DIGITAL READOUT SYSTEMS AND SUBASSEMBLIES THEREOF FROM JAPAN

Determination of the Commission in Investigation No. 731-TA-390 (Preliminary) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigation

USITC PUBLICATION 2081

MAY 1988

United States International Trade Commission / Washington, DC 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Susan Liebeler, Chairman
Anne E. Brunsdale, Vice Chairman
Alfred E. Eckes
Seeley G. Lodwick
David B. Rohr
Ronald A. Cass

Staff assigned:

George Deyman, Investigator
Ruben Moller, Industry Analyst
Catherine Beyer, Economist
Marshall Wade, Accountant
Paul Bardos, Attorney
Michael Buchenhorner, Attorney

Vera Libeau, Supervisory Investigator

Address all communications to
Kenneth R. Mason, Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

C O N T E N T S

CONTENTS

CONTENTS

Tables

CONTENTS

Tables--Continued

Note.--Information that would reveal the confidential operations of individual concerns may not be published and, therefore, has been deleted from this report. Such deletions are indicated by asterisks.

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC

Investigation No. 731-TA-390 (Preliminary)

DIGITAL READOUT SYSTEMS AND SUBASSEMBLIES THEREOF FROM JAPAN

Determination

On the basis of the record 1/ developed in the subject investigation, the Commission 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 Japan of digital readout systems and subassemblies thereof, 3/ provided for in item 710.80 of the Tariff Schedules of the United States, 4/ that are alleged to be sold in the United States at less than fair value (LTFV).

Background

On March 28, 1988, a petition was filed with the Commission and the Department of Commerce by Anilam Electronics Corp., Miami, FL, alleging that an industry in the United States is materially injured and threatened with

---

1/ The record is defined in sec. 207.2(i) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(i)).
2/ Commissioners Eckes, Lodwick, and Rohr determine that an industry in the United States is not materially injured or threatened with material injury, and the establishment of an industry in the United States is not materially retarded, by reason of imports from Japan of digital readout systems and subassemblies thereof, provided for in item 710.80 of the Tariff Schedules of the United States, that are alleged to be sold in the United States at less than fair value.
3/ Digital readout (DRO) systems subject to this investigation provide linear or rotational displacement information for high precision industrial equipment such as metalworking machine tools. The scope of the investigation covers DRO systems, whether assembled or unassembled. An unassembled DRO system would include a console and a transducer (glass scale, magnetic, and rotary encoder but not laser) destined for use in a DRO system and imported into the United States for assembly and sale as a DRO system. The scope of investigation also covers subassemblies and parts thereof. Subassemblies and parts thereof include consoles and parts of consoles destined for use in DRO systems.
4/ DRO systems and subassemblies thereof are currently also provided for in subheading 9031.80.00 of the Harmonized Tariff Schedule of the United States.

material injury by reason of LTFV imports of digital readout systems and subassemblies thereof from Japan. Accordingly, effective March 28, 1988, the Commission instituted preliminary antidumping investigation No. 731-TA-390 (Preliminary).

Notice of the institution of the Commission's investigation 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 April 4, 1988 (53 F.R. 10953). The conference was held in Washington, DC, on April 20, 1988, and all persons who requested the opportunity were permitted to appear in person or by counsel.

VIEWS OF CHAIRMAN SUSAN LIEBELER, VICE CHAIRMAN ANNE E. BRUNSDALE, AND COMMISSIONER RONALD A. CASS

Digital Readout Systems and Subassemblies Thereof from Japan
Inv. No. 731-TA-390 (Preliminary)

May 12, 1988

We determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of digital readout systems and subassemblies thereof from Japan that allegedly have been sold at less than fair value (LTFV). This determination reflects the lower standard used by the Commission, and approved by the Courts, in preliminary investigations.1/ Under this standard, the Commission has made an affirmative preliminary determination unless persuaded both that the record gathered in the preliminary investigation contains clear and convincing evidence that material injury to the domestic industry has not been caused or threatened by LTFV imports and that the further evidence that would be gathered in a final investigation would not be likely to support a contrary determination. We determine that, on the facts of this case, the standard of reasonable indication of material injury has been satisfied.

I. Like Product and Domestic Industry

The Commission must assess the effects of LTFV imports on the industry in the United States defined in the Tariff Act of 1979 as

---

1/ American Lamb Co. v. United States, 785 F.2d 994 (Fed. Cir. 1986).

comprised of "the domestic producers as a whole of a like product, or those producers whose collective output of the like product constitutes a major portion of the total domestic production of that product."2/ The term "like product" is in turn defined 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."3/

These definitions, while not terribly instructive, were intended to codify the Commission's general approach to circumscribing the bounds of an investigation.4/ The Commission's general approach has been to identify the products most plainly affected by the investigation and then to define the relevant domestic industry as the producers of those products. The Commission begins with the definition of the imports subject to investigation5/ and then examines the domestically produced products that arguably are "like" the imports. In making this "like product" determination, the Commission traditionally considers five factors: (1) physical characteristics and uses, (2) interchangeability, (3) channels of distribution, (4) customer perceptions of the articles, and (5) common manufacturing equipment, facilities, and production employees. In addition, although it has not explicitly incorporated it into the like product test, the Commission has frequently

---

2/ 19 U.S.C. 1677(4).
3/ 19 U.S.C. 1677(10).
4/ H. Rep. No. 4537, 96th Cong., 1st Sess. 83 (1979).
5/ The scope of the imports subject to the investigation is determined by the Department of Commerce. 19 U.S.C. 1673a.

considered the similarity (or dissimilarity) of prices for imports and potential like domestic products.6/

It has been said that the like-product requirement may not be "interpreted in such a narrow fashion as to permit minor differences in physical characteristics and uses to lead to the conclusion that the products are not like each other." The purpose of the Commission's inquiry is to identify the producers whose goods are most clearly competitive with, and therefore most likely to be adversely affected by, dumped imports. The Commission's like product determination must focus on distinctions between products that have economic consequences, and must be rooted in attention to the nature of the markets for closely competing imported and domestic products.7/

The inquiry, framed in terms of the five factors traditionally identified by the Commission, seeks to evaluate overlapping markets in which different products compete. The Commission separates the subject imports and competing domestic products into different categories of "like products" when the markets in which they compete differ significantly. Nonetheless, because the Commission is not always able to define product classes in ways that are fully congruent with actual markets, the Commission has focused on the

---

6/ See, e.g., Stainless Steel Pipe and Tube from Sweden, Inv. No. 731-TA-354 (Final), USITC Pub. 2033 at 5 and n. 11 (November 1987); Certain Seamless Steel Pipe and Tubes from Japan, Inv. No. 731-TA-87 (Final), USITC Pub. 1347 at 6 (February 1983); Certain Bimetallic Cylinders from Japan, Inv. No. 731-TA-383 (Preliminary), USITC Pub. 2017 at 7 (March 1987).

7/ Id; See also Certain All-Terrain Vehicles from Japan, Inv. No. 731-TA-388 (Preliminary), USITC Pub. 2071 (March 1988) (Additional Views of Chairman Liebeler and Vice Chairman Brunsdale).

presence of clear dividing lines among products;8/ and in the absence of such clear lines, the Commission generally resists drawing distinctions among various products.

In this investigation, the imported product subject to investigation is digital readout systems (DROs) and subassemblies thereof from Japan. A DRO is a device that measures and displays data on linear or rotational displacement, in high precision industrial equipment, primarily machine tools such as milling machines, lathes, and boring mills. Each DRO consists of one transducer for each axis of linear or rotational displacement to be measured and an electronic console that displays the information gathered by the transducers. The transducer is connected to a moving part of the subject machine tool. When the part moves, the transducer produces a signal proportional to the length or rotation being measured. That signal is fed into the electronic console which decodes it and displays a corresponding readout. These systems provide a means of accurately measuring displacement and rotational quantities in a manner that is easier to read than non-digital (analog) gauges.

The parties in this investigation have proposed various like-product definitions. Petitioner urges the Commission to find one like product, consisting of all DROs and subassemblies thereof, including consoles and transducers.9/ Respondent Futaba argues for

---

8/ E.g., Operators for Jalousie and Awning Windows from El Salvador, Invs. Nos. 701-TA-272 and 731-TA-319 (Final), USITC Pub. 1934 (January 1987) at 4, n. 4.
9/ Petitioners would exclude laser DRO's. See, infra.

two like products: "measuring devices" (which include transducers), and "control devices" (which include consoles and computerized numerical controls (CNCs)). Respondents Mitutoyo, Sony, and Sokki argue for four like products: glass-scale transducers, magnetic transducers, consoles for use with glass-scale transducers, and consoles for use with magnetic transducers.

For the reasons given below, we conclude for purposes of this preliminary investigation that there are three like products -- DROs, transducers used in DRO systems, and consoles used in DRO systems -- and, consequently, three domestic industries consisting of the domestic producers of those products. In doing so we have concluded that the immediate effects of dumped imports can be thoroughly assessed only if the effects are examined from the perspective of the markets in which the finished products and their principal components are traded. We emphasize that the like-product issues posed by this investigation are both difficult and unusual, and they should be carefully reconsidered in the Commission's final investigation.10/ At bottom we are convinced for purposes of this investigation that these three, overlapping, industries best describe, within the intent of the statutory framework, the domestic producers most likely to be adversely affected by dumped imports.

10/ For example, there appear to be strong arguments in favor of finding either one domestic industry defined with reference to one like product and its principal component parts (the producers of DROs and their principal component parts, transducers and consoles); or two domestic industries (the producers of transducers on the one hand, and the producers of consoles, on the other.)

The argument in favor of a like product comprised of DROs and a domestic industry comprised of producers of "finished" DROs is most forcefully advanced by Petitioner. Petitioner reasons that both domestic and foreign firms sell consoles and transducers primarily as systems, not separately as distinct products. Further, Petitioner maintains that the console and transducers used in a given DRO are compatible only with each other and not with other consoles and transducers, without the intervention of a technician unavailable to most end users.11/ As we understand it, Petitioner is arguing that imported DROs compete head-to-head with domestically produced DROs; and that the principal DRO components compete head-to-head with each other only to the extent that they are essential components of finished DRO systems that compete head-to-head with each other.

