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UNITED STATES TARIFF COMMISSION

HYDRAULIC TURBINES, HYDRAULIC FORGING AND EXTRUSION
PRESSES, AND SHIP-DRIVING PROPELLERS: PRODUCTION,
MAINTENANCE, OFFICE AND CLERICAL WORKERS OF THE
BALDWIN-LIMA-HAMILTON CORP., INDUSTRIAL EQUIPMENT
DIVISION PLANT, EDDYSTONE, PA.

Report to the President
on Investigation No. TEA-W-131
Under Section 301(c)(2) of the Trade Expansion Act of 1962



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

REPORT TO THE PRESIDENT

U.S. Tariff Commission,
April 17, 1972.

To the President:

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

On February 15, 1972, the United Steelworkers of America, AFL-CIO, filed a petition for a determination of eligibility to apply for adjustment assistance on behalf of the workers of the Baldwin-Lima-Hamilton Corp. plant, Industrial Equipment Division, in Eddystone, Pa. The Commission instituted the investigation (TEA-W-131) on March 1, 1972, to determine whether, as a result in major part of concessions granted under trade agreements, articles like or directly competitive with hydraulic turbines (of the types provided for in item 660.70 of the Tariff Schedules of the United States (TSUS)), hydraulic forging and extrusion presses (of the types provided for in item 674.35 of the TSUS), and ship-driving propellers (of the types provided for in item 657.35 of the TSUS) produced at the Eddystone plant are being imported into the United States in such increased quantities as to cause, or threaten to cause, the unemployment or underemployment of a significant number or proportion of the workers of such plant.

Public notice of the receipt of the petition and the institution of this investigation was given in the Federal Register (37 F.R. 4758) on March 4, 1972. 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 from the United Steelworkers of America, Local Unions Nos. 1278, 2180, 2443, and 2844; from Baldwin-Lima-Hamilton Corp.; from other domestic producers and importers of the articles covered by this investigation; from the U.S. Navy and the U.S. Coast Guard; from certain public and investor-owned utilities; and from the Commission's files.

Finding of the Commission

On the basis of its investigation, the Commission finds unani-
mously that articles like or directly competitive with hydraulic
turbines, hydraulic forging and extrusion presses, and ship-driving
propellers produced at the Eddystone, Pa., plant of the Industrial
Equipment Division, Baldwin-Lima-Hamilton Corp. are not, as a result
in major part of concessions granted under trade agreements, being
imported into the United States in such increased quantities as to
cause, or threaten to cause, the unemployment or underemployment of
a significant number or proportion of the workers at the plant.

Considerations Supporting the Commission's Finding 1/

On February 15, 1972, the United Steelworkers of America, AFL-CIO, filed a petition for a determination of eligibility to apply for adjustment assistance under section 301(a)(2) of the Trade Expansion Act of 1962 on behalf of the production, maintenance, office and clerical workers of the Eddystone, Pa., plant of the Baldwin-Lima-Hamilton Corp. (a subsidiary of Greyhound Corp.), which manufactures hydraulic turbines, hydraulic forging and extrusion presses, and fixed-pitch ship-driving propellers, the products under consideration. The Greyhound Corp. announced in mid-1971 that the aforementioned plant would be closed in April 1972. Since the time of the announcement, employment has been systematically reduced, and at the present only a few hundred workers remain.

Statutory requirements

The Tariff Commission has frequently stated that the Trade Expansion Act of 1962 establishes four criteria, each of which has to be met for the Commission to make an affirmative determination in a worker case. Those criteria are as follows:

- (1) An article like or directly competitive with an article produced by the workers' firm is being imported in increased quantity;
- (2) The increased imports are a result in major part of concessions granted under trade agreements;

1/ Commissioner Sutton concurs in the result.

- (3) The workers concerned are unemployed or underemployed, or are threatened with unemployment or underemployment; and
- (4) The increased imports resulting in major part from trade-agreement concessions are the major factor causing or threatening to cause the unemployment or underemployment.

In the instant investigation, we have concluded that the foregoing conditions have not been met. The reasons for our determination are set forth below.

