UNITED STATES TARIFF COMMISSION

HYDRAULIC PRESSES AND INDUSTRIAL HYDRAULIC VALVES: CERTAIN WORKERS OF THE COLUMBUS, OHIO, PLANT OF THE DENISON DIVISION OF THE ABEX CORP.

Report to the President
on Investigation No. TEA-W-149
Under Section 301(c)(2) of the Trade Expansion Act of 1962

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UNITED STATES TARIFF COMMISSION

Address all communications to

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

REPORT TO THE PRESIDENT

U.S. Tariff Commission,
September 11, 1972.

To the President:

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

On July 12, 1972, the United Steelworkers of America filed a petition for a determination of eligibility to apply for adjustment assistance on behalf of the former workers of the Columbus, Ohio plant of the Denison Division of the Abex Corp., a subsidiary of Illinois Central Industries, Inc., engaged in the manufacture of hydraulic presses and industrial hydraulic valves. The Commission instituted an investigation (TEA-W-149) on July 18, 1972, to determine whether, as a result in major part of concessions granted under trade agreements, articles like or directly competitive with hydraulic presses (of the types provided for in item 674.35 of the Tariff Schedules of the United States (TSUS)) and industrial hydraulic valves (of the types provided for in items 680.22 and 680.27) manufactured by the Abex Corp. are being imported into the United States in such increased quantities as to cause, or threaten to cause, unemployment or underemployment of a significant number or proportion of the workers of such company, or appropriate subdivision thereof.

Public notice of the investigation was given in the Federal Register of July 21, 1972 (37 F.R. 14649). No public hearing was

requested by any party showing a proper interest in the subject matter of the investigation, and none was held.

The information herein was obtained principally through field interviews with officials of the Abex Corp.; from discussions with officials of other domestic producers; from conversations with importers, import specialists of the Bureau of Customs, and officers of local No. 6466, United Steelworkers of America; and from data contained in the Commission's files.

Finding of the Commission 1/

On the basis of its investigation, the Commission finds unanimously that articles like or directly competitive with the hydraulic presses manufactured by the Abex Corp. are not, as a result in major part of concessions granted under trade agreements, being imported into the United States in such increased quantities as to cause, or threaten to cause, unemployment or underemployment of a significant number or proportion of the workers of that firm or appropriate subdivision thereof.

Further, the Commission finds (Commissioner Leonard dissenting) that articles like or directly competitive with industrial hydraulic valves and parts thereof manufactured by the Abex Corp. are, as a result in major part of concessions granted under trade agreements, being imported into the United States in such increased quantities as to cause the unemployment and underemployment of a significant number or proportion of the workers at the Columbus, Ohio, plant of that firm.

1/ Commissioner Young did not participate in the decisions.

Considerations Supporting the Commission's Finding 1/

This investigation concerns a petition for adjustment assistance filed on behalf of the former workers of the Columbus, Ohio, plant of the Denison Division of the Abex Corp., who had been engaged in the manufacture of hydraulic presses and industrial hydraulic valves and their parts.

Before an affirmative determination may be made all of the requirements imposed by section 301(c)(2) of the Trade Expansion Act of 1962 must be satisfied. These requirements are as follows:

(1) Articles like or directly competitive with an article produced by the workers' firm or appropriate subdivision thereof must be imported in increased quantities;

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

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

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

With respect to hydraulic presses, we have concluded that imports of articles like or directly competitive with those manufactured by the petitioning workers are not increasing. The volume of imports of hydraulic presses have been very small in relation to domestic consumption. Imports are largely unique and are unlike those made at the Columbus plant; the imported presses are made for specific, limited

1/ Commissioner Ablondi concurs in the result.

uses for which the hydraulic presses made at Columbus would rarely be used. We find, therefore, that imports of presses like or directly competitive with those made at Columbus have been nil or negligible. Since the first requirement is not met, it is not necessary to examine the remaining requirements with respect to hydraulic presses.

We have made an affirmative determination with respect to industrial hydraulic valves since all of the requirements are satisfied.

The Columbus plant of the Denison Division is the only domestic facility in which the Abex Corp. manufactures industrial hydraulic valves, although the company manufactures large quantities of such valves in the United Kingdom and West Germany. The manufacturing operations involved in the production of hydraulic values at Columbus has amounted to the machining of the cast-steel body and assembly of the body and other parts into complete valves. The parts of an industrial hydraulic valve consist basically of a cast-steel body, a spool or notched cylindrical shaft, and various screws, springs, washers, and other small parts. The cast body is the most costly part of the valve.

Increased imports

Prior to 1967, the Denison Division of the Abex Corp. purchased all of its requirements for the assembly of valves from domestic sources. All of the casting bodies purchased domestically had to be machined--an operation performed at the Columbus plant. Beginning in 1967, Denison began to import machined castings and parts from the Abex subsidiaries in the United Kingdom and West Germany, thus

eliminating the necessity for the machining operation at Columbus on all imported castings.

Imports of machined castings in 1967 by Denison were small, * * *. Moreover, Denison's purchases in 1969 (both domestic and foreign) were abnormally large--* * *. Since 1969, the company has been working off its inventory of castings purchased in that year. Thus, although its imports of castings from abroad have declined since 1969, those purchased in that year have made up a substantial part of the castings it has since used in the manufacture of valves.