There is substantial evidence in support of Petitioner's argument. It is readily apparent that the domestic product most similar to imported DROs, and hence most likely to be affected by LTFV imports, is finished domestic DROs. Indeed the principal component parts at issue in this investigation, consoles and transducers, together perform the essential functions of the DRO system. The transducer measures the amount of displacement and the console displays it. A DRO is "produced" when one or more transducers are connected by a cable to a console. No processing of either component is required in order to join these components, and the cost of this "finishing" operation appears to be minimal. So

---

11/ Transcript of the conference (Tr.) at 112-113.

far as we can tell, no significant value is added to either component by virtue of any change to the components at this stage; the value of the final product, the DRO, is essentially the sum of the values of the two components, plus whatever small value is added simply because the two components were combined.

Nonetheless, although a finished DRO is simply the combination of a console and one or more transducers, we are unable to conclude, as Respondents have argued, that a DRO does not exist independent of its separate parts. Both domestic producers and importers sell DROs as assembled systems. Consoles designed for use in DROs are almost always used in DROs, and most transducers designed for use in DROs are also used in finished systems. The ultimate customers for these products cannot substitute either a transducer or a console for a DRO system -- a DRO system has to be substituted for a DRO system. Respondents' argument that there is no such thing as a DRO (because it is simply a combination of its component parts) is something of a semantic exaggeration.

From an end user's perspective, a domestically produced DRO system is the product that is most interchangeable with an imported DRO and that most fully performs the functions for which an imported DRO system otherwise would be purchased. When the ultimate customer considers the price advantage, if any, held by a LTFV DRO system, the customer is going to do so in comparison to the price of a comparable alternative system. These facts lead us to conclude that domestically produced DROs are "like" imported DROs within the meaning of the controlling statutes.

While we have concluded that domestically produced finished DRO systems are "like" the imports under investigation, we do not do so to the exclusion of finding that the transducers used in DRO systems and the consoles used in DRO systems are also "like" imported DRO transducers and consoles. We conclude that transducers and consoles are also separate "like" products in this investigation because several facts suggest that it may be necessary to do so in order to assess accurately the impact of LTFV imports on the domestic producers that actually "produce" DRO systems.

First, as we noted above, a DRO system is comprised of little more than a console and one or more transducers. It appears that many if not all Respondents import transducers and consoles separately, not as assembled systems. Imports of the principal DRO components, consoles and transducers, as separate units appear to be expressly within the scope of this investigation.12/

Moreover, while they are ultimately destined for incorporation into DRO systems, transducers and consoles appear to be purchased and stocked by at least some distributors as separate items.13/ Apparently it is possible for a distributor to combine consoles and transducers manufactured by different producers, although there are practical disincentives to doing so. Finally, transducers and consoles are not combined into DRO systems in fixed proportions (as noted, there can be several transducers together with a single

---

12/ Letter of clarification of scope of investigation dated May 5, 1988, from Department of Commerce.
13/ Report at A-16-17.

console), and transducers are sold for uses other than DROs.14/ These facts suggest that, from the perspective of some purchasers of the imports under investigation, particularly the purchasers of imported components, the domestic products most competitive with, and hence most "like" the imports, are the corresponding domestically produced components.

It appears that consoles and transducers may best be analyzed as separate "like" products from the standpoint of domestic producers as well. Consoles and transducers differ in their essential production characteristics such as technology (electronic versus electric or magnetic), subcomponents (circuit board versus scale and reading head), and production lines.15/ Indeed, during the course of this investigation staff found that aggregate DRO production data could be best derived by looking separately at data for console and transducer production. These facts suggest that from the perspective of domestic DRO producers, the best way to assess the immediate impact of dumped imports is by considering their impact on the separate production of each of the principal DRO components.

Various arguments have been raised concerning possible distinctions among types of consoles. It appears that consoles differ principally only in the complexity of their digital manipulation capabilities. Consoles share with each other the principal task of decoding and displaying transducer data.16/ From

---

14/ Report at A-2 and A-3.
15/ Postconference brief of respondent Mitutoyo at 8.
16/ Report at A-3-4.

the standpoint of both producers and consumers of DROs, the alternative to a particular console, no matter how fancy or simple, is another console. For this reason we decline to find at this time that different types of consoles are different like products, although this issue should be revisited in the final investigation.

Respondent Futaba argues that the console like-product category should include computerized numerical controls (CNCs).17/ Futaba urges that transducers used in DROs can also be used in CNCs, and that CNCs are used for the same general purpose as DROs: precision measurement of displacement. As reflected in their higher price -- generally ten times that of a DRO -- CNCs are much more sophisticated devices that measure the performance of machine tools and also affect changes in the tools' performance to increase their efficiency.18/ A CNC must be programmed before it can operate, necessitating the services of a programmer.19/ It appears that CNC-type consoles and DRO-type consoles are marketed through different marketing channels and are used to control different machine tools. In short, it does not appear that CNCs are within the group of devices that most compete with, and hence are most like, the imports subject to this investigation.

Petitioner argues that the like product should include vision readout systems (VROs), which one domestic producer, Acu-Rite, began marketing in mid-1987. A VRO is similar to a DRO except that the

---

17/ Report at A-4.
18/ The CNC thus reduces the need for a machine attendant who would otherwise make adjustments manually.
19/ Tr. at 114.

console has a cathode ray tube display instead of the light-emitting diode display common to DROs. Petitioner Anilam states that VROs compete with DROs, but another producer disagrees.20/ No persuasive evidence has been offered that the difference between DROs and VROs is of economic significance. We therefore determine that VRO consoles are within the consoles like product.

Respondent Sokki argues that magnetic-type consoles should not be included in the same like product with consoles linked to other transducers since the consoles cannot be interchanged. Respondent Sony states, however, that a magnetic-type console can be used with a non-magnetic transducer if an adapter is used.21/ At this time we do not distinguish magnetic-type consoles and other consoles as separate like products because the evidence suggests that the two types of consoles share the same general electronic characteristics and the same general uses in displaying machine tool measurements. However, this issue should be revisited in the final investigation. The parties in any such investigation are urged to explore the degree to which magnetic and non-magnetic devices in fact compete in the same market and whether they are a single like product.

Respondents Sony, Sokki, and Mitutoyo argue for distinctions among types of transducers. Four main types of transducers are used in DRO systems: (1) glass scale, (2) rack and pinion, (3) rotary encoder, and (4) magnetic. Glass-scale transducers are the most

---

20/ Report at A-11.

common. They employ a strip of glass imprinted with a vacuum-deposited, chrome grating fixed in a housing, and are fitted with a reading head incorporating light sources and photo detectors.21/ No party argues that domestic and imported glass-scale transducers are not like each other.

Rotary encoders and rack-and-pinion transducers, which incorporate rotary encoders, differ from glass-scale transducers in their method of manufacture, but share with glass-scale transducers the same uses, optical or mechanical means of functioning, and relatively low cost. There is no substantial evidence that would suggest at this time that rotary encoders, rack-and-pinion transducers, and glass-scale transducers do not all comprise a single like product. We are, however, prepared to consider this question anew in the final investigation.

Respondents Mitutoyo, Sony, and Sokki argue that magnetic transducers are not like glass-scale transducers. They argue that magnetic transducers employ different technology (magnetic fields rather than optical), are used in different applications where higher resolution and resistance to distortion by impurities in the environment are required, and are much higher priced. Petitioner argues that glass-scale and magnetic transducers compete in large machine tool applications, and notes that the U.S. Army has on occasion accepted the equivalency of glass-scale and magnetic transducers.22/

21/ Postconference Brief of Respondent Sokki at 8; Tr. at 84.
22/ Tr. at 115.

It appears that the evidence presently in the record on this issue is mixed.23/ While the different types of transducers discussed above differ in physical characteristics, they are all used for the same essential purpose and for that reason appear to compete directly with each other. There is insufficient evidence to conclude at this time that their uses are so different that customers and producers would perceive them as materially different products. We, therefore, conclude for purposes of this preliminary investigation that the various types of transducers are all part of the same like product.

Based on the foregoing, we determine that there are three like products -- DROs, transducers used in DROs, and consoles used in DROs -- and three domestic industries, consisting of the domestic producers of those products. As we have noted, we will reexamine the various like-product issues raised in this preliminary investigation should the case return for a final investigation.24/

23/ One domestic company, Farrand Systems (Farrand), produces a magnetic-type transducer under the trademark Inductosyn. This transducer employs an excited rather than a permanent magnetic field. The Inductosyn transducer differs from that produced by Respondent Sony in that each is the subject of a different patent. Sony states that its transducers may be like Farrand's, noting similarities in resolution, accuracy, reliability, available lengths, analog capability, and customer perception. Farrand states, however, that its products do not compete with imported magnetic transducers. This view is also adopted by Respondent Sokki, which states that its magnetic transducers differ from Inductosyn products in principles, materials, and applications. Farrand's and Sony's transducers are higher in value than glass-scale transducers, but both are used in applications requiring resistance to impurities.

24/ A relatively uncommon type of transducer is the laser transducer. Petitioner and Canon, which produces laser transducers in Japan, state that such transducers should not be included in the scope of the investigation and are not like other transducers in

(continued...)

Each of the Respondents, with the exception of Canon, has argued that Petitioner lacks standing to bring the petition in this investigation. Certain Respondents have argued that Petitioner lacks standing because it supposedly does not produce certain products -- e.g., transducers or certain specific types of transducers -- and, in their view, the production of these products should be deemed to constitute the domestic industry.25/ Since we have defined the domestic industries to consist of the producers of DROs and their two principal components, and since Petitioner manufactures and sells certain items within those definitions, these arguments cannot be sustained even if properly raised to the Commission. Other Respondents have asserted that Petitioner lacks standing because it and the other domestic producers that have formally supported its petition allegedly do not account for a majority or a "major proportion" of the domestic industry.26/ On the basis of the limited data on this subject that has thus far been presented to the Commission, we cannot say, for the purposes of this preliminary investigation, that Petitioner

---

24/(...continued)
that laser transducers are built using entirely different technology, for a limited customer base needing a resolution 100 times as great as other transducers. The Department of Commerce has excluded laser transducers from the scope of their investigation. Accordingly, we determine that laser transducers are not included in the like product in this investigation.