The closing of the Eddystone, Pa., plant as part of an overall plan by the Greyhound Corp. management to sell or liquidate all of the manufacturing operations of its Baldwin-Lima-Hamilton subsidiary--with little consideration given to import competition--would appear to be the major factor causing, or threatening to cause, the unemployment or the underemployment at the Eddystone plant. Going beyond this consideration, we have examined information obtained relating to each of the products involved in this investigation in light of the aforementioned statutory criteria.

During the period 1967-71, hydraulic turbines accounted for over half of the value of shipments of the products considered herein, hydraulic forging and extrusion presses accounted for about one-third of such shipments, and fixed-pitch ship-driving propellers accounted for the remainder. Each of these products is discussed separately below.

Hydraulic turbines

Information obtained in the investigation indicates that, during the period 1967-71, Baldwin-Lima-Hamilton was the low domestic bidder on three hydraulic-turbine contracts which were eventually awarded to foreign suppliers of such turbines. In each instance Baldwin-Lima-Hamilton's bid was substantially higher than the foreign bid even if the foreign bid were adjusted to reflect fully the preconcession (1930) rate of duty and all applicable allowances pursuant to the Buy-American Act and the Armed Service Procurement Regulations.

Moreover, an examination of imports of hydraulic turbines during the past two decades shows little relationship between the volume of imports and reductions in the rate of duty. Therefore, we have concluded that, with respect to hydraulic turbines (which accounted for the bulk of products under consideration), the increased imports are not a result in major part of concessions granted under trade agreements.

Hydraulic forging presses

With respect to hydraulic forging presses we find that imports were nil during the period 1967-71, and, therefore, an article like or directly competitive with an article produced by the workers' firm is not being imported in increased quantities.

Hydraulic extrusion presses

Hydraulic extrusion presses imported during the period 1967-71 amounted to * * *. presses, all ordered during the 2-year period 1966-68--just prior to the economic slowdown in the capital goods industry. In our opinion both the cutback in orders by domestic customers for hydraulic extrusion presses and the reportedly better auxiliary equipment supplied by the foreign producers were the cause of Baldwin-Lima-Hamilton's declining sales of such presses and the unemployment or underemployment at the Eddystone plant.

Ship-driving propellers (fixed-pitch)

Information obtained in the investigation indicates that reduced shipbuilding in the United States during the years prior to those under consideration had diminished the size of the U.S. market for fixed-pitch propellers. Moreover, imports of such propellers during the period under consideration were negligible. Therefore, we conclude that any imports of ship-driving propellers (fixed-pitch) were not the major factor causing or threatening to cause the unemployment or underemployment at the Eddystone plant.

Conclusion

In view of the foregoing discussion concerning the various products under consideration, it is not possible to find that there are increased imports, in major part the result of concessions under trade

agreements, which have been the major factor causing or threatening to cause unemployment or underemployment of a significant number or proportion of the workers at the Eddystone, Pa., plant of the Baldwin-Lima-Hamilton Corp.

Information Obtained in The Investigation

Description and uses

Hydraulic turbines.--Hydraulic turbines are used primarily to drive electric generators. These turbines consist of a central rotating part called a runner, which is encased in a housing. The runner is revolved by the flow or pressure of water being directed onto its blade. The shaft of the runner is connected to the shaft of a generator, which is the unit that generates the electricity.

The type of turbine selected for a particular installation depends principally on the effective head under which it will operate. The head is the number of feet which the water drops before passing through the turbine. For heads up to 100 feet, a Kaplan turbine (i.e., an adjustable blade propeller) or a propeller turbine (i.e., fixed blade) is used. The Kaplan turbine is used when the head range is great (e.g., 30 to 80 feet); a fixed blade propeller operates over a narrow head range of about 15 feet (e.g., 35 to 50 feet). For heads from 100 feet to 1,000 feet, a Francis turbine is used. The fourth type, the impulse turbine, is used for heads from 1,000 feet upwards. The impulse turbine is driven by water ejected through a nozzle at extremely high velocities; the water hits buckets on the turbine, thus turning it. In the United States the Francis turbine is the most widely used, followed by the Kaplan turbine. Because there are very few natural sites in the United States where water drops more than 1,000 feet, the impulse turbine is rarely used.