U.S. imports of hydraulic valves and parts by other importers also began in about 1968. Such imports have increased annually. We have, therefore, concluded that articles like or directly competitive with those produced by the petitioning workers are being imported in increased quantities.

In major part

Industrial hydraulic valves and parts are dutiable on entry into the United States under item 680.22 (principally hand-operated) or under item 680.27 (principally electrically operated). Since most of the imported castings may be used on either type of valve, virtually all are imported under item 680.27 at the current rate of 5 percent ad valorem instead of 11 percent under item 680.22. The rates of duty applicable to these items have been reduced substantially from the

beginning of the trade-agreement program from 45 percent to 11 percent ad valorem with respect to articles under item 680.22 and from 35 percent to 5 percent for articles entering under item 680.27.

The Denison Division has imported virtually all of its castings and parts under item 680.27. Denison (as well as others) did not begin to import in substantial quantities until 1968--the first year of a five-stage Kennedy Round reduction. If the 1930 rate of duty were applied to the most popular casting imported by Denison which accounted for a significant portion of total imports, the cost of the imported machined casting would exceed the cost of the identical domestic casting after machining costs at Columbus are added.

According to a major U.S. importer of industrial hydraulic valves it was extremely difficult for his firm to compete in the U.S. market during the period that the 10-percent surcharge was in effect in the second half of 1971; he believes that his firm would have ceased importing had the surcharge been greater. The fact that an increase in the duty of 10 percentage points constituted a serious burden to imports suggests that the duty reductions to carry out trade-agreement concessions--30 percentage points--were in major part the cause of increased imports.

We conclude that imports of industrial hydraulic valves and parts have increased as a result in major part of trade-agreement concessions.

Unemployment and underemployment

The number of production and related workers at Denison's Columbus plant declined steadily from * * * May 1970 to * * * July 1971. * * *. Machine operators were the most severely affected of any job classification among the production and related workers. The number of machine operators declined from * * * May 1971 to * * * September 1971. Moreover, a significant number of those still employed have been downgraded in classification and pay. * * *.

* * *. We have concluded that the third requirement is satisfied--a significant number of the workers concerned are unemployed and underemployed.

Major factor

The fourth requirement is that imports resulting in major part from tariff concessions must be the major factor in causing or threatening to cause the unemployment or underemployment. There is no doubt that importation of machined castings by the Denison Division was the major factor in causing or threatening to cause unemployment or underemployment at the Columbus plant. * * *. Were it not for these imports, the workers at the Columbus plant would still be engaged in machining castings, and would not have been unemployed or underemployed.

Conclusion

In view of the foregoing, we find that those petitioning workers of the Columbus plant engaged in the manufacture of hydraulic valves and parts have met the statutory requirements of the Trade Expansion Act, and therefore, believe that an affirmative determination is justified.

Dissenting Views of Commissioner Leonard

The main bone of contention I have with my colleagues in this determination is that I do not believe that any increased imports of articles like or directly competitive with the articles produced by the petitioning workers are the result in major part of concessions granted under trade agreements.

That is not to say that I am fully convinced that the other elements of the statute necessary for an affirmative determination have been satisfied. First of all, are there increased imports of like or directly competitive articles? There appear to be no imports of hydraulic presses which are like or directly competitive with those made by the workers' firm, the Denison Division of the Abex Corporation, in its Columbus, Ohio, plant. 1/ Data on imports of hydraulic valves and parts thereof are available only for a 5-year period and only in terms of value, not quantity. No trend is discernible for those 5 years, imports having risen from 1968 to 1969 but having declined from 1969 to 1970 and 1971, and apparently having started upward again in 1972, although data for part of the year would indicate that imports will not reach the level they occupied in 1969. 2/ Even more importantly, imports of valve parts by the Abex Corporation

1/ See p. A-15 of the report.
2/ See pp. A-19 and * * * of the report.

for assembly at the Columbus plant have been erratic and reached their peak in 1969. * * *. 1/

Second, there is some doubt that there is within the meaning of the statute unemployment or underemployment of a significant number or proportion of the petitioning workers. Some data indicate that there has been a decline in overall employment at the Columbus plant and specifically in the employment of machine operators. 2/ Other information obtained in the investigation reveals that the level of employment at the Columbus plant has not been lowered by the termination of valve production and allegedly that machine operators who were no longer being used to machine castings are being used in other capacities. 3/ These apparent contradictions may arise from the use of differing beginning dates in the employment statistics. Nevertheless, even if there are some workers who are unemployed or underemployed, the question remains as to whether they constitute "a significant number or proportion" under the statute.

