+17.7
U.S. producers'--									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments[1]	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventory/shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Total comp. ($1,000)	***	***	***	***	***	***	***	***	***
Hourly total compensation	$***	$***	$***	$***	$***	***	***	***	***
Productivity (units/hour)	***	***	***	***	***	***	***	***	***
Unit labor costs	$***	$***	$***	$***	$***	***	***	***	***
Net sales value	***	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***	***	***	***
Op. income (loss)/sales[1]	***	***	***	***	***	***	***	***	***

[1] 'Reported data' are in percent and 'period changes' are in percentage-point.
[2] Not applicable.
[3] An increase of 1,000 percent or more.
[4] An increase of less than 0.05 percentage points.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table C-11
Spring lockwashers: Summary data concerning the U.S. market, 1989-91, January-June 1991, and January-June 1992

(Quantity=1,000 units, value=1,000 dollars, unit values and unit labor costs are per 1,000 units, period changes=percent, except where noted)

Item	Reported data			Jan.-June--		Period changes			
	1989	1990	1991	1991	1992	1989-91	1989-90	1990-91	Jan.-June 1991-92
U.S. consumption quantity:									
Amount	***	***	***	***	***	-5.9	-0.9	-5.0	+5.5
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	+10.1	+4.5	+5.6	-3.2
Taiwan	***	***	***	***	***	+1.1	+0.3	+0.8	-0.8
Subtotal	***	***	***	***	***	+11.2	+4.8	+6.4	-4.0
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	-4.2	+2.1	-6.2	+9.0
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	+6.6	+4.8	+1.9	-0.8
Taiwan	***	***	***	***	***	+0.6	-0.1	+0.7	-0.4
Subtotal	***	***	***	***	***	+7.2	+4.7	+2.5	-1.2
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. importers' imports from--									
China:									
U.S. shipments quantity	***	***	***	***	***	+64.3	+32.1	+24.4	-9.1
U.S. shipments value	***	***	***	***	***	+69.0	+58.0	+6.9	+3.1
Unit value	$***	$***	$***	$***	$***	+2.9	+19.6	-14.0	+13.3
Ending inventory qty	***	***	***	***	***	-6.6	+22.4	-23.7	+28.6
Taiwan:									
U.S. shipments quantity	***	***	***	***	***	+229.4	+60.8	+104.8	-37.9
U.S. shipments value	***	***	***	***	***	+154.7	-28.1	+254.3	-35.8
Unit value	$***	$***	$***	$***	$***	-22.7	-55.3	+73.0	+3.3
Ending inventory qty	***	***	***	***	***	(3)	0	(3)	+150.0
Subject sources:									
U.S. shipments quantity	462,515	614,922	783,288	407,891	362,025	+69.4	+33.0	+27.4	-11.2
U.S. shipments value	1,724	2,669	2,968	1,499	1,508	+72.2	+54.8	+11.2	+0.6
Unit value	$3.73	$4.34	$3.79	$3.68	$4.17	+1.7	+16.4	-12.7	+13.3
Ending inventory qty	320,829	392,796	300,405	246,483	317,788	-6.4	+22.4	-23.5	+28.9
Other sources:									
U.S. shipments quantity	***	***	***	***	***	+60.8	-3.6	+66.7	+79.3
U.S. shipments value	***	***	***	***	***	+88.5	+52.5	+23.6	+59.0
Unit value	$***	$***	$***	$***	$***	+17.3	+64.3	-28.6	-8.0
Ending inventory qty	***	***	***	***	***	+77.1	+72.7	+2.6	+841.0
All sources:									
U.S. shipments quantity	***	***	***	***	***	+68.6	+29.8	+29.9	-4.8
U.S. shipments value	***	***	***	***	***	+75.1	+54.4	+13.4	+11.5
Unit value	$***	$***	$***	$***	$***	+3.9	+19.2	-12.9	+17.6
U.S. producers'--									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments[1]	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventory/shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Total comp. ($1,000)	***	***	***	***	***	***	***	***	***
Hourly total compensation	$***	$***	$***	$***	$***	***	***	***	***
Productivity (units/hour)	***	***	***	***	***	***	***	***	***
Unit labor costs	$***	$***	$***	$***	$***	***	***	***	***
Net sales value	***	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***	***	***	***
Op. income (loss)/sales[1]	***	***	***	***	***	***	***	***	***