Another hydraulic turbine which is becoming more important is the reversible pump/turbine (or pumped storage unit). This type of turbine may be operated as a conventional turbine, or, during hours of minimum power demand, the generator may be operated as a motor to drive the turbine in reverse as a pump. Thus the pump/turbine provides stored hydropower by pumping water from a reservoir or supply at one elevation to a storage reservoir at a higher elevation. Nearly all economically feasible sites in the United States, where a drop in water occurs naturally, have been exhausted. There are more sites available for pumped storage in the United States than all of the conventional sites already developed plus those that are potential. Many pumped-storage sites are available near areas where there is a large demand for electric power and where adequate storage reservoirs can be supplied at relatively low land costs with minimum requirements for additional dams and ancillary structures.

Regardless of type, hydraulic turbines are built to last 50 years or more. The units are specially designed and constructed for each installation and therefore are not adaptable to mass production techniques. Their size and type are carefully adapted to the requirements of specific power sites. The design and construction of large turbines often require 2 years or more. Hydraulic turbines and parts are generally large, bulky, and heavy; their manufacture requires oversized plants and mammoth machine tools and related production equipment. Large turbines are generally delivered to the power sites in segments or subassemblies as the construction of the hydropower

plant progresses. In addition to the basic hydraulic turbine units, each hydroelectric power plant includes much steel and concrete work and substantial additional equipment.

Hydraulic forging and extrusion presses.--Metalworking presses may be divided into two broad classifications, mechanical and hydraulic. Hydraulic presses differ fundamentally from mechanical presses in that hydraulic pressure, by means of one or more pistons and cylinders, is used to provide the linear slide motion in hydraulic presses, whereas the energy required to drive mechanical presses is usually developed by means of a motor-driven flywheel.

Since they are slow in operation, hydraulic presses are not suited for the general run of stamping work when production speed is the primary objective. But, because they provide infinite adjustment of stroke speed, length, and pressure within the limits of their capacity and are capable of exerting full pressure throughout the full length of the stroke, hydraulic presses are indispensable for extruding operations where an application of full pressure at controlled stroke speed over a long stroke is required. Because of their ability to supply tremendous pressure, hydraulic forging and extrusion presses are used to squeeze or push the metal workpiece into the desired shape or form.

The hydraulic forging press consists essentially of a hydraulic cylinder supported by steel columns, anchored to a single base casting of great weight and strength. The piston or ram of the cylinder points vertically downward and carries the upper forging die, which

is directly above a stationary die resting on the base casting. By admitting a liquid under high pressure to the cylinder at the top, the ram carrying the upper die is forced down upon the workpiece which rests upon the lower forging die. Small auxiliary cylinders lift the ram after each application of pressure. The pressure, which must be very high if the forging press is to be effective, is increased gradually and maintained until the metal yields; this type of press is used to squeeze heated ingots into shape for the production of a number of items, including turbine rotors and steel-mill rolls.

Hydraulic extrusion presses are used when the primary objective is to push the metal workpiece through the extrusion ring or die. The process may be compared to squeezing toothpaste from a tube. A billet of heated metal is placed in the extrusion press and forced by the pressure of a powerful hydraulic cylinder to flow through an opening in a die, emerging as a long ribbon of exactly the shape of the die opening. This process, used chiefly for brass and aluminum, can produce bars of virtually any desired shape.