Third, if it is conceded that there are increased imports of hydraulic valves or valve parts, are those imports the major factor causing any unemployment or underemployment? It is

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1/ * * *.
2/ * * *.
3/ * * *.

possible that the important factor creating unemployment or underemployment problems at the Columbus plant is not the phasing out of the machining operation on castings but the reduced production of hydraulic presses due not to imports to any considerable degree, but to a downturn in the machine tool sector of the U.S. economy. 1/

However, were each of these three statutory requirements--that is, an increase in imports of like or directly competitive articles, unemployment or underemployment, and the increased imports being the major factor causing the unemployment or underemployment--to be considered satisfied by the facts in this investigation, it is still necessary for an affirmative determination to find that the increased imports are in major part the result of trade-agreement concessions. This is the statutory requirement on which I find differently from my colleagues in this investigation and, I might add, in many investigations conducted by the Commission under the provisions of the Trade Expansion Act of 1962.

While I struggle with the language "in major part," my colleagues do not seem to find the requirements of the language as difficult of attainment. Perhaps it is an oversimplification on my

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1/ * * *.

part, but it appears to me that all that is necessary for an affirmative finding by some Commissioners on this particular statutory criterion is that there merely be increased imports contemporaneous with or subsequent to trade-agreement concessions. 1/ There seems to be little attempt to discover whether those concessions had anything to do with the increased imports. Simply, if concessions happened to precede increased imports in point of time, 2/ it is assumed that the one brought about the other without any cause and effect relationship having been established or even probed.

I am as distressed as any other at the hardships caused to workers whose jobs may have been displaced as a result of imports. But the wording of the statute is clear. In order to find that concessions are in major part responsible for increased imports, one must explore other possibilities which may have caused a rise in imports. Obviously a host of factors may be involved. Relative rates of inflation, exchange rate disparities, the exploitation of indigenous advantages--such as the availability of particular skills, wage rates, lower costs of materials or of power, advantageous transportation rates, government incentives, or anything else--may be important factors to be weighed in determining the relative importance of concessions. To seek information on these factors admittedly is an arduous undertaking, yet it is a statutory obligation.

1/ It has not been unusual for them at times even to put the cart before the horse and find increased imports followed by trade-agreement concessions and still find the criterion satisfied. See the opinion of Commissioners Clubb and Moore in Nonrubber Footwear: Report to the President on Investigation No. TEA-I-18 . . ., TC Publication 359, January 1971, pp. 5-24.

2/ For example, see Commissioner Moore's opinion in Television Receivers and Parts Thereof: Report to the President on Investigation No. TEA-I-21 . . ., TC Publication 436, November 1971, pp. 17-24.

Commission investigations, especially the 60-day firm and worker investigations, do not obtain much of the data that I find critical to a reasoned finding on this criterion. Since my colleagues do not appear to need this information as much as I, and in fact they sometimes seem not to want to secure it--perhaps because it will make obvious that imports have not been in major part the result of concessions--prospects for gaining the information are not bright.

Particularly curious is the basis used for an affirmative finding on this second statutory criterion in many recent cases. 1/ It appears sufficient for an affirmative finding on the second point by some of my colleagues to show that with a 1972 rate of duty the imported article undersells the like or directly competitive domestic article, but with a 1930 rate of duty the imported article would be undersold by the domestic article. Without further analysis, my colleagues feel the above situation, as if through alchemy, translates into the conclusion that increased imports are in major part the result of trade-agreement concessions that have occurred since 1930. It is indeed difficult to accept the view that this is a definition of "in major part the result of trade-agreement concessions." Correspondingly

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1/ For example, see Chairman Bedell's and Commissioner Moore's opinion in Television Yokes, Tuners, and Horizontal Output Transformers; and Unrecorded Magnetic Tape: Workers at RCA Plants, Indianapolis, Ind.: Report to the President on Worker Investigation No. TEA-W-144 . . ., TC Publication 502, July 1972, pp. 4-13; and Commissioner Moore's opinion in Ceramic Wall Tile: Workers of the Cambridge Tile Mfg. Co., Cincinnati, Ohio: Report to the President on Worker Investigation No. TEA-W-134 . . ., TC Publication 481, May 1972, pp. 8-12.

one should hesitate to accept the fact that such an a posteriori or even ex post facto view can provide the answer to the major causation of increased imports.

Turning to the instant investigation, it is observed that the affected workers are apparently comprised mainly of machinists who formerly performed the operation of machining the valve castings (bodies). This nonassembly operation was phased out when Abex made a decision to import machined castings instead of purchasing domestic parts and machining the castings at the Columbus plant. Thus the affected workers were victims of a management decision to purchase imported instead of domestic parts. It is my opinion that this management decision hinged on far more important factors than the small tariff concessions which have been granted in the last few years.

Admittedly it is difficult to identify and measure with complete accuracy the relative contributions of the many forces which led to Abex's decision to import machined castings, but it can be demonstrated that the major cause could not have been tariff reductions implemented pursuant to trade-agreement concessions. Abex is a large multinational corporation which owns and operates many plants in Europe, Canada, and Mexico, as well as in the United States. Besides the Columbus plant under investigation, Abex assembles and ships hydraulic valves and parts from plants in England and Germany, and supplies important tool markets in those as well as other European countries. Certainly a factor in Abex's decision to import was the

excessive costs of the low-volume production at Columbus as compared to its high-volume and more efficient European operations.