[1] 'Reported data' are in percent and 'period changes' are in percentage-point.
[2] A decrease of less than 0.05 percentage points.
[3] Not applicable.
[4] An increase of less than 0.05 percent.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table C-12
Tooth lockwashers: Summary data concerning the U.S. market, 1989-91, January-June 1991, and January-June 1992

(Quantity=1,000 units, value=1,000 dollars, unit values and unit labor costs are per 1,000 units, period changes=percent, except where noted)

Item	Reported data			Jan.-June--		Period changes			
	1989	1990	1991	1991	1992	1989-91	1989-90	1990-91	Jan.-June 1991-92
U.S. consumption quantity:									
Amount	1,665,545	1,246,851	***	***	***	***	-25.1	***	+8.3
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	7,801	6,807	5,912	2,876	3,459	-24.2	-12.7	-13.1	+20.3
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. importers' imports from--									
Other sources:									
U.S. shipments quantity	***	***	296,810	185,484	166,741	***	-14.6	***	-10.1
U.S. shipments value	***	***	***	***	***	-10.1	-14.3	+5.0	+10.9
Unit value	$***	$3.26	$***	$***	$***	+9.3	***	***	+23.9
Ending inventory qty	***	***	***	***	***	-47.4	-6.9	-43.5	-40.5
All sources:									
U.S. shipments quantity	***	***	296,810	185,484	166,741	***	-14.6	***	-10.1
U.S. shipments value	***	***	***	***	***	-10.1	-14.3	+5.0	+10.9
Unit value	$***	$3.26	$***	$***	$***	+9.3	***	***	+23.9
U.S. producers'--									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments[1]	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventory/shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Total comp. ($1,000)	***	***	***	***	***	***	***	***	***
Hourly total compensation	$***	$***	$***	$***	$***	***	***	***	***
Productivity (units/hour)	***	***	***	***	***	***	***	***	***
Unit labor costs	$***	$***	$***	$***	$***	***	***	***	***
Net sales value	***	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***	***	***	***
Op. income (loss)/sales[1]	***	***	***	***	***	***	***	***	***

[1] 'Reported data' are in percent and 'period changes' are in percentage-point.
[2] Not applicable.
[3] An increase of less than 0.05 percentage points.
[4] A decrease of less than 0.05 percentage points.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table C-13
Spring and tooth lockwashers: Summary data concerning the U.S. market, 1989-91, January-June 1991, and January-June 1992

(Quantity=1,000 units, value=1,000 dollars, unit values and unit labor costs are per 1,000 units, period changes=percent, except where noted)

Item	Reported data			Jan.-June--		Period changes			
	1989	1990	1991	1991	1992	1989-91	1989-90	1990-91	Jan.-June 1991-92
U.S. consumption quantity:									
Amount	***	***	***	***	***	-15.6	-9.0	-7.2	+6.2
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	+8.5	+4.1	+4.4	-2.5
Taiwan	***	***	***	***	***	+0.8	+0.2	+0.6	-0.6
Subtotal	***	***	***	***	***	+9.4	+4.3	+5.1	-3.0
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	-10.0	-2.2	-8.0	+11.6
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	+5.4	+3.8	+1.6	-0.9
Taiwan	***	***	***	***	***	+0.4	-0.1	+0.5	-0.3
Subtotal	***	***	***	***	***	+5.8	+3.7	+2.1	-1.2
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. importers' imports from--									
China:									
U.S. shipments quantity	***	***	***	***	***	+64.3	+32.1	+24.4	-9.1
U.S. shipments value	***	***	***	***	***	+69.0	+58.0	+6.9	+3.1
Unit value	$***	$***	$***	$***	$***	+2.9	+19.6	-14.0	+13.3
Ending inventory qty	***	***	***	***	***	-6.6	+22.4	-23.7	+28.6
Taiwan:									
U.S. shipments quantity	***	***	***	***	***	+229.4	+60.8	+104.8	-37.9
U.S. shipments value	***	***	***	***	***	+154.7	-28.1	+254.3	-35.8
Unit value	$***	$***	$***	$***	$***	-22.7	-55.3	+73.0	+3.3
Ending inventory qty	***	***	***	***	***	(2)	0	(2)	+150.0
Subject sources:									
U.S. shipments quantity	462,515	614,922	783,288	407,891	362,025	+69.4	+33.0	+27.4	-11.2
U.S. shipments value	1,724	2,669	2,968	1,499	1,508	+72.2	+54.8	+11.2	+0.6
Unit value	$3.73	$4.34	$3.79	$3.68	$4.17	+1.7	+16.4	-12.7	+13.3
Ending inventory qty	320,829	392,796	300,405	246,483	317,788	-6.4	+22.4	-23.5	+28.9
Other sources:									
U.S. shipments quantity	***	***	***	***	***	-9.3	-13.4	+4.8	+2.9
U.S. shipments value	***	***	***	***	***	+14.2	+2.1	+11.8	+30.2
Unit value	$***	$***	$***	$***	$***	+25.9	+18.6	+6.2	+28.1
Ending inventory qty	***	***	***	***	***	-45.0	-5.3	-41.9	-15.4
All sources:									
U.S. shipments quantity	***	***	***	***	***	+32.7	+11.3	+19.2	-6.3
U.S. shipments value	***	***	***	***	***	+44.7	+29.8	+11.4	+11.4
Unit value	$***	$***	$***	$***	$***	+9.0	+16.8	-6.7	+19.5
U.S. producers'--									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments[1]	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	$***	$***	$***	$***	$***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventory/shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Total comp. ($1,000)	***	***	***	***	***	***	***	***	***
Hourly total compensation	$***	$***	$***	$***	$***	***	***	***	***
Productivity (units/hour)	***	***	***	***	***	***	***	***	***
Unit labor costs	$***	$***	$***	$***	$***	***	***	***	***
Net sales value	***	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***	***	***	***
Op. income (loss)/sales[1]	***	***	***	***	***	***	***	***	***