Ship-driving propellers.--The ship-driving propellers considered in this investigation are propellers of the fixed-pitch type (item 657.35; "Articles of copper, not coated or plated with precious metal: Other"). ^{1/}

Industry sources report that the diameters of ship-driving propellers range from 6 feet to 30 feet and weigh from several tons to 50 tons. Propellers with diameters of less than 6 feet are regarded

^{1/} Variable-pitch propellers, which are not covered by this investigation, are dutiable under tariff item 678.50.

by the industry as "boat" propellers. Baldwin-Lima-Hamilton (BLH) produced only fixed-pitch, ship-driving propellers. It is noted that the market for fixed-pitch propellers is separate from the market for variable-pitch propellers inasmuch as the two types are not interchangeable. The materials used in manufacturing such propellers are manganese-bronze, nickel-aluminum-bronze, and chrome-stainless steel. Although stainless steel is not as expensive as the bronze alloys, it is not used as frequently because propellers of steel have a life expectancy of 10 to 15 years, whereas those of bronze have a life expectancy of 20 years or more. Fixed-pitch, ship-driving propellers have from four to seven blades, with six reportedly being the most common.

U.S. tariff treatment

Hydraulic turbines--Hydraulic turbines were classifiable as hydraulic reaction turbines and hydraulic impulse wheels, and parts under the provision of paragraph 372 of the Tariff Act of 1930 and were dutiable at the rate of 27.5 percent ad valorem. As a result of concessions granted by the United States in a bilateral trade agreement with Switzerland, the rate was reduced to 15 percent ad valorem, effective in 1936.

After the adoption of the Tariff Schedules of the United States (TSUS), on August 31, 1963, hydraulic turbines were provided for under item 660.70 at the rate of 15 percent ad valorem. The current rate--7.5 percent ad valorem--represents the final stage of the

five-stage concession granted in the Kennedy Round negotiations under the General Agreement on Tariffs and Trade (GATT); it became effective on January 1, 1972.

The various rates of duty applicable to hydraulic turbines under the Tariff Act of 1930, and under the TSUS, as modified by trade-agreement concessions are shown below.

Hydraulic turbines: 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-----	27.5% ad val.	Tariff Act of 1930 (par. 372).
Jan. 9, 1936-----	15% ad val.	Trade agreement with Switzerland.
Jan. 1, 1948-----	15% ad val. <u>1/</u>	GATT <u>2/</u> concession.
Aug. 31, 1963-----	15% ad val.	Adoption of TSUS <u>3/</u> (item 660.70).
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.

1/ Bound against increase.

2/ General Agreement on Tariffs and Trade.

3/ Tariff Schedules of the United States.

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 Tariff Schedules of the United States 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. During the period August 16 to December 20, 1971, the aggregate duty on imports of hydraulic turbines was 19 percent.

Hydraulic forging and extrusion presses.--Hydraulic forging and extrusion presses were classified for duty purposes under paragraph 372 of the original schedules 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 the result of a trade-agreement concession negotiated under the GATT at Geneva, Switzerland, the rate was reduced from 30 percent ad valorem to 15 percent ad valorem effective January 1, 1948.

After the adoption of the TSUS, on August 31, 1963, hydraulic forging and extrusion presses were provided for under item 674.35 at the rate of 15 percent ad valorem. This tariff item provides for "other metal-working machine tools." The current rate--7.5 percent ad valorem--represents the final stage of the five-stage concession granted in the Kennedy Round negotiations under the GATT; it became effective on January 1, 1972.

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

Hydraulic forging and extrusion 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 <u>1/</u> concession.
Aug. 31, 1963-----	15% ad val.	Adoption of TSUS <u>2/</u> (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.

1/ General Agreement on Tariffs and Trade.

2/ Tariff Schedules of the United States.

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 hydraulic forging and extrusion presses was 19 percent.

Ship-driving propellers.--Ship-driving propellers of the fixed-pitch type were classifiable at articles n.s.p.f., composed wholly or in chief value of iron, steel, copper, brass, nickel, pewter, zinc, aluminum, or other base metal (except lead and tin or tin plate), but not plated with platinum, gold or silver, or colored with gold lacquer, whether partly or wholly manufactured under the provisions of paragraph 397 of the Tariff Act of 1930 and were dutiable at