Comparative cost data show that the total cost of importing machined castings is less than the cost of machining the castings at Columbus. Moreover, this cost advantage holds true for some hydraulic valves even if one should use the comparison of the 1930 rate of duty (35 percent ad valorem) to the rate of duty in effect today. This points up a good example of the arbitrary use of the convenient methodology, mentioned above, of comparing the price of a domestic article with an imported article, using first the 1972 and then the 1930 rate of duty, and thus finding that the imported article is in major part the result of concessions. Price comparisons made on two of the best selling valve castings reveal that in one instance the 1930 rate of duty would have given the domestic producer a price advantage, but in the other instance even the 1930 rate of duty would still have not permitted the domestic producer to gain a price advantage. Disregarding the latter, yet seizing upon the former, my colleagues evidently conclude that trade-agreement concessions since 1930 disadvantaged domestic producers enough so that imports increased substantially. It appears to be a pick-and-choose game where those bits of information that help prove a point are selected out and used, without regard to the quantity or quality of the information on the other side.

Furthermore, there seems to be no apparent correlation between increased imports by Abex and duty reductions. Abex began to import valve parts in 1967, a year before the 1968 effective date of the first of five annual duty reductions under the Kennedy Round of trade agreements. Imports increased in 1968, rose considerably in 1969, the second stage of the concessions, but declined in 1970 and in 1971 as two further stages of the duty reductions became effective. In 1972, imports seemed to be up again as the fifth and final stage of the concessions was placed into effect. Thus, there is no clear relationship between the steady reductions in duties as a result of the Kennedy Round and import statistics. While this irregular pattern could in part reflect the vagaries of the domestic economy and the failure to adjust inventories and imports to the reality of the market, it is difficult to conclude that there were increased imports as a result in major part of trade-agreement concessions.

In conclusion, it is evident that Abex made a management decision to rationalize its production of hydraulic valves, and that this decision was determined by the maximum utilization of its most efficient and economical production facilities. Under the circumstances, it is doubtful whether tariff concessions were considered to be a factor at

all, much less the major factor in the decision. A multinational corporation is necessarily concerned with world markets and has the ability to adapt competitively on a world-wide scale. Domestic workers may be worthy of help when they are the victims of such high-level decision making; however, the proper relief of those workers does not lie in the existing statute which Congress has placed before us--one that stipulates that assistance may be rendered only as the result of increased imports caused <u>in major part</u> by trade-agreement concessions.

It is recognized that the popular climate today, more than ever, calls for relief to workers and firms who claim import injury. I am not unsympathetic with that view, but it is my strong feeling that such relief must be provided under law and not by administrative fiat, for what is a beneficial fiat today may become an administrative albatross, with all the attendant inequities, tomorrow. In so many of the investigations that we are called upon to conduct, the facts do not measure up to the criteria of the law.

INFORMATION OBTAINED IN THE INVESTIGATION

Description of Articles Under Investigation

The articles cited in the petition received from employees of the Columbus plant of the Denison Division of the Abex Corp. are certain hydraulic metalworking presses, 1/ iron and steel hydraulic valves (both hand operated and other, and their parts), and articles like or directly competitive with them.

Hydraulic presses

The hydraulic presses here considered are used on metals, plastics, rubber, leather, foods, and other materials for forming, forging, joining, assembling, piercing, compacting, stamping, and numerous other functions. The same basic presses are used for working all materials, but custom tooling and auxiliary features depend on the specific material and use. The basic components of such presses are as follows: frame, oil reservoir, hydraulic pump, electric motor, a ram and cylinder assembly, and at least one directional-control valve and one pressure-control valve. The frame comprises the housing and bed (surface to hold the work pieces). The oil reservoir supplies the medium for transmitting power hydraulically. The electric motor supplies the power to activate the pump which draws oil from the reservoir and transmits it under pressure through hose lines to the ram and cylinder assembly. Operation of the controls activates a ram-action control valve which permits the

1/ As noted below, nonmetalworking hydraulic presses were not specified in the petition but constitute a part of Denison's output.

oil to flow under pressure into the cylinder top, forcing the piston and attached ram toward the work piece on the bed of the press.

Hydraulic presses may be floor type (self-supporting) or bench type (requiring a stand). Presses of various conformations are made, but those made by Denison's Columbus plant, and therefore of interest in this investigation, are the "C" frame (gap frame) type and the open-rod type (4-post and 2-post). In the "C" frame press, the frame encloses all working units, but the working area and access to it are limited by the frame. In the open-rod type, the machinery is above the work area supported by 4 posts (sometimes 2 posts) at the edges of the bed, leaving a larger working area with better access for certain purposes than in a "C" frame type occuping the same space. Hydraulic presses are designated by the maximum tonnage of force that can be exerted by the ram; those of interest here range from 1 ton to 250 tons, although most of Denison's output is from 1 ton to 150 tons. The size of the press is generally determined by the tonnage rating; the larger the tonnage, the larger the press.

Hydraulic valves

Hydraulic valves are made for industrial, mobile, aerospace, and marine uses, and for military uses not previously categorized; the specifications for each use vary considerably.

The valves produced at Denison's Columbus plant, which makes industrial valves exclusively, are of three main types: directional control, pressure control, and flow control. 1/ Directional-control valves change the direction of oil flow when activated manually with levers or electrically by means of a solenoid, and are used for power purposes; pressure-control valves (such as safety valves or relief valves) are set to open automatically to relieve excess pressures; and flow-control valves will automatically provide a steady flow of oil regardless of variations in incoming pressures.