25/ See Postconference brief of Respondent Sony at 23-26; Postconference brief of Respondent Futaba at 3-5; Postconference brief of Respondent Mitutoyo at 5-13; Postconference brief of Respondent Sokki at 3-6.

26/ See Postconference brief of Respondent Mitituyo at 1-4; Postconference brief of Respondent Sokki at 3-6.

lacks standing for this reason. Accordingly, even if this argument is properly raised to the Commission, it must be rejected at this stage of the investigation.

II. Reasonable Indication of Material Injury by Reason of LTFV Imports

Decisional Framework

Having defined the relevant domestic industries, the Commission must then determine in a preliminary investigation whether there is a reasonable indication that those industries are experiencing or are threatened with material injury by reason of allegedly LTFV imports.27/ Although the evidentiary standard in preliminary investigations differs from that in final investigations, the analysis of injury by reason of LTFV imports is the same.

Title VII of the Tariff Act directs the Commission to consider sixteen enumerated factors in determining whether a domestic industry is materially injured by reason of imports at less than fair value.28/ The factors specified in the statute indicate Congress' intent that the Commission assess the effect of LTFV imports on the economic vitality of the domestic industry and also suggest various factual inquiries that should facilitate that assessment.

The statute does not specify the exact manner in which these factors are to be organized into a coherent analysis of the

---

27/ Material retardation is not an issue here.
28/ 19 U.S.C. 1677(7)(C)(ii),(iii).

connection between LTFV imports and condition of the domestic industry. Rather, this task is left to the Commission. It may well be that a single analytical structure may not be appropriate to all cases -- indeed, the analytical structure used in these views is chosen because it best fits the facts at issue here. In general the factors given by the statute and the order in which they are listed in the statute29/ suggest that our inquiry must focus on three areas when we consider the causation of material injury.30/

29/ Title VII first describes the determination that the Department of Commerce must make regarding the existence of the unfair trade practice. Then Title VII describes the considerations that should guide the Commission's determination respecting the existence of material injury from unfairly traded imports, directing the Commission to "consider, among other factors --

(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." 19 U.S.C. 1677(B).

30/ The aggregation of the sixteen statutory factors into three areas does not suggest that only three of the factors have real importance. The three areas comprehend all of the statutory factors. Aggregation of the factors into three groups is not intended to suggest that some factors are especially important and others unimportant. The separation of the factors into groups instead is simply a means of organizing the factors to facilitate analysis. At the same time, it must be confessed that the Commission has not always been able within the statutory time limits on its investigations to gather information on all of the statutorily listed factors and, therefore, cannot always rely on the full panoply of considerations dictated by statute. For example, the Commission's reports rarely contain significant information on investment in the domestic industry, return on investment, or ability to raise capital. By showing the relationships among the statutory factors, the analytical structure followed here allows us to assess the effects of imports with greater confidence even when this sort of information pertinent to related factors is before the Commission.

First, the Commission must examine volumes and prices in the U.S. market for the subject imports.

Second, the Commission must evaluate the manner in which the sale of the subject imports (compared to what would have obtained in the absence of unfairly traded imports) affects domestic prices and domestic production of the like product. Third, the Commission must explore the manner in which LTFV sales have affected the domestic industry and assess the significance of such effects.31/

Alternatives: Comparative and Noncomparative Approaches

In each of these inquiries respecting the effects of LTFV imports, the Commission must compare the data we observe with an estimate of what the data would have been in the absence of imports traded at less than fair value. The data contained in the record, including the Staff Report, in the transcript of the prehearing conference, and in submissions from the parties respecting the state of the domestic industries over the period of investigation provide information from which we can draw appropriate inferences for analyzing the effects of LTFV imports. It is not, however, enough for us simply to look to the trends suggested by those data.

31/ Whether the injury to the domestic industry caused by the LTFV imports rises to the level of materiality requisite under Title VII can be addressed as a fourth question. Insofar as that is done, however, the fourth inquiry becomes a process of applying the statutory test for materiality to the information developed in the prior three inquiries; that is, this last inquiry would reach a legal conclusion but would not extend the factual analysis of the other inquiries.

Were we to do just that, we might well conclude that the domestic industries here are not injured. The domestic industries producing DROs, DRO consoles, and DRO transducers have maintained roughly stable shares of the domestic market and each has increased production slightly over the period of this investigation.32/ Moreover, price trends were up for consoles and mixed for transducers over this period.33/ Employment, hours worked, and compensation (hourly and total) for these industries also increased.34/

A conclusion that the industries are not injured by LTFV imports, however, is not plainly justified by reference to these trends. First, the trend data are not so clear as these selected figures might indicate. There also is evidence that the domestic industries are performing less well in the domestic market than previously. The volume of domestic shipments of transducers has declined by 8.2 percent and that of domestic shipments of consoles has declined by 16 percent over the period of investigation.35/

32/ Report at A-18-38-39-40.

33/ Report at A-42-45.

34/ Report at A-23. Notably, workers producing DROs increased from 217 in 1985 to 232 in 1987. Their hours worked rose from 417,000 in 1985 to 471,000 in 1987. Their compensation increased from $3.6 million in 1985 to $4.6 million in 1987. Console and transducer operations exhibited similar trends.

35/ Report at A-19-20.

Gross profits, cash flow, and return on assets also are down for these industries.36/

More important, these trends alone cannot resolve the issue properly before the Commission. The Tariff Act does not instruct the Commission merely to assess the recent economic trends in the complaining industry.37/ Instead, it asks what effect LTFV imports had (or, assessing threatened injury, imminently are expected to have) on that industry. That question can never be answered with absolute confidence, because imports never affect the domestic industry in a manner that is clearly observable. Industry fortunes may rise or fall coincidentally with observed changes in imports; but many factors affect the industry simultaneously, and the effects of LTFV imports cannot be seen separately.

The Commission does not evaluate the relative magnitudes of the various causes of observed changes in the domestic industry in cases

---

36/ These figures are for overall DRO operations, including both DRO production and sales for domestic consumption and those for export. Given the divergent trends in domestic and export shipments, the figures pertinent solely to domestic production will reveal more adverse economic trends. Report at A-27, Table 9.

37/ Inherent in an analysis of trends is the danger that relief will be denied a domestic industry on the ground that it is experiencing rising trends in performance indicators, even though such indicators might have risen significantly higher and faster if imports had not been sold at LTFV. Conversely, there is a danger that import relief may be afforded to a domestic industry that is unprofitable and shrinking, even though the decline in performance indicators is not due to unfair imports. S. Rep. No. 249, 96th Cong., 1st Sess 87 (1979); S. Rep. No. 1385, 90th Cong, 2d Sess, p. 2, at 11 (1968), reprinted in 1968 U.S. Code Cong. & Admin. News 4548-49.

under Title VII.38/ Indeed, the Commission need not even identify all such causes. But the Commission must evaluate the effects of LTFV imports, and that requires assessment of the ways in which the market information actually observed differs from what would have been observed in the absence of the LTFV imports.

One possible approach to this comparative issue is intuitive. Under this approach, trends in the domestic industry would be compared with trends in the subject imports and an intuitive judgment formed as to the relation between the two. Such judgments tend to be based on impressionistic views of the evidence, and often different evidentiary fragments will support divergent intuitions on the effect of allegedly LTFV imports. Thus, in this investigation, it could be noted that during the period of investigation the volume of subject imports of consoles declined slightly while the volume of subject imports of transducers remained stable,39/ perhaps suggesting that any harm to the domestic industry was not caused by these latter imports. Alternatively, the fact that unit values for the subject imports (both as to consoles and transducers) declined during the investigation40/ could be relied upon to support the

---

38/ S. Rep. No. 249, 96th Cong, 1st Sess, at 74 (1979); see Cold-Rolled Carbon Steel Plates and Sheets from Argentina Inv. No. 731-TA-175 (Final) (Second Remand) (Views of Vice Chairman Brunsdale) at 36.

39/ Report at A-36. Imports of consoles declined from 7,221 units in 1985 to 6,760 in 1987, and imports of transducers were 14,385 in 1985 and 14,299 in 1987.

40/ Report at A-37.

	1985	1987
Consoles:	$437.06	$417.01
Transducers:	254.50	238.13

intuition that these imports were a cause of material harm to the domestic industries.

This approach plainly leaves much room for disagreement over the meaning of the information before us. We believe that the principal source of such disagreement under an intuitive approach comes from its failure clearly to focus analysis on the issue that in fact is being addressed by the disparate intuitions: the effect of the subject imports as distinguished from all other effects on the domestic industries.

The proper approach to the Commission's task, as outlined above, is to compare the actual situation in the presence of sales allegedly at LTFV with the situation that would exist if such LTFV sales were absent. If on the evidence before us, there is a reasonable indication that the first of those two situations left the domestic industries materially worse off than they would have been under the second situation, we must in this preliminary investigation render an affirmative determination.

The Volume and Prices of LTFV Imports

Our first inquiry seeks to evaluate the amount by which prices for imported DROs were lower because of dumping. For this purpose, it is appropriate to consider the margins of dumping alleged by Petitioner. Petitioner alleges dumping margins that range from 62 percent to 104 percent.41/ These allegations are based on comparisons of (1) price lists for sales in Japan by a Japanese

41/ Report at A-7.

producer and a price list of the producer's importer affiliate for sales in the United States, and (2) a price offered by a U.S. distributor in the United States and a price offered to a distributor in Japan.