the rate of 45 percent ad valorem. In addition, the Internal Revenue Code provided for an import excise tax of 3 cents per pound on imported products in chief value of copper, effective June 21, 1932. Pursuant to a concession granted by the United States under the GATT, the rate and the excise tax were reduced by July 1, 1963, to 15 percent ad valorem and 1.275 cents per pound, respectively. With the adoption of the TSUS on August 31, 1963, the excise tax applicable to imports in chief value of copper was divorced from the Internal Revenue Code and incorporated in the TSUS as part of the rate provision. Under the new schedules, ship-driving propellers of the fixed-pitch type are classified under item 657.35, which provides for articles of alloys of copper (except nickel silver and copper-nickel), not coated or plated with precious metal. As a result of further concessions under the Kennedy Round, the rate applicable to imports under item 657.35 was reduced in five annual stages to its current level of 0.6 cent per pound plus 7.5 percent ad valorem. The changes in the duties applicable to ship-driving propellers (fixed pitch) are summarized below.

Ship-driving propellers (fixed pitch): U.S. rates of duty and effective date of rate changes, June 18, 1930 to Jan. 1, 1972

(Percent ad valorem; cents per pound)

Effective date	Rate under--		Authority
	Paragraph 397	Internal Revenue Code	
June 18, 1930-----	45%	-	Tariff Act of 1930
June 21, 1932-----	45%	1/ 3.000¢	Revenue Act of 1932
Jan. 1, 1948-----	22.5%	1/ 1.500¢	GATT 2/ concession.
June 30, 1956-----	21%	1/ 1.425¢	Do.
June 30, 1957-----	20%	1/ 1.350¢	Do.
June 30, 1958-----	19%	1.275¢	Do.
July 1, 1962-----	17%	1.275¢	Do.
July 1, 1963-----	15%	1.275¢	Do.
		Rate under TSUS 3/ item 657.35	
Aug. 31, 1963-----	1.275¢ + 15%		Adoption of TSUS
Jan. 1, 1968-----	1.000¢ + 13.5%		GATT concession.
Jan. 1, 1969-----	1.000¢ + 12%		Do.
Jan. 1, 1970-----	.800¢ + 10.5%		Do.
Jan. 1, 1971-----	.700¢ + 9%		Do.
Jan. 1, 1972-----	.600¢ + 7.5%		Do.

1/ Tax applicable under the Internal Revenue Code was suspended by various public laws during the periods Apr. 30, 1947, to June 30, 1950 and Apr. 1, 1951, to June 30, 1958.

2/ General Agreement on Tariffs and Trade.

3/ Tariff Schedules of the United States.

The ad valorem equivalent of the compound rate effective in 1932 (import duty plus excise tax) based on imports in 1971 is 46.4 percent; the equivalent of the current (1972) rate based on imports in 1971 is 7.8 percent. It is evident that the specific rate does not constitute a significant part of the total applicable duty.

The import surcharge imposed by Presidential Proclamation 4074 in substance increased the ad valorem part of the rate applicable to item 657.35 from 9 percent to 19 percent during the period August 16 to December 20, 1971.

Imports of repair parts (including ship-driving propellers) for use on vessels of foreign registry and engaged in international trade are not subject to duty (19 U.S.C. 1309(a)(2)). Further, drawback (99 percent of duties paid) may be claimed on parts of vessels (including ship-driving propellers) imported for use in the construction of vessels built for foreign account and ownership or for the government of any foreign country (19 U.S.C. 1313(g)). Also, imports, if any, of propellers used for the repair or construction of U.S. ships (Navy, Coast Guard, and so forth) may be exempt from duty (the Tariff Schedules of the United States (19 U.S.C. 1202), item 832.00). In view of the above, the duty applicable to imports of ship-driving propellers would not necessarily constitute a deterrent to their importation.

U.S. producers

Hydraulic turbines.--During the period 1967-71, five U.S. firms produced hydraulic turbines: Allis-Chalmers Manufacturing Co., York, Pa.; Baldwin-Lima-Hamilton Corp., Eddystone, Pa.; Newport News Shipbuilding and Dry Dock Co., Newport News, Va.; James Leffel & Co., Springfield, Ohio; and Bingham-Willamette Co., Portland, Oreg.

* * * * *

Hydraulic forging and extrusion presses.--During the period 1967-71, hydraulic forging and extrusion presses were manufactured by six U.S. companies, as shown in the table below.