The industrial hydraulic control valves of the types made by Denison are basically composed of a cast-steel body (the most costly part of the valve), and a spool or notched cylindrical shaft which is within the body and shifts back and forth to direct the oil through openings in the body with the help of various screws, springs, washers, and other small parts. Hydraulic valves are designated by the diameter in inches of the openings in the cases and the gallons per minute (GPM) that can flow through them, as well as by the maximum pressures in thousands of pounds per square inch (PSI) that they can withstand; the valves made by Denison range from 1/4 inch to 2 inches in diameter, and include the most popular industrial sizes--3/4 inch and 3/8 inch. Directional-control valves are by far the major type of industrial hydraulic valve produced, followed by pressure-control valves and volume-flow-control valves, in that order.

1/ A fourth type of hydraulic valve is the servovalve, which is used in certain limited situations where automatic function is required and is very much more costly than the other types; servovalves are not made at the Columbus plant.

Other articles with similar uses

Mechanical presses, although more expensive than hydraulic presses of equivalent capabilities, can be used instead of hydraulic presses for certain limited applications; the open-back-inclinable (also called open-inclinable-gap) type may be substituted for products of the Columbus plant for certain uses. Hydraulic presses, however, are superior to mechanical presses for plastics molding, for their ability to control the speed of the ram, and their ability to hold specific pressures. They are also lighter and less bulky than mechanical presses capable of the same pressures. Nevertheless, for certain uses requiring very fast action, a mechanical press may be used.

Some mobile hydraulic valves could be used in lieu of industrial valves, but they are not made with the same characteristics, they are much cheaper and rarely are substituted for industrial valves. For certain limited applications, a variable displacement pump is used where a standard hydraulic pump and directional valve combined could be used, but the cost of the pump alone is greater than the combination and rarely is it used in place of an industrial valve.

U.S. Tariff Treatment

Metalworking hydraulic presses and nonmetalworking hydraulic presses are provided for under separate provisions of the Tariff Schedules of the United States.

Metalworking hydraulic presses

Metalworking hydraulic presses were classified for duty purposes under paragraph 372 of the Tariff Act of 1930 as "machine tools (including parts, n.s.p.f., wholly or in chief value of metal or porcelain) except jig-boring machine tools." Such articles were dutiable at 30 percent ad valorem from June 18, 1930, through December 31, 1947. As a result of a trade-agreement concession negotiated under the General Agreement on Tariffs and Trade (GATT), the rate was reduced from 30 percent ad valorem to 15 percent ad valorem effective January 1, 1948.

Since the adoption of the TSUS on August 31, 1963, metalworking hydraulic presses have been provided for under item 674.35; they continued to be dutiable at the rate of 15 percent ad valorem through December 31, 1967. Pursuant to concessions granted in the Kennedy Round negotiations under the GATT, the rate of duty applicable to item 674.35 was reduced in five successive stages from 15 percent ad valorem to 13 percent on January 1, 1968, to 12 percent on January 1, 1969, to 10 percent on January 1, 1970, to 9 percent on January 1, 1971, and to 7.5 percent on January 1, 1972.

The various rates of duty applicable to metalworking hydraulic presses under the Tariff Act of 1930 and under the TSUS, as modified by trade-agreement concessions, are given in the following table.

Metalworking hydraulic presses: U.S. rates of duty and effective date of rate changes, June 18, 1930, to Jan. 1, 1972

Effective date	Rate of duty	Authority
June 18, 1930	30% ad val.	Tariff Act of 1930 (par. 372).
Jan. 1, 1948	15% ad val.	GATT concession.
Aug. 31, 1963	15% ad val.	Adoption of TSUS (item 674.35).
Jan. 1, 1968	13% ad val.	GATT concession.
Jan. 1, 1969	12% ad val.	Do.
Jan. 1, 1970	10% ad val.	Do.
Jan. 1, 1971	9% ad val.	Do.
Jan. 1, 1972	7.5% ad val.	Do.

Nonmetalworking hydraulic presses

Nonmetalworking hydraulic presses are included in a large class of products currently dutiable under item 674.42 at 5 percent ad valorem. The rate of 10 percent ad valorem was adopted at the inception of the TSUS from an arithmetical average of the then current rates in basket provisions of paragraph 353 and 372. Pursuant to Kennedy Round negotiations, the 10-percent rate was reduced to 5 percent ad valorem in five successive stages which began on January 1, 1968. The last stage was effective on January 1, 1972.

Hydraulic valves

Hydraulic valves, hand-operated and check, 1/ and parts thereof, other than those of copper are currently dutiable at 11 percent ad valorem under item 680.22 along with numerous other products. Such valves were originally classified for duty purposes under paragraph 397 of the Tariff Act of 1930 and were dutiable at 45 percent ad valorem. These valves were included in a general basket class which

1/ Check valves are operated automatically by changes in the flow of fluids.

contained numerous articles or wares not specially provided for. The rate was reduced from 45 percent to 22.5 percent ad valorem effective January 1, 1948. The rate remained unchanged with the adoption of the TSUS; it was reduced in five successive stages beginning on January 1, 1966, and ending on January 1, 1970, as a result of Presidential Proclamation 3694 (Canadian Compensation), 1/ December 27, 1965, 3 CFR, 1965 Supp., p. 85, as modified by Presidential Proclamation 3818, Nov. 6, 1967, 32 F.R. 15467.