Petitioner's allegations are the best estimates currently available of actual price differences between sales in the United States and sales in Japan.42/ These figures also indicate the maximum differences between the actual prices of the subject imports and the prices that would have been charged in the absence of dumping during the period of investigation.43/44/ If the exporting

---

42/ See H.R. Doc. 153, Part II, 96th Cong, 1st Sess. (1979). (In preliminary investigations, the Commission is to be guided by Petitioner's allegations concerning the dumping margin, as modified by Commerce). The allegations in the Petition are based on a comparison of sales prices in the U.S. and Japan. The Department of Commerce's International Trade Administration (ITA) has not yet determined if the dumping margin is positive. Any dumping margin found by Commerce is based on a comparison between fair value determined by prices in the exporters' home market and export prices to the United States. These margin calculations will not directly reveal actual consumer price differences between the two national markets. This is because ITA calculates both sets of prices on an ex-factory basis, netting out additional marketing and transportation costs incurred subsequent to production. If these adjustments are ad valorem (a proportion of the consumer price) and not specific (on a unit-basis), measures of price responsiveness of demand and supply necessary for the Commission's analysis will be unaffected by the adjustments. Even if the adjustments are specific (as usually will be the case with some of the adjustment factors), however, the adjustment process should not dramatically distort the information relied on in this investigation.

43/ This is true under any assumption about the reasons for dumping by private, profit-seeking firms. The best estimate of a realistic difference in the prices of dumped and fairly traded products usually will be lower than the dumping margin. See Report accompanying Office of Economics memo EC-L-149. The estimate of price changes also must make some assumptions respecting the constancy or inconstancy of dumping margins over the period of investigation. Absent indications to the contrary, we assume that

(continued...)

firms had not been able to charge different prices in the United States and Japan (as would have been the case if the imports had been fairly traded), the prices of the imports sold in the United States may have been substantially higher, taking the Petitioner's allegations as true for purposes of this preliminary investigation. Had that happened, and especially if the import prices had increased by all or much of the alleged dumping margins, it is likely that the volumes of the subject imports sold in the United States would have been substantially below the levels actually observed. The magnitude of this change is discussed further below.

Effects on Prices and Sales of Domestic Like Products

The second area of inquiry focuses on the impact of prices and volumes of subject imports on the market for the domestic like products. The Tariff Act specifically directs the Commission to

---

43/(...continued)
dumping was constant over the period of investigation. See 3.5" Microdisks and Media Therefore from Japan, Inv. No. 731-TA-389 (Preliminary), USITC Pub. 2076 (April 1988) (Additional Views of Commissioner Cass).

44/ Chairman Liebeler and Commissioner Cass believe that while we cannot be certain about the exact price that the Japanese imports would have been sold in the United States had they not been sold at LTFV, many of the facts collected during the course of an investigation permit us to make a reasonable approximation of this price. In many cases prices of the subject imports would have increased less than the amount of the dumping margin had the imports not been sold at LTFV. See 3.5" Microdisks and Media Therefore from Japan, Inv. No. 731-TA-389, USITC Pub. No. 2076, at 74-83 (April 1988) (Additional Views of Commissioner Cass). Chairman Liebeler and Commissioner Cass agree that the dumping margin is useful in assessing the maximum increase in the U.S. price of the subject imports had they been sold in the United States and Japan at the same price.

consider the effect of LTFV imports on the prices for domestic like products.45/ Even more specifically, the Act instructs us to evaluate evidence indicating that LTFV imports have depressed prices for the domestic like products.46/ The Tariff Act further directs our attention to evidence that sales of the subject imports have replaced sales of the domestic like product.47/

The degree to which these phenomena occur depends not only on the prices at which the imports are sold but also on the manner in which demand for the domestic product responds to the price of the imports. The responsiveness of demand for the like product to changes in the price of imports in turn is generally a function of the substitutability of the import and the domestic product, the products' relative shares of the domestic market, and the availability of substitutable fairly traded imports. The more fully substitutable are the subject imports and domestic products, the more significant will be the impact of LTFV imports' sales on the prices and volumes of sales of the domestic like products. The greater the market share of the subject imports, the greater their effect on prices and volumes of the domestic like products. Correlatively, the larger the share of the market held by other

---

45/ 19 USC 1677(7)(B).

46/ 19 USC 1677(7)(C).

47/ The statute instructs the Commission to look at domestic market share and the subject imports' market share, at domestic sales, domestic output, and domestic inventories, among other factors. 19 U.S.C. 1677(7). These factors are useful in assessing changes in the sales of domestic products and relating those changes to the sales of subject imports.

substitute products, and the more readily supply of these products responds to changes in their price, the lower the impact of changes in the prices of subject imports on the domestic industries.

The record suggests that imported and domestically produced DROs are largely, but not fully, substitutable. Petitioner argued that DROs imported from Japan compete with domestic DROs and that differences between them are inconsequential.48/ Imported and domestic DROs are both sold for generally similar uses through similar channels of distribution.49/

Several parties, however, have urged the Commission to recognize differences among these products. As we noted above, Respondents Sony and Sokki argue that their magnetic products are sold for different applications from those for which domestic glass-scale transducer-type DROs are sold.50/ Their argument is supported by the significant differences found in price comparisons between imported magnetic products and domestically produced glass-scale transducers.51/ Price comparisons between imported and domestic glass-scale products also show some differences, suggesting that imported and domestic products are not completely substitutable.52/

48/ Tr. at 11.

49/ Report at A-16.

50/ Tr. at 72.

51/ Report at A-45.

52/ Report at A-45. Since these comparisons were made between standard product categories with virtually identical physical characteristics, the price differences suggest lack of substitutability due to other factors, such as delivery and service.

Further indicating a probable limitation on these products' substitutability, components produced by one company are rarely used with components produced by other companies and there is some suggestion of technological incompatibility, even among similar types of components.53/

Looking at these factors earlier, we concluded that the evidence thus far adduced regarding product differences was not sufficient at this time to find separate like products. Although the record is unclear on the exact degree of substitutability between subject imports and domestic products, the imported and domestic products are at least somewhat substitutable and for many products the imports and domestic like products appear highly substitutable.54/ This suggests that if, consequent to LTFV sales, U.S. prices of the subject imports decreased by the amount of the alleged dumping margin or even a substantial portion of that margin, the LTFV sales probably replaced purchases of domestic products in substantial measure and also decreased the price of the domestic products that actually were sold. As the subject imports account for approximately one-third of the U.S. market for DRO consoles and one-fourth of the U.S. market for DRO transducers,55/ LTFV sales of

---

53/ Report at A-16-17.

54/ Tr. at 11.

55/ Report at A-39.

those imports would have likely exerted a significant effect on prices for domestic like products in the U.S.56/

In addition to the factors addressed above, the statute also commands attention to three other factors that might support or contradict an inference regarding the effects of LTFV imports on domestic price and production. Information on inventories, capacity utilization, and productivity can be relevant to this inquiry, as they can suggest reasons the subject imports would have more or less effect than might at first appear.57/ For example, if capacity utilization in the domestic industry is low, that might suggest significant ability to increase production if the absence of LTFV imports increased demand for the domestic like product. Concomitantly, if domestic capacity is (virtually) fully utilized, the LTFV imports would not exert significant influence over domestic production, although the imports would then affect price more significantly.

With respect to these three factors as well, the evidence in the record lends some support to the conclusion that sales of LTFV imports had a depressing effect on the prices and unit sales of domestic products during the period of investigation. The domestic

---

56/ It is important to note that the evidence on the sensitivity of domestic demand for DROs and DRO components is far from conclusive, given the current state of the record. There is some suggestion in the record that products not under investigation here might displace a significant number of DROs and also a significant number of at least one DRO component. The relation of CNCs and any related technologies to DROs and DRO components merits further attention in any final investigation.

57/ 19 U.S.C. 1677(7)(C)(iii).

industries appear to be operating well below their capacities,58/ indicating an ability to have produced units that instead were replaced by LTFV imports. Further, the domestic industries expanded exports of both consoles and transducers considerably over the period of investigation.59/ This also indicates a capacity to have supplied the domestic market for the products at issue. Domestic producers' inventories declined over this period,60/ a factor that reduces the level of domestic production but also probably reduces costs. The magnitude of this change was small and does not appear to have much affected the operation of these industries.

Impact on the Domestic Industries

The final area of inquiry into the effects of LTFV imports on the domestic industry relates the inferences drawn in the prior inquiries to the information available regarding the returns realized by the domestic industries. Title VII specifies a number of factors for the Commission to consider that reflect the impact of the subject imports on the domestic industries: actual and potential negative effects on employment and wages, and actual and potential negative effects on profits, return on investment, cash

---

58/ Reported capacity utilization remained below 45 percent for consoles and was lower for transducers throughout the period of investigation. Report at A-18.

59/ Report at A-20.

60/ Report at A-22.

flow, ability to raise capital, and level of investment.61/ Effects attributable to the LTFV sale of subject imports on each of these measures of the economic health of the domestic industries can be estimated from the import-related changes in domestic prices and sales described above. The information in this preliminary investigation, however, is not sufficiently refined to make that exercise meaningful except at the level of general conclusions. Given the changes in domestic prices and sales discussed above, LTFV sales reasonably can be thought to have affected domestic employment, wages, profits, and so on, adversely.

An alternative use of the information suggested by these factors is as a basis for inference about the accuracy of these estimates. Directly observable changes in the statutory factors measuring returns to the domestic industries rarely will be simply and readily correlated with LTFV imports, in part because information on these factors seldom is kept on bases coextensive with the scope of our investigations. Reference to observed data on employment, compensation, profits, cash flow, and so on, can, however, provide inferential support for the estimates derived from our earlier analysis or, if inconsistent, can provide a basis for reexamining them. Here, the information currently available on these factors, while mixed, arguably supports an inference of significant losses from competition from subject imports. Despite substantial increases in exports, the domestic industries have experienced irregular declines in gross profits, returns on assets,

---

61/ 19 USC 1677(7)(C).

and cash flow.62/ Some domestic producers also assert that competition from the subject imports has led to difficulty in raising capital,63/ but that assertion has been disputed and is not readily assessed.64/ In sum, the evidence allows, but does not clearly establish, the inference that the domestic producers of like products have been materially injured by LTFV sales of subject imports.