[1] 'Reported data' are in percent and 'period changes' are in percentage-point.
[2] Not applicable.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

APPENDIX D

APPARENT CONSUMPTION OF THE CERTAIN HELICAL SPRING LOCKWASHERS SUBJECT TO INVESTIGATION

Table D-1
Certain helical spring lockwashers:[1] Shakeproof's shipments, U.S. imports, and apparent consumption, 1989-91, January-June 1991, and January-June 1992

Item	1989	1990	1991	January-June-- 1991	1992
	Quantity (1,000 pounds)				
Producers' U.S. shipments..	***	***	***	***	***
U.S. imports from--					
China.....	6,385	6,759	6,966	2,595	3,392
Taiwan.....	1,553	1,246	1,415	679	695
Subtotal.....	7,938	8,005	8,380	3,274	4,087
Other sources[2].....	3,956	2,683	2,166	1,160	876
Total.....	11,894	10,688	10,546	4,434	4,963
Apparent consumption.	***	***	***	***	***
	As a share of the quantity of apparent consumption (percent)				
Producers' U.S. shipments..	***	***	***	***	***
U.S. imports from--					
China.....	***	***	***	***	***
Taiwan.....	***	***	***	***	***
Subtotal.....	***	***	***	***	***
Other sources.....	***	***	***	***	***
Total.....	***	***	***	***	***
	Value (1,000 dollars)				
Producers' U.S. shipments..	***	***	***	***	***
U.S. imports from--					
China.....	2,670	2,794	2,729	1,016	1,377
Taiwan.....	2,091	2,163	2,504	1,253	1,285
Subtotal.....	4,761	4,957	5,232	2,269	2,661
Other sources[2].....	6,457	8,100	8,047	4,403	4,003
Total.....	11,218	13,057	13,279	6,672	6,665
Apparent consumption.	***	***	***	***	***
	As a share of the value of apparent consumption (percent)				
Producers' U.S. shipments..	***	***	***	***	***
U.S. imports from--					
China.....	***	***	***	***	***
Taiwan.....	***	***	***	***	***
Subtotal.....	***	***	***	***	***
Other sources.....	***	***	***	***	***
Total.....	***	***	***	***	***

[1] Limited to carbon steel and stainless steel helical spring lockwashers.
[2] These data may be significantly overstated. Parties agree that the degree of overstatement for China and Taiwan, however, is considerably less.

Note.--Because of rounding, shares may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

APPENDIX E

COMMENTS RECEIVED FROM SHAKEPROOF ON THE IMPACT OF IMPORTS OF CERTAIN HELICAL SPRING LOCKWASHERS FROM CHINA AND TAIWAN ON ITS GROWTH, INVESTMENT, ABILITY TO RAISE CAPITAL, AND DEVELOPMENT AND PRODUCTION EFFORTS

The Commission requested Shakeproof to describe and explain the actual and potential negative effects, if any, of imports of certain helical spring lockwashers from China and Taiwan on its growth, investment, ability to raise capital, and development and production efforts (including efforts to develop a derivative or improved version of their product).

Actual Negative Effects

* * * * * * *

Anticipated Negative Effects

* * * * * * *

Influence of Imports on Capital Investment

* * * * * * *