Hydraulic forging and extrusion presses: Major U.S. manufacturers, 1967-71

Product, manufacturer, and (parent company)	Principal offices
Forging presses:	
Baldwin-Lima-Hamilton Corp. (Greyhound Corp.)-----	Eddystone, Pa.
Erie Foundry-----	Erie, Pa.
Extrusion presses:	
Baldwin-Lima-Hamilton Corp. (Greyhound Corp.)-----	Eddystone, Pa.
Farrel Co. (USM Corp.)-----	Rochester, N.Y.
Lombard Corp-----	Youngstown, Ohio
Sutton Engineering Co-----	Pittsburgh, Pa.
Youngstown Foundry & Machine Co. (Wean United Co.) <u>1/</u> -----	Youngstown, Ohio

1/ * * *.

A number of U.S. firms other than those listed above have the capability (facilities plus technology) to manufacture such presses. These firms, however, reported that they did not manufacture any presses during the 1967-71 period.

U.S. producers of hydraulic forging and extrusion presses are mainly diversified firms for which such press production is only one of several manufacturing activities. The other manufacturing activities include the production of other types of presses (mechanical), and metal-cutting machine tools (boring machines, milling machines, and so forth).

Ship-driving propellers.--During the period 1967-71, fixed-pitch propellers were manufactured by eight U.S. firms. The names and locations of the principal offices of the firms are shown below.

Ship-driving propellers: Major U.S. manufacturers, 1967-71

Company	Principal offices
Avondale Shipyards, Inc-----	New Orleans, La.
Baldwin-Lima-Hamilton Corp. <u>1/</u> -----	Eddystone, Pa.
Bethlehem Steel Corp. <u>2/</u> -----	Bethlehem, Pa.
Columbian-Bronze Corp-----	Freeport, N.Y.
Coolidge Propeller Co-----	Seattle, Wash.
Doran-Alabama Propeller Co-----	Mobile, Ala.
Lipps Inc., Propellers-----	Pascagoula, Miss.
Michigan Wheel Corp-----	Grand Rapids, Mich.

1/ BLH closed its propeller and foundry shop in November 1971.

2/ Bethlehem Steel closed its propeller and foundry shop in May 1971.

* * * * *

As indicated above, Bethlehem Steel and BLH terminated their fixed-pitch propeller operations in 1971. Officials of the two companies, as well as other industry officials, indicated that, in their view, imports of fixed-pitch propellers were negligible and that the decline in U.S. shipbuilding was the principal factor in the decline in sales of such propellers. * * *

U.S. consumption and trade

Hydraulic turbines.--The discussion below on U.S. consumption and trade in hydraulic turbines is based on orders placed for such equipment. Orders for hydraulic turbines, on the average, allow 2 years for completion of the installation.

The following table shows the dollar value of orders for apparent U.S. consumption and the ratio of orders for imports to total orders for consumption..

Hydraulic turbines: Orders received by U.S. producers, placed for imports, orders placed for exports, and total orders placed for domestic consumption (based on orders), 1967-71

* * * * *

Data on imports of complete hydraulic turbine units were not reported separately in official statistics. The annual value of imports of water wheels, water turbines, other water engines, and parts of a type classifiable under TSUS item 660.70 (hydraulic turbines account for virtually all the trade in this item) decreased from \$4.6 million in 1967 to \$2.7 million in 1969, and then increased substantially to \$11.9 million in 1971 (table 1). Parts account for the great bulk of the imports because (1) large hydraulic turbines are almost invariably shipped as parts, with shipments spread over an extended period of time so that shipments of most units may not be completed in any given calendar year, and (2) certain U.S. turbine producers have found it advantageous to purchase components from foreign sources to lower their overall costs. Japan was the principal supplier of hydraulic turbines. Additional foreign sources were Canada, West Germany, Sweden, and Switzerland.

Hydraulic forging and extrusion presses.---* * *. There were no imports or exports during the 1967-71 period; U.S. consumption was supplied wholly by the domestic producers.

* * *. The decline in U.S. consumption of hydraulic extrusion presses after 1969 was attributable in large part to the depressed economy in 1969-71, particularly the sharp downturn in machine-tool orders during that period.