III. Conclusion

For the reasons given above, and in light of the standard applicable to preliminary investigations, we determine that there is a reasonable indication that the domestic DRO industry and the industries producing DRO consoles and DRO transducers are experiencing material injury by reason of the allegedly LTFV imports from Japan. This determination is significantly influenced by the evidentiary standard applicable to preliminary investigations.

62/ Report at A-27.

63/ Report at App. E.

64/ See Report at App. E.

DISSENTING VIEWS OF COMMISSIONERS ALFRED ECKES, SEELEY LODWICK AND DAVID ROHR

Inv. No. 731-TA-390 (P)
Digital Readout Systems and Subassemblies Thereof

We determine there is no reasonable indication that the domestic industries producing digital readout systems (DRO's), and subassemblies thereof, are materially injured, or are threatened with material injury, by reason of the alleged less than fair value (LTFV) imports subject to this investigation.[1] Specifically, we find there is no reasonable indication that the industries are currently experiencing material injury. While we concede there is a reasonable indication that imports are a cause of the condition of the industries,[2] there is clear and convincing evidence that these conditions cannot properly be characterized as being materially injured. Rather, the operating performance of these industries has been extremely positive, particularly in light of the declining market for DRO's. Further, in view of the positive performance of the industries, we find there is no reasonable indication that imports threaten the industries.

The record forming the basis of our determination is unusually full for a preliminary investigation. The record concerning the condition of the industry, which is the principal basis for our determination, is particularly complete. In this preliminary investigation, we have assembled virtually complete data on the condition of the industry as well as a considerable amount of information

---

[1] Material retardation is not an issue in this investigation.

[2] Commissioner Lodwick does not join in this concession.

on imports, prices, and other factors relevant to our consideration of threat of material injury. We therefore determine there is no likelihood of information contrary to our conclusion on these determinative issues being developed in a final investigation.[3]

Like Product/Domestic Industry

To make its determinations whether there is a reasonable indication that a domestic industry is materially injured, or threatened with material injury, by reason of allegedly LTFV imports, the Commission begins by determining the domestic industry upon whose operations the effects of the allegedly dumped imports are to be examined. We define the domestic industry as "the domestic producers...of a like product."[4] The term like product refers to "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to investigation."[5] The article subject to investigation refers to the imported article or articles included within the scope of the dumping investigation initiated by the Commerce Department.[6] Thus, the Commission's analysis begins with the scope determination of the Commerce Department.

---

[3] We acknowledge there are a number of unanswered questions concerning to the causal link between imports and the condition of the industry. Regardless of the answer to these questions, the absence of material injury, about which there is no question, requires a negative determination.

[4] Section 771(4)(A).

[5] Section 771 (10).

[6] 53 Fed. Reg. 13,302 (Apr. 22, 1988).

The Commerce Department originally defined the scope of its investigation to be:

> "digital readout systems, and those subassemblies, and parts thereof, that are dedicated exclusively for use in the manufacture or production of digital readout systems. The term dedicated exclusively for use only encompasses those subassemblies that are specifically designed for use in digital readout systems."[7]

The notice further explains that the Commerce Department will determine which subassemblies meet its criteria during the investigation.[8]

On the day of the Commission's vote, the Commission received a letter, dated May 5, 1988, from the Commerce Department clarifying the scope of the investigation. This clarification states that the investigation covers both assembled and unassembled DRO's. It further states that unassembled DRO's include consoles and transducers (except laser transducers) destined for use in DRO's and imported for assembly and sale as a DRO system. With respect to subassemblies and parts, the letter clarifies that this includes consoles and parts of consoles destined for use in DRO systems. The Commerce Department notice, as modified or clarified by the May 5 letter, sets forth the articles subject to this investigation.

A digital readout system, or DRO, is a device that provides linear or rotational displacement information for the operator of high precision industrial

---

[7] Id. at 13,302.

[8] In the course of its investigation, the Commission learned that, while companies design transducers (one of the two principal components of DRO systems) for their own particular products, such transducers can also be used in computer controlled tools and other products which incorporate transducers. Therefore, there were, arguably, no imports of transducers that met the Commerce Department's original criteria.

equipment. Such equipment includes milling machines, lathes, boring machines, borers and grinders, and coordinated measuring machines.[9]

The principal components of a DRO system are the console and one or more transducers. Transducers provide the positional reference for the machine. A DRO system incorporates one transducer for each of the axes to be measured. A DRO may employ up to three transducers. The console displays the positional readout and allows the operator to position the machine accurately.

A console for a DRO is composed of a housing, control keyboard, digital display, power source, and one or more printed circuit boards with associated electronic components mounted on them. Its function is to translate input from the transducers into digital coordinates and allow the operator to position his machine accordingly.

A transducer is a device which is laid out along an axis that the DRO is to measure. It incorporates two subsystems. One subsystem acts as the scale, controlling the degree of resolution of the machine. The other relates the position of the machine to the scale. The most common type of transducer is the glass scale transducer, which uses an imprinted glass strip as a scale and a photoelectric reading head to relate the machine to the scale. Other types of transducers include rotary encoders, rack and pinion transducers, various magnetically based transducers, and laser transducers.

DRO systems, consoles, and transducers are all assembled from parts which may be either produced in-house or purchased from outside sources. Often producers specialize in the production of consoles or transducers for

---

[9] This can be contrasted, for example, to computer numerically controlled machines, which operate in much the same fashion but in which the operator is replaced by the computer.

sale to those companies which produce DRO systems. The production of glass scale and magnetic transducers generally requires the use of specialized equipment, including machines to chrome the glass and photosensitize it or laser equipment to magnetize the special alloy rods used in the magnetic transducers.[10]

For purposes of this preliminary investigation, we determine there are three separate like products corresponding to the articles under investigation: DRO systems, consoles, and transducers. DRO systems include consoles and transducers assembled together as a system. Consoles, as separate units, constitute a second like product. Transducers, whether glass scale, rotary, rack and pinion, or magnetic, also considered separately, are a third like product.[11]

We also determine there are three domestic industries, corresponding to these three like products. We recognize that there is some overlap among these industries. Some manufacturers produce DRO systems, including both consoles and transducers, while others may purchase either or both of these subsystems from other manufactures. Some manufacturers specialize in the production of consoles or transducers.

---

[10] Report at A-5-6.

[1111] We do not include laser transducers as part of the domestic like product. Such transducers operate on principles different from other transducers. The same can be said, however, for the differences between rack and pinion, rotary, glass and magnetic transducers. However, our investigation reveals that laser transducers are used predominantly in calibration and scientific applications. They are generally not used in factory environments, as are the other transducers, because they are too sensitive to vibration and require humidity and temperature compensation. Further, petitioner requested that the investigation not cover laser transducers.

Condition of the Industries

In assessing the condition of the domestic industry, the Commission considers, among other factors, production, capacity, capacity utilization, shipments, inventories, employment, wages and financial performance.[12] No single factor is determinative, and in each investigation the Commission will consider the particular nature of the industry concerned.[13]

Based on the record of this preliminary investigation, we determine that none of the three industries producing transducers, consoles and DRO's is currently experiencing material injury. Our analysis of the above statutory factors indicates that the performance of each of the three industries has been good at a time when the market for DRO systems is declining.[14] We note that the data concerning the condition of the each of three industries was provided, in most cases, by companies representing virtually the entire industry.[15]

Because of differences in accounting and control systems within companies, the levels at which the companies are able to provide different types of data on operations relating to these three like products differ. Companies provided production data, for example, separately for consoles and transducers. However, because there is one console per system, console

---

[12] 19 U.S.C. 1677(7)(C)(iii).

[13] See, e.g., 3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-389 (Preliminary), USITC Pub. 2076 (1988) at 21.

[14] Apparent U.S. consumption of DRO systems, expressed as a total of U.S. producers' and U.S. importers' shipments, declined from 23,325 units in 1985 to 20,300 units in 1987. Report at A-8.

[15] Id. at A-17.

production data are equivalent to DRO system production data. Employment data, on the other hand, were broken out according to the three products. Financial data were broken out by a few companies; but most, who produce both consoles and transducers, were able only to provide data on the DRO system level.

The data reflect the way this industry maintains its data. We can, however, make judgments concerning the production performance of DRO systems by looking at the data for consoles. By examining the financial performance of consoles and transducers separately, and in conjunction with the system data, we obtain a clear picture of the financial performance of these two component industries, as well as that relating to DRO systems. While more segregated data might be available in a final investigation, its preparation would require assumptions and allocations by the companies that would be no more than best guesses. Such data would be no better and no more revealing about the condition of the industry than the data currently available to the Commission.

Production Indicators:

All three industries displayed overall increases in capacity during the period of investigation. Capacity to produce DRO systems and consoles decreased from 53,699 units to 53,099 units, or by 1.1 percent, from 1985 to 1986, then increased by 13.5 percent to 60,249 units in 1987. Capacity to produce transducers followed a similar trend, remaining constant at 158,088 units from 1985 to 1986 and then increasing by 9.4 percent to 172,888 units in 1987. [16] While reported U.S. production of DRO systems and consoles decreased

[16] Report at A-17, A-18.

from 23,942 units to 21,628 units, or by 9.7 percent, in 1986, production rebounded by 15 percent to 24,981 in 1987, for an overall increase in production of 4.3 percent over the period of investigation. [17] Reported U.S. production of transducers decreased by 5.0 percent, from 43,385 units to 41,198 units, in 1986, but then increased by 10.2 percent to 45,406 units in 1987, 4.7 percent above 1985 levels.[18]

Capacity utilization for all three industries displayed essentially flat trends over the period of investigation. Capacity utilization to produce DRO systems and consoles decreased from 44.6 percent in 1985 to 40.7 percent in 1986, then increased to 41.5 percent in 1987. The trend in capacity utilization for transducers was even less pronounced, decreasing slightly from 27.4 percent to 26.1 percent in 1986 and rising to 26.3 percent in 1987, for an overall drop of just over 1 percentage point.[19] We believe the slight downward trend results from the increase in capacity for all three like products in 1987, because production of these products increased overall from 1985 through 1987.[20]

Shipments by producers in all three industries[21] were generally stable or increased, by value, during the period of investigation. U.S. producers'

---

[17] Id.