The various rates of duty applicable to hydraulic valves (item 680.22) under the Tariff Act of 1930 and under the TSUS, as modified by trade-agreement concessions are given in the following table.

Hydraulic valves (item 680.22): U.S. rates of duty and effective date of rate changes, June 18, 1930, to Jan. 1, 1972

Effective date	Rate of duty	Authority
June 18, 1930	45% ad val.	Tariff Act of 1930 (par. 397).
Jan. 1, 1948	22.5% ad val.	GATT concession.
Jan. 1, 1966	20% ad val.	Presidential Proclamation 3694 (Canadian Compensation).
Jan. 1, 1967	18% ad val.	Do.
Jan. 1, 1968	16% ad val.	Do.
Jan. 1, 1969	13% ad val.	Do.
Jan. 1, 1970	11% ad val.	Do.

Hydraulic valves other than hand-operated and check and parts thereof--such as electrically operated hydraulic valves--are dutiable under item 680.27 along with such products as taps, cocks, and similar devices, and parts thereof, used to control the flow of of liquids, gases, or solids.

Articles classified in 680.27 were formerly classified under paragraphs 353 and 372. At the inception of the TSUS (August 31, 1963)

1/ Proclamation of trade agreement with Canada providing compensatory concessions under GATT.

such articles were dutiable at a number of different rates in those paragraphs and the TSUS rate of 10 percent ad valorem was an estimated average rate. The bulk of the articles classifiable under item 680.27 was formerly dutiable at either 9 or 11.5 percent ad valorem. A few articles were formerly dutiable at a much higher rate. Under the Tariff Act of 1930, the rate was initially 35 percent ad valorem.

Pursuant to concessions granted in the Kennedy Round negotiations under the GATT, the rate of duty applicable to item 680.27 was reduced in five successive stages from 10 percent ad valorem to 9 percent on January 1, 1968, to 8 percent on January 1, 1969, to 7 percent on January 1, 1970, to 6 percent on January 1, 1971, and to 5 percent on January 1, 1972.

Other articles with similar uses

Mechanical presses fall under the same tariff provisions as hydraulic presses. Mobile hydraulic valves are given the same tariff treatment as all other types of hydraulic valves, including the industrial type. Variable displacement pumps are included in a large group of products currently dutiable under item 660.94 of the TSUS at 5 percent ad valorem; the current rate represents the last stage of a five stage reduction pursuant to Kennedy Round negotiations from the 10 percent rate which prevailed prior to January 1, 1968.

Import surcharge

Effective August 16, 1971, Presidential Proclamation 4074 imposed an additional duty of 10 percent ad valorem on most articles which were not free of duty under the TSUS and which were the subject of

tariff concessions granted by the United States in trade agreements. This additional duty was removed effective December 20, 1971. In the period August 16 to December 20, 1971, the aggregate duty on imports of metalworking hydraulic presses was 19 percent, on nonmetalworking hydraulic presses it was 16 percent; on valves of the type imported under 680.22, the aggregate duty amounted to 21 percent, and on valves imported under item 680.27, it was 16 percent ad valorem.

U.S. Producers

There are about 25 domestic manufacturers of hydraulic presses ranging from 1 to 150 tons in size. No single company dominates the market. With respect to bench presses under 12-ton capacity, however, the Columbus plant of the Denison Division of the Abex Corp. contributes a significant portion of domestic output.

While there are probably more than 100 domestic establishments engaged in the manufacture of hydraulic valves, there are only about 15 major producers. The Vickers Division of Sperry Rand Corp. and Parker Hannifin Corp. are the dominant companies in the industry.

Markets and Distribution

Hydraulic presses

It is estimated that about 20 percent of the hydraulic presses of the Denison type are for metalworking purposes exclusively, probably 60 percent are used for mixed metals and nonmetals work (such as assembling metal and nonmetal parts into a unit), and the remaining

20 percent are for exclusively nonmetals work, such as perforating plastics or shaping rubber. Assembly operations are an increasing market for hydraulic presses.

The various producers of hydraulic presses tend to specialize in specific types of presses. Denison, for instance, is adjudged to be the preeminent producer of "C" frame (gap frame) hydraulic presses. Most hydraulic presses are sold directly to the users because they are largely custom products made to fill individual requirements. Geographically, markets for hydraulic presses are considered to be national rather than regional.

Hydraulic valves

Most industrial hydraulic valves are sold to the machine tool industry for original equipment use; about 10 percent are sold for replacement use. The bulk of the demand in the United States is for low pressure valves (up to 3,000 p.s.i. capability) but a market does exist for high pressure valves (up to 5,000 p.s.i. capability). Denison supplies valves for both markets. Demand in Europe is largely for high pressure valves, and imports from West Germany are of the high pressure type. Imports from Japan, on the other hand, are chiefly for the larger low pressure market.