Annual shipments of U.S.-made hydraulic extrusion presses followed the same general trend as that reported for consumption.

* * *. Shipments by type of hydraulic extrusion press also followed the same general trend as that in consumption, except for the copper and brass types, for which imports were predominate * * *.

* * * * *

Ship-driving propellers.--Data on U.S. production and imports are not available, but estimates based on interviews with the trade and information supplied by the Department of the Navy, the U.S. Coast Guard, and certain domestic manufacturers and importers indicate that, during the period 1967-71, U.S. shipments of fixed-pitch propellers ranged from an estimated 75 to 100 per year. Imports of such propellers during the 1967-71 period were negligible, estimated at not more than four or five propellers in any one year. Exports during that period are believed to be nil. Therefore, U.S. consumption was supplied almost entirely by U.S. production. Reduced shipbuilding in the United States during years prior to those under consideration had diminished the size of the U.S. market for fixed-pitch propellers.

Data relating to Baldwin-Lima-Hamilton Corp.

Corporate history.--Baldwin-Lima-Hamilton Corp. is a subsidiary of Armour and Co., which, in turn, is a subsidiary of Greyhound Corp. BLH was originally incorporated in Pennsylvania on June 7, 1911, under the name of Baldwin Locomotive Works, a successor to a business established in 1831. The corporate name changed to Baldwin-Lima-Hamilton Corp. on November 30, 1950, after Baldwin Locomotive Works acquired the Lima-Hamilton Corp.

On July 2, 1965, BLH was acquired by Armour and became a wholly owned subsidiary of that company. On December 18, 1970, Armour stockholders approved the acquisition of Armour by Greyhound.

Shortly after Greyhound acquired Armour, the Greyhound management decided to dispose of all of the assets of BLH, by sale, where possible, or by liquidation where sale was not possible. * * *.

BLH comprised four divisions and three subsidiaries. The Industrial Equipment Division consisted of an operational plant at Eddystone, Pa. (the plant involved in this investigation). Products produced at the Eddystone plant included large equipment, such as hydraulic turbines, hydraulic presses, governors and valves, ship propellers, pumps, heat exchangers, and desalination systems. These products were not produced at any other BLH plant. The Standard Steel Division (Burnham, Pa.), * * *, manufactured weldless rings, flanges, and steel specialties. The Austin-Western Division (Aurora, Ill.), * * *, manufactured construction and material-handling equipment, including hydraulic cranes, road graders,

compaction equipment, and street sweepers. The Lima Division (Lima, Ohio), * * *, manufactured power shovels, cranes, front-end loaders, rock-crushing equipment, roadpackers, and asphalt plants.

Baldwin-Lima-Hamilton Electronics, Inc., a subsidiary (Waltham, Mass.), * * *, manufactured equipment for electronic measurement of weight, pressure, strain, and torque. The other two subsidiaries, Allen-Sherman Hoff Co., Inc., (Wynnewood, Pa.) and Green Fuel Economizer Co., Inc. (Beacon, N.Y.), * * *, manufactured industrial fans, dust collectors, and ash-handling equipment.

Plant and equipment at Eddystone.--All operations of the Industrial Equipment Division of BLH are located at the Eddystone plant; all manufacturing operations there will cease as of April 30, 1972.

* * * * *

STATISTICAL APPENDIX

Table 1.--Water wheels, water turbines, other water engines, and parts: 1/ U.S. imports for consumption, by principal sources, 1967-71

(In thousands of dollars)

Source	1967	1968	1969	1970	1971
Japan <u>2/</u> -----	3,314	2,520	1,637	3,744	10,304
Canada-----	91	33	352	1,297	1,154
Sweden-----	719	18	-	-	283
Switzerland----	30	9	188	445	34
West Germany---	11	1,146	495	43	13
All other-----	459	113	33	65	135
Total-----	4,624	3,839	2,705	5,594	11,923

1/ Hydraulic turbines account for virtually all the trade.

2/ Imports consisted mainly of parts.

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