[18] Id. at A-18, A-19.

[19] Id.

[20] See id. at A-18.

[21] All reported shipments consisted of domestic commercial shipments and export shipments. There were no reported domestic intracompany transfers of consoles or transducers during the period of investigation. Id. at A-19.

domestic shipments of consoles (and, accordingly, of DRO systems) decreased in quantity by 9.4 percent in 1986 and again by 7.4 percent in 1987, or from 15,976 units in 1985 to 13,400 units in 1987. Domestic shipments of consoles by value also decreased between 1985 and 1987. However, export shipments of consoles, both by volume and value, increased substantially over the period, causing total shipments of consoles by domestic producers to rise from 23,102 units in 1985 to 24,941 units in 1987.[22] Total shipments of consoles by U.S. producers, by value, decreased slightly over the period. However, this reflects a drop in the unit value of exported products in 1987.[23] Thus, the overall trend in shipments of consoles (and DRO systems) by domestic producers is essentially stable.

U.S. producers' domestic shipments of transducers decreased only slightly over the period, from 33,058 units in 1985 to 30,332 units in 1987. Domestic shipments by value displayed a more gentle downward trend, due to the increase in unit value from 1985 to 1987.[24] However, we also note that U.S. producers' total shipments of transducers, by value, rose steadily from $15.1 million in 1985 to $15.6 million in 1987 because export shipments, by value, increased from $2.7 million to $3.5 million from 1985 to 1987.[25]

---

[22] Id. at A-19, A-20.

[23] Unit values for domestic shipments rose from $576 in 1985 to $600 in 1987. Unit values for total shipments showed an average decline from $517 in 1985 to $465 in 1987, due largely to the drop in unit values of export shipments. Id. at A-19, A-20.

[24] Id. at A-20. Unit values for domestic shipments of transducers rose from $373 in 1985 to $401 in 1987.

[25] Report at A-20. The data on export shipments of transducers by volume are confidential.

U.S. producers' inventories of consoles (and accordingly, of DRO systems) rose very slightly from 2,296 in 1985 to 2,357 in 1987. However, the ratio of reported inventories to U.S. producers' total shipments of consoles decreased from 9.9 percent in 1985 to 9.5 percent in 1987. Inventories of transducers fell overall by about 25 percent between 1985 and 1987.[26]

Employment Indicators:

These indicators were positive for all three industries over the period of investigation. The numbers of production-related workers producing DRO systems, consoles and transducers showed an overall increase as between 1985 and 1987. This trend was even more pronounced for hours worked by production-related workers in the three industries. Total wages and total compensation paid to such workers increased steadily over the period of investigation for all three industries, while average hourly wages for all three industries peaked in 1986 and remained above 1985 levels in 1987.[27]

Financial Performance Indicators:

Financial indicators for the three industries displayed generally positive trends. While some financial indicators displayed slight downward trends in the aggregate, it is important to note that the market for DRO systems as a whole is declining. This decline may be attributable in part to displacement of DRO systems by new products, especially computerized numerical control (CNC)

---

[26] Id. at A-22.

[27] Id. at A-22, A-23. The apparent decrease in average hourly wages from 1986 to 1987 reflects fluctuations in the numbers of production workers relative to "related" workers. Id. at A-40.

systems.[28] The generally good performance of the three industries in the face of a shrinking market is consistent with the other production and employment trends and supports our conclusion there is no reasonable indication that these industries are not experiencing material injury.

Net sales of DRO systems declined somewhat over the period of investigation, from a high of $35.3 million in 1985 to $32.2 million in in 1987, or by 8.5 percent. Operating income for the DRO industry declined by 33.8 percent in 1986, then rebounded by 12.5 percent to a level of $2.7 million in 1987.[29] In assessing these apparent downward trends, we note that general, selling and administrative expenses for this industry are relatively high and have increased as a percentage of net sales over the period of investigation.[30] The financial indicators for this industry reflect the overall decline in the DRO market but are nevertheless generally positive.

Even more revealing than the aggregate volume of operating profits is the operating income margin. Starting in 1985 at 10.3 percent, and following a drop to 7.5 percent in 1986, the operating margin for DRO systems producers

---

[28] Several respondents contended that sales of CNC systems had adversely affected their sales of DRO systems. Conf. T. at 59. While the total extent of displacement of DRO systems in the U.S. market is not known, such displacement is likely to be gradual over time and may have affected the original equipment market. To the extent such market displacement is taking place, we believe it reflects current evolution of machine tool technology. Id. at A-4, A-8.

[29] Id. at A-26, A-27.

[30] Id. at A-26, A-27. Such expenses are high because the sales staff performs many functions in addition to the usual sales activities, such as technical advice, installation, testing and follow-up services.

rose to 8.4 percent. The interim figures, which are confidential, reflect very positive performance.[31]

Net sales for the console industry rose from 1985 to 1986, then fell in 1987 for an overall slight decline. On the other hand, operating income increased throughout the period of investigation from a loss in 1985 to increasing profits in 1986 and 1987, despite the shrinking market for DRO systems. Operating margins also increased throughout the period.[32] Transducer sales revenues similarly decreased overall from 1985 to 1987, whereas operating income increased throughout the period. Operating margins also increased in each of the three years.[33] Again, we view this result as consistent with good overall performance in a declining market.

For these reasons, we find that there is a reasonable indication that the industries producing DRO systems, consoles and transducers are not experiencing present material injury. Accordingly, we do not consider the question of causation, but proceed directly to the question of threat of material injury.

No Reasonable Indication of Threat of Material Injury by Reason of LTFV Imports

In examining whether there is a reasonable indication that the domestic industry is threatened with material injury by reason of allegedly LTFV

---

[31] Report at A-27.

[32] Report at A-28. Because the data are confidential, we discuss them in general terms.

[33] Id. at A-29. Because the data are confidential, we discuss them in general terms.

imports, we are directed to consider, among other factors, any existing foreign capacity, increases in imports to the United States, any rapid increase in U.S. market penetration, the likelihood that such penetration will increase to an injurious level, the probability that imports will enter the United States at prices that will have a depressing or suppressing effect on domestic prices, any substantial increase in inventories in the United States, and the potential for product shifting.[34] In addition, the Commission must base a finding of reasonable indication of threat of material injury on "evidence that the threat of material injury is real and that actual injury is imminent," and not on "mere conjecture."[35]

In considering whether there is a reasonable indication of threat of material injury to the U.S. industries, both the condition of the industries and information about the subject imports must be analyzed simultaneously. A certain level of increased imports would be more likely to injure an industry in a weakened condition than a robust industry. In this case, the industries producing DRO systems, consoles, and transducers operated positively over the period of investigation in the presence of the high and stable import levels. There is no reasonable indication that the subject imports will enter the U.S. market in such increased quantities or at such price levels that will have an injurious impact on the U.S. industries.

Existing Japanese capacity available to increase exports to the U.S. is low. Japanese console production capacity utilization has remained high

---

[34] 19 U.S.C. 1677(7)(F)(i).

[35] 19 U.S.C. 1677(7)(F)(ii).

throughout the period of investigation.[36] Japanese transducer production capacity also had high rates of utilization rising from 93.0 percent in 1985 to 94.3 percent in 1987 with projected production capacity utilization close or equal to 100 percent.[37]

There have not been rapid increases in market penetration by either console or transducer imports from Japan. The quantity of imports of Japanese produced consoles has dropped from 1985 to 1987 though the market share of these imports rose slightly during a period of declining domestic U.S. consumption.[38] Both transducer import quantities from Japan and the market share of these imports remained stable during the period of investigation.[39]

With the wide variety of DROs, consoles, and transducers sold by importers and U.S. producers, the usable price comparisons of comparable products had limited coverage. The data available showed that price trends fluctuated or remained stable during the period.[40]

While U.S. importer inventory levels of consoles and transducers from Japan were higher than comparable U.S. producer inventory levels, the inventories of

---

[36] Report at A-35.

[37] Id.

[38] Id. at A-36, A-38, A-39.

[39] Id. at A-37, A-38, A-39.

[40] Id. at A-42, A-44, A-45.

imports from Japan have remained stable or increased slightly both in terms of quantity and share of period imports.[41]

Japanese exporters have markets in countries other than the U.S. Japanese console and transducer exports to these countries are growing and are twice as large as exports to the U.S.[42] Faced with declining Japanese home market shipments for consoles and transducers, Japanese producers have reduced their transducer production capacity, and have reduced console production capacity utilization and shifted console sales to a growing export market in countries other than the U.S., thereby decreasing the potential for product shifting to U.S. markets.

In summary, the high Japanese capacity utilization in console and transducer production, the relatively stable imports of consoles and transducers from Japan, the inconclusive price trends, the stable importer inventories of Japanese consoles and transducers, and a large growing export market for Japanese consoles and transducers to countries other than the United States do not indicate that the threat of material injury to the U.S. DRO, console or transducer industries is real and that actual injury is imminent. We therefore conclude there is no reasonable indication that the domestic industry is threatened with material injury by reason of Japanese imports of digital readout systems or subassemblies and parts thereof allegedly sold at LTFV.

---

[41] Id. at A-22 and A-33.

[42] Id. at A-35. This is consistent with the fact that U.S. exports to third countries are also growing.

ADDITIONAL VIEWS OF COMMISSIONERS ALFRED ECKES AND DAVID ROHR

Digital Readout Systems and Subassemblies Thereof from Japan
Investigation No. 731-TA-390 (Preliminary)

We have determined that there is no reasonable indication that the domestic industries producing the three like products are currently experiencing material injury.[1] Having so decided, we need not determine whether such injury would have been caused by allegedly dumped imports. Because in our view the record as a whole contains clear and convincing evidence of no material injury, we see no reason to continue this investigation.