Because most industrial valves are stock items, they are sold to distributors as well as directly to large users. Markets for industrial valves are considered to be national rather than regional.

Prices

Hydraulic presses

* * *. Although producers may have standard prices for basic hydraulic presses as catalogued, the presses are usually sold with special features and custom tooling because of individual requirements, and therefore most hydraulic presses sold are individually priced.

Industrial hydraulic valves

Prices for industrial hydraulic valves range from about $40 to $10,000, although the upper figure is for uncommon, custom-made, special purpose valves. On the average, valves for directional control are priced at about $95, pressure control at about $50, and flow control at about $120. (Servovalves, in contrast, sell for about $300-$400.) Solenoid activated directional valves sell for about $35 more than manually activated directional valves. Valves are usually stock items and prices are quoted, but quantity may affect the price. There may also be discounts to distributors.

U.S. Consumption, Shipments, and Exports

Hydraulic presses

Data are not separately available on U.S. consumption of hydraulic presses of the types made by Denison. However, [industry sources] provided the Commission with estimates * * * of the annual U.S. sales (consumption) for such presses and competitive types of mechanical presses for 1967-71 and a projection of potential sales for 1972. These data (adjusted by the Commission for 1970-71) are summarized in the table below.

Hydraulic presses, Denison types: Estimated market, 1967-71, and projection for 1972

Year	Value
	Million dollars
1967	35.0
1968	38.0
1969	41.2
1970	35.0
1971	32.0
1972	40.8

Source: Estimate by Commission based on industry estimate and other data.

Data published by the U.S. Department of Commerce for presses used only in metalworking indicate a downward trend in shipments for the combined U.S. and export market in Denison type hydraulic presses in 1967-71. Shipments of the "C" frame type and open-rod type hydraulic presses (including some sizes not made by Denison but excluding those valued at less than $1,000) declined each year (except 1969) from a

value of $10.5 million in 1967 to $6.3 million in 1971, with the greatest annual decline being in 1970 (see table below).

Shipments of open-back inclinable and single-action mechanical presses--some of which apparently compete with Denison's hydraulic presses--were reported to have declined sharply in 1967-71 (except for a rise in 1969) from a value of $37.8 million in 1967 to $17.7 million in 1971, as indicated in the table below.

Certain hydraulic and mechanical presses for metalworking: U.S. shipments for U.S. market and export, 1967-71

(Value in millions of dollars)

Year	Hydraulic presses			Mechanical presses		
	Open-rod	"C" frame	Total	Open-back inclinable	Single action	Total
1967	3.4	7.1	10.5	1/ 34.0	3.8	37.8
1968	5.0	4.2	9.2	29.0	2.7	31.7
1969	3.9	5.6	9.5	34.7	3.4	38.1
1970	3.1	3.9	7.0	27.3	2.2	29.5
1971	3.5	2.8	6.3	16.2	1.5	17.7

1/ Estimate by the Commission.

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

It is evident from the published data and from discussions with industry representatives that 1971 was a poor year for the metalworking industry and for those who supplied it.

Exports of hydraulic presses of the types made by Denison, data for which are included with that for all other hydraulic presses as well as for pneumatic presses, are estimated to be small.

Industrial hydraulic valves

Total U.S. consumption in 1968-71 of industrial hydraulic valves has been estimated by industry sources to have declined in value from a high of $149 million in 1969 to $140 million in 1971; an increase to $147 million is projected for 1972 (see table below). Of the total marketed, probably 95 percent were of the types made at the Columbus plant of the Denison Division, Abex Corp.

Industrial hydraulic valves: Estimated consumption, 1968-71, and projection for 1972

Year	Value
	Million dollars
1967	130
1968	135
1969	149
1970	148
1971	140
1972	147

Source: 1968-72 estimate by industry; 1967 estimate by the Commission.

Imports provided a very small share of the total volume of industrial valves consumed (see section on Imports); therefore, data for shipments and consumption are almost synonymous. Exports are estimated to be small.

U.S. Imports

Data for imports of metal-forming hydraulic presses (as specified in the petition) are not collected separately but are included within a large basket category of metal-forming machine tools. Data for imports of nonmetal-forming hydraulic presses (not specified in the petition but constituting part of Denison's output) are included in a large basket category of machine tools other than metal-working. Imports of open-back inclinable mechanical presses have been reported separately since 1970. Data for imports of industrial hydraulic valves are collected only as parts of large basket categories of taps, cocks, and valves of all types. These data are shown in table 1.

For purposes of this investigation, import data specifically on hydraulic presses and industrial hydraulic valves were obtained from industry sources.

Hydraulic presses

Imports of hydraulic presses are not generally of the same types as those made by the Denison Division, Abex Corp.; they are reported by producers, including officials of Denison, and importers to be unique, made for specific, limited uses, and more expensive than Denison's. Some mechanical presses are imported for the compaction of metal powders, but these are also reported to be more expensive than U.S.-made hydraulic presses and are designed for purposes other than those for which the Denison presses are used.

Hydraulic presses have been imported from the United Kingdom since 1969 and from West Germany for many years through 1971; these countries are believed to be the only significant sources of imports.

* * *

U.S. sales of imported hydraulic presses in 1968-71 represented a very small part of total demand, whether one considers the total estimated market for the Denison types of hydraulic presses, or solely the metalworking market indicated by reported domestic shipments. * * *.

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Hydraulic valves

Most imported industrial hydraulic valves are apparently similar to Denison's product line; Denison, however, indicates no knowledge of loss of sales to imports.

As indicated in the table below, industrial hydraulic valves have been imported from West Germany since 1968 and from Japan since 1969. Sales (partly estimated) of such imports from both countries have increased each year, * * *.

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In addition to the imports of industrial hydraulic valves, there are also imports of parts of valves, * * *.

Abex Corp.

The Abex Corp. was incorporated in Delaware in 1902 as the American Brake Shoe Co. Its present name was adopted in 1966. On December 26, 1968, Abex Corp. became a wholly-owned subsidiary of Illinois Central Industries, Inc.

Illinois Central Industries, Inc. is a diversified holding company with subsidiaries operating more than 60 plants in the United States, Canada, Mexico, and Europe. The subsidiaries are primarily engaged in four major areas of business activity. Manufacturing subsidiaries consist of Abex, Chandeysson Electric, and Waukesha Foundry; the consumer products companies include Pepsi Cola and Perfect Plus Hosiery; the transportation section include Illinois Central Railroad Co. and Chicago, Illinois Western Railroad; and the real estate section includes Illinois Center Corp., Mid America Corp., H. F. Philipsborn & Co., Seay & Thomas, Inc., and Philipsborn Equities, Inc.

The Abex Corp. owns and operates 40 plants in the United States, seven in Canada, nine in Europe, and two in Mexico. In addition, the corporation leases one plant in the United States and one in Canada. The Abex Corp. manufactures components and machinery for the automotive, aerospace, railroad, mining, construction, and rubber industries. The corporation manufactures brake linings for cars, trucks, and buses; metallic brake discs for aircraft and friction discs for mobile industrial equipment; railroad brake shoes and bearings for railroad equipment; freight car wheels; flight control actuators and landing gears; molds used by rubber manufacturers; and hydraulic pumps, motors, valves, presses, and hydraulic systems.

The Columbus, Ohio, plant is one of several plants of the Denison Division of the Abex Corp. The Columbus plant is the only domestic plant of the Abex Corp. which manufactures hydraulic presses and industrial hydraulic valves. Power units are also produced at the Columbus plant. The Denison Division also manufactures significant quantities of valves in England and in West Germany; the firm does not manufacture hydraulic presses overseas. * * *.

Columbus, Ohio, plant

The Columbus plant (Denison Division, Abex Corp.), which was built about 30 years ago, * * * manufactures hydraulic presses, industrial hydraulic valves, and power units. 1/ Power units are an insignificant component of the total production of the Columbus facility.

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1/ Power units are basically composed of an oil reservoir, pump, motor, and relief valve.

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APPENDIX A
STATISTICAL TABLES

Table 1.--Hydraulic presses as metal-forming machine tools, open-back inclinable type mechanical presses, hydraulic presses as machine tools for other than metalworking, and industrial hydraulic valves combined with other control devices: U.S. imports for consumption, 1967-71, and January-June 1972

(Value in millions of dollars)

Period	Metal-forming machine tools other than punching and shearing machines and mechanical presses, open-back inclinable type (includes hydraulic presses) [item 674.3565]	Mechanical presses, open-back inclinable [item 674.3560]	Machine tools for other than metal-working [item 674.4260]	Taps, cocks, valves, and similar devices used to control the flow of liquids, gases, or solids; and parts thereof [items 680.2220 and 680.2700]
1967	1/ 24.7		2.8	14.7
1968	1/ 21.6		2.3	17.0
1969	1/ 23.3		3.3	21.1
1970	21.8	1.4	4.3	29.2
1971	15.0	1.0	3.5	34.4
1972 (January-June)	8.4	2.3	1.8	19.6

1/ Articles included under items 674.3560 and 674.3565 were included under item 674.3550 (metal-forming machine tools) until January 1, 1970 when the new classifications became effective.

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

Table 2.--Comparative average hourly earnings and total hourly compensation, 1965 and 1970, United States, United Kingdom, and Germany

(In U.S. dollars)

Country	Hourly compensation category	1965	1970
United States	Machinery, except electrical	$2.95	$4.00
Germany	Machine tools	1.14*	2.24**
United Kingdom	Mechanical engineering	1.00	1.70
	Total hourly compensation		
United States	Machinery, except electrical	3.56	4.95
Germany	Machine tools	1.82*	3.11**
United Kingdom	Mechanical engineering	1.13	1.95

* Male workers only.
** 1971.

Sources: (1) Great Britain: Monthly Digest of Statistics, Central Statistical Office, January 1966 and July 1972. (2) United States: U.S. Employment and Earnings, Bureau of Labor Statistics, January 1966 and January 1972. (3) Germany: Statistisches Jahrbuck fur die Bundesrepublic Deutschland, 1966. Statistisches Bundesamt. Percentages of additional compensation and 1971 figure for Germany - Bureau of Labor Statistics data.

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