In this respect our views differ from those of three of our colleagues who have made affirmative determinations despite the lack of any reasonable evidence of injury to the domestic industries. We understand their analyses are based on an approach whose central inquiry is what the condition of the industry would have been if dumping had not taken place. Unlike the so-called "bifurcated" approach, which analyzes trends in the reported data

---

[1] See Dissenting Views of Commissioners Alfred E. Eckes, Seeley G. Lodwick and David B. Rohr, which appear earlier in this publication.

concerning conditions of trade in the industry over a three-year period, this approach has yet to withstand judicial review.

We offer the following comments to facilitate public debate in future title VII investigations on the merits of this approach before it is tested in court. In our view the affirmative determination which requires this investigation to proceed despite the lack of a reasonable indication of material injury illustrates some of the problems that arise when determinations are based on hypothetical scenarios.

As we understand it, the affirmative determinations include at least one based on a novel analytical framework[2] which assumes the "essential requirement for dumping" is that "some impediment bars reimportation to the exporting country of products exported to the United States." Without such an impediment, the theory holds, there would be no way "to sustain a price difference" between the United States market and the foreign market.[3] In other words, absent this impediment, which

---

[2] See Additional Views of Commissioner Ronald A. Cass, 3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-389 (Preliminary), USITC Pub. 2076 (1988) ("Microdisks").

[3] Microdisks at 35.

"might be a product of law, custom, or asymmetrical transportation costs,"[4] the prices in the two markets would equalize themselves through the process of price arbitrage. The approach purports to evaluate the effects of these impediments to competition in foreign markets on U.S. producers in our domestic markets.[5] (We note that the approach does not appear to address those cases where foreign market value is not based on a price at all, but on a constructed value built from costs, selling expenses and profit.)

At the outset, we are mystified by this formulation of our mission under the statute. We can see no basis in either the statute or its legislative history to conclude that Congress wished the Commission to determine the effects, whether direct or indirect, on our industries of barriers to competition in foreign markets. It strikes us that the new approach merely dresses an "injury to competition" test in "injury to industry" clothing so as to make use of certain presumptions central to antitrust theory. This raises several concerns.

First, we are concerned about the remedy-oriented nature of this new approach. As we see it, our duty under

---

[4] Id. at 35, n. 14.

[5] Id. at 36.

the statute is to determine whether the industry is experiencing material injury or threat thereof by reason of imports subject to investigation. We do not believe this responsibility encompasses speculation as to the various ways in which dumping could be eliminated after our determination has been made, or could have been eliminated prior to our investigation. Nowhere has Congress intimated that the Commission's role is to make an affirmative determination only where the imposition of duties would materially improve the condition of the industry.

To the extent a determination is grounded on hypothetical notions about the marketplace, its connection with information in the record--and thus its chances of withstanding judicial review--may be tenuous or nonexistent. In the present case, this type of "but for" reasoning has led to a determination at odds with the facts of record, which disclose three industries that have adjusted successfully to the presence of imports and are performing very well in a shrinking market.

Second, any presumption that foreign barriers to reimportation exist--the "essential requirement for dumping" (emphasis added) under the new approach--is really a statement directed at why dumping exists.

Because the Commission has no legal authority to determine the causes of dumping, any such pronouncements contravene the statute and are irrelevant to our statutory inquiry.

Third, it appears that one commissioner intends to seek information on foreign barriers to reimportation in all future final antidumping investigations.[6] If the existence of barriers to reimportation is required in order for dumping to exist, what conclusions could be drawn if no evidence of such barriers turns up in an investigation? Must we conclude there is no dumping--a determination forbidden to us under the bifurcated authority granted to us by statute? Or, must we nevertheless presume such barriers exist because dumping presupposes them? If so, how are we to defend such presumptions in court? Perhaps more importantly, how may the parties anticipate these presumptions and have adequate opportunity to address them?

Fourth, to the extent the staff is able to secure data purporting to show barriers to reimportation, how will it

---

6 See Memorandum C066-L-023, from Commissioner Cass to the Directors of the Offices of Economics and Industries and the Acting Director of the Office of Investigations. The memorandum requests that the staff address ten sets of questions which are attached to the memorandum. The information requested in the attached list of questions includes information about dumping margins, barriers to reimportation, exporters' market power, substitutability of goods, separation of markets, levels of sales in the two markets, and various price elasticities.

advance the Commission's statutorily mandated analysis? We believe it is important to consider this question, as the gathering of this and other information ostensibly showing the effects of dumping on the domestic industry[7] could require expenditure of significant resources by the parties to our investigations. To answer this question, we must examine what assumptions the new approach makes concerning dumping and how the model proposes to use information about dumping.

The approach purports to compare the domestic industry's actual performance with what the domestic industry's performance would have been in the absence of the unfair trade practice during the period of investigation.[8] This inquiry is the first of three which comprise the analytical framework. As we understand it, these inquiries are to be made in turn, with the second and third resting squarely upon the first.[9] The

---

[7] Id. Some of the listed questions would appear to require a significant amount of information about the foreign market.

[8] Microdisks at 60.

[9] The second inquiry concerns the manner in which the change in the market for imports from what would have obtained absent the dumped imports affects domestic prices and production of the like product. The third inquiry focuses on the manner in which the changes in the market

(Footnote continued to page 7)

first inquiry compares the actual volumes and prices of the imports subject to investigation with an estimate of the volumes and prices that would have obtained had the imports been fairly traded.[10] To do so, the model specifies four pieces of information which are "necessary to know" but typically unavailable: (1) when dumping began, (2) the volume of unfairly traded goods, (3) the dumping margin, and (4) the reason for the dumping.[11]

As to the first element--when dumping began--the model relies on "Commission practice" of assuming that "dumping was constant" throughout the three-year period of investigation.[12] While we are aware of no such Commission practice,[13] any such assumptions are

---

(Footnote continued from page 6)
from what would have obtained absent the dumped imports affect employment and investment in the domestic industry. This structure "builds on conclusions in the preceding inquiries." Id. at 72-74.

10 Id. at 74.

11 Id. at 75.

12 Id. at 76.

13 For purposes of determining which imports it will examine or cumulate, the Commission must sometimes decide whether to consider particular imports "unfairly traded". This is not a statement as to whether imports are actually dumped, but rather a determination that they constitute merchandise subject to the investigation: i.e., that which has not been finally found to be sold at or above fair value.

groundless.[14] The Commerce Department's mandate under the Tariff Act of 1930 is to determine whether dumping is currently taking place. In this regard, Commerce generally examines imports for only the six month period prior to filing of the petition.[15] Even in those rare cases where Commerce extends this period, however, no assumptions can be made about dumping during time periods other than those investigated by Commerce. Any such assumptions would amount to a Commission determination of dumping which would have no basis in the record and, consequently, a poor chance of survival in the Court of International Trade.

As to the third element--the dumping margin--all that exists at this preliminary stage is an allegation of dumping, based on what little information the petitioner was able to assemble at the time of filing the petition. The most that can be said about these alleged margins is that Commerce considered them a sufficient basis to initiate an antidumping investigation. Here, the alleged margins are based on a comparison of published list prices which are several months old and may not reflect actual

---

[14] For this is reason, the traditional bifurcated analysis has been designed to avoid making any such assumption.

[15] Id. at 76.

selling prices: these must be calculated using the responses to Commerce's questionnaires and applying a multitude of statutory and regulatory adjustments, which in turn result from many legal, policy and accounting calls by Commerce decisionmakers.

Given the complexity of the calculation and adjustment methodologies applied to raw prices to arrive at ex factory values, it is a mistake to assume that an alleged dumping margin bears any resemblance to the preliminary margin Commerce will calculate in the future. For these reasons, we believe reliance on alleged dumping margins is misplaced in a preliminary determination. While it may appear reasonable for the new approach to rely on alleged margins as "the best estimate of the margin of dumping" at this stage,[16] we question whether reliance on something so tenuous furthers the purposes of the statute.

Even in a final injury determination, however, dumping margins do not offer a basis for concluding what the import price of merchandise would have been had it not been dumped. Dumping margins merely reflect the difference between the adjusted United States price and foreign market value. They do not provide information about what either value was before the margin

---

16 See Microdisks at 80.

theoretically arose, or about the direction of movement in the raw prices from which United States price and foreign market value are derived. This is particularly true in cases where the foreign market value used in calculating the margin is based on a third country price or constructed value. Thus, while it might be convenient to employ assumptions about prices "but for" dumping, such assumptions will never have a basis in the factual record.

In fact, the first opportunity a respondent has to revise its pricing behavior--the first annual review of an antidumping order--takes place after the Commission's final determination. This information is, of course, inaccessible to us in our determinations.[17] In any case, there is nothing in the antidumping law that tells respondents how they must change their business practices to eliminate dumping at the annual review stage.

Given the problems presented by this first-stage inquiry, we question whether the model offers a defensible basis for determining what changes took place in the

---

[17] In some cases respondents enter into suspension agreements prior to the termination of an investigation. Such an agreement usually terminates the Commission's inquiry. In any case, the statute governing suspension agreements does not specify how a respondent must revise its import prices to avoid breaching the agreement. The only exception, an "agreement to eliminate injurious effect," permits a limited amount of dumping to continue.

market as a result of dumping, even if this inquiry were itself permissible under the statute.[18]

We are also concerned with the method to be used at the next stage of the new approach: the determination of the likely change in price as a consequence of dumping. The apparent basis for this determination is the relative sales volumes of the merchandise in the U.S. and foreign markets. The operative assumption is as follows: the higher the relative U.S. volume, the less the apparent decline in the import price caused by sales at less than fair value.[19] Unless we are mistaken we read this to mean that, for example, where there is no home market for the merchandise and all of it is exported to the United

---

18 We are also concerned with an inherent contradiction between the assumptions about dumping in the model and the model's use of supply elasticities in an effort to gauge the effects of the dumping. The model, as we understand it, implies that dumping cannot exist unless the foreign producers have some degree of control over their home market. However, in the presence of market power, supply elasticities are meaningless. While supply may respond to price changes, traditional economics would not consider that response a supply elasticity because it derives from the firm's strategic planning rather than market forces. It is not possible to derive an elasticity from historical changes in volumes and prices. It is also questionable whether the Commission could "go behind" the supply response to the strategic concerns that underly it.

19 Microdisks at 80-81. This theory is described more fully in a recent article by a Commission economist. R. Boltuck, "An Economic Analysis of Dumping," 30 Swiss Rev. Int'l Comp. L. 23 (1987).

States, there is also no price effect. We question whether this outcome makes sense.

We encourage the parties to address these issues in any final investigation.

INFORMATION OBTAINED IN THE INVESTIGATION

Introduction

On March 28, 1988, an antidumping petition was filed with the U.S. International Trade Commission and the U.S. Department of Commerce by Anilam Electronics Corp., Miami, FL. The petition alleges that an industry in the United States is materially injured and threatened with material injury by reason of imports from Japan of digital readout systems and subassemblies thereof, 1/ provided for in item 710.80 of the Tariff Schedules of the United States (TSUS) or however elsewhere provided for in the TSUS, that are alleged to be sold in the United States at less than fair value (LTFV). Accordingly, effective March 28, 1988, the Commission instituted investigation No. 731-TA-390 (Preliminary) under section 733(a) of the Tariff Act of 1930 (19 U.S.C. § 1673b(a) to determine whether or not 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 such imports.

Notice of the institution of the Commission's investigation 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 April 4, 1988 (53 F.R. 10953). 2/ The conference was held in Washington, DC, on April 20, 1988. 3/

Effective April 22, 1988, the United States Department of Commerce initiated an antidumping investigation to determine whether the subject merchandise is being, or is likely to be, sold in the United States at LTFV (53 F.R. 13302). 4/

1/ Digital readout systems provide linear or rotational displacement information for high-precision industrial equipment such as metalworking machine tools. The systems generally consist of an electronic console and one measurement transducer for each axis of linear or rotational displacement to be measured. Subassemblies consist of electronic consoles or transducers (the major components of digital readout systems); the major components of electronic consoles, namely printed circuit boards; and the two major components of transducers, namely glass strips with chrome grating, and reading heads.

The products covered by this investigation are digital readout systems and those subassemblies, and parts thereof, that are dedicated exclusively for use in the manufacture or production of digital readout systems. The term "dedicated exclusively for use" only encompasses those subassemblies that are specifically designed for use in digital readout systems, and may not be used for other purposes. During the course of its investigation, the U.S. Department of Commerce will determine whether certain subassemblies meet the above criteria.

In a letter to the Commission dated May 5, 1988, the U.S. Department of Commerce clarified the product coverage presented above.

2/ A copy of the Commission's notice of institution is presented in app. A.

3/ A list of the witnesses who appeared at the conference is presented in app. B.

4/ A copy of Commerce's notice and letter of clarification are presented in app. C.

The Commission's vote on this investigation was held on May 6, 1988. The applicable statute directs that the Commission make its final injury determination within 45 days after receipt of a petition, or in this case by May 12, 1988. The Commission has conducted no previous investigations on digital readout systems and subassemblies thereof.

The Product

Description and uses

Digital readout systems.--Digital readout systems are devices that provide linear or rotational displacement information for high-precision industrial equipment. The systems are primarily used with manually operated metalworking machine tools such as milling machines, lathes, boring mills, jig borers and grinders, coordinate measuring machines, 1/ and other industrial equipment requiring precision measurements. 2/ Digital readout systems do not control the operation of machine tools automatically. They are used in connection with machine tool operators, and provide operators with a digital display of a machine tool's horizontal, vertical, or lateral movement (displacement). Each digital readout system consists of a console and one measurement transducer for each axis of linear or rotational displacement to be measured. Imported consoles and glass scale transducers do not differ measurably from comparable U.S.-made products; imported magnetic scale transducers are different from the types of transducers produced in the United States, but digital readout systems containing imported magnetic scale transducers compete to some extent with systems containing glass scales.

Subassemblies of digital readout systems consist of consoles or transducers sold separately, and include the major component of consoles, namely printed circuit boards, and the major components of transducers, e.g., glass strips with imprinted gratings; magnetized rods; disks; or reading heads.

Consoles.--Consoles for digital readout systems are electronic assemblies that collect displacement and directional information from one or more transducers and produce a digital display of displacement for the user. A console is generally made up of a housing, a keyboard with touch sensors, digital displays, one or more printed circuit boards, and a power supply. The foreign and U.S. producers all produce a number of models and the various models generally differ only in the complexity of digital manipulation capabilities. In addition to basic readout capabilities, the more complex systems may have selectable resolution settings, memory capabilities to store a number of coordinate locations for recall, correction factor capabilities for geometric errors, thermal shrinkage or expansion cutting tool diameter offsets, and inch to metric conversions.

1/ Coordinate measuring machines check manufactured products to assure conformance to specified dimensional requirements.

2/ It is generally not cost effective to use digital readout systems other than with metalworking machine tools. However, these systems do have some other specific applications such as with woodworking machines and with machines for making printed circuit board layouts.

Transducers.--Transducers for digital readout systems are devices that "read" machine travel and displacement and encode data for display by consoles. Transducers are produced in a number of sizes, lengths, and resolutions in order to meet the physical requirements of the application. According to industry sources, 12-, 16-, 30-, and 36-inch transducers account for the bulk of total sales. In general, measurement lengths range from about 2 to 240 inches. There are a number of different types of transducers that are suitable for use in digital readout systems; such transducers may also be used in other applications, e.g., in computerized numerical controls.

Rotary encoders.--A rotary encoder transducer consists primarily of a housing, a magnetically recorded metal disk, and a pickup sensor encased in a housing. 1/ The pickup device senses recorded signals for transmission to the console. Because the transducers transmit pulses based on the recording or pitch of the rotary encoder, such transducers are not length dependent.

Rack and pinion.--Rack-and-pinion transducers consist primarily of a metal rack, a pinion, and a rotary encoder. The pinion moves along the rack, reading machine travel and displacement. The rotary encoder converts the mechanical motion of the pinion gear to electrical signals. The encoded signals are transmitted to the console for display. Rack-and-pinion transducers account for a minor share of total U.S. consumption and are generally used for applications longer than 10 feet.

Glass scales.--Glass scale transducers are the most widely used transducers for digital readout systems in the United States. Such transducers consist primarily of a strip of glass imprinted with a vacuum deposited chrome grating, encased in a housing, and fitted with a moveable reading head that contains a light source and a photodetector that changes the interference pattern of light to on-off electrical signals. The housing is fitted with an elastomer seal along the path of the moveable head to minimize the effect of factory contaminants such as oil, chips, dust, and coolants. Such transducers are available in various dimensions, generally not over 120 inches.

Magnetic scales.--Magnetic scale transducers employ permanent magnetic fields to measure displacements. A magnetic recording in a specially designed alloy rod is read by a pickup head. The transducers are available in various sizes ranging from 2 inches to any desired length. Magnetic scale transducers tend to be capable of higher resolution than glass scales, may be even less sensitive to dirt and other environmental problems, and command a price premium.

1/ There are also "track sensitive" transducers that use hardened, finely scratched gauge-wheels that act as a pinion. The gauge-wheel senses linear movement and translates it into rotary motion. Rotary motions are then converted into digital pulses and transmitted to the console.

Inductosyn (registered trademark).--Inductosyn transducers are maufactured only in the United States. Farrand Industries, Inc., Valhalla, NY, is the producer. 1/ As in the magnetic scale transducer, the inductosyn transducer measures by exploiting magnetic fields. However, the inductosyn transducer has an excited magnetic field rather than a permanent magnetic field. Inductosyn transducers tend to be * * *, and are used in especially high-precision applications, including military and aerospace applications.

Laser.--Laser transducers are capable of achieving the highest resolution of all transducers. They are also much more costly than other transducers. They are principally used in calibration and in scientific applications, although such transducers are apparently used in some machine tools. 2/ Laser transducers are generally not used in factory environments because they are too sensitive to vibration and require humidity and temperature compensation. 3/

Substitute products

Some products, which are not subject to this investigation, may be considered substitute products. The most important of these substitutes are described below.

Computerized numerical control systems.--Computerized numerical control (CNC) systems for machine tools and some other industrial processes, in which numerical values correspond to desired position of tools or controls, enable machine tools to perform the machining functions automatically. Machine tools with CNC systems may use the same transducers as those used in digital readout systems. Respondents contend that sales of CNC's have adversely affected those of digital readout systems. 4/ Additional discussion of the possible effects of CNC's on the market for digital readout systems is presented in the section of this report entitled "The U.S. market."

1/ There may be some additional production in the United States of inductosyn transducers under license from Farrand.

2/ Postconference brief of Wilmer, Cutler & Pickering on behalf of Sony Magnescale, Inc., Apr. 22, 1988, annex A, p. 7.

3/ Anilam stated * * * "Laser transducers: Anilam . . . did not include this type of digital readout system in its petition. We do not consider it to be a like product."

4/ Transcript of the public conference, p. 59. In addition, * * * stated that the development of CNC's "has had a major impact on the DRO market during the last couple of years. The CNC is a much more sophisticated type of measuring device. Even though it is a somewhat more expensive product, the price difference is narrowing and many DRO customers (especially the larger and more sophisticated ones) are switching from DRO's to CNC's. Anilam itself is actively marketing this competitive product."

Trav-A-Dial (registered trademark).--The Trav-A-Dial, a mechanical readout system produced by Southwestern Industries, is a "stand alone" piece of equipment that performs a similar function as digital readout systems. The Trav-A-Dial is an older technology than that of digital readout systems. It was the industry standard during the 1960's and 1970's. In a Trav-A-Dial, the sensors are made up of gears. The sensor moves along the measured surface and, simultaneously, the motions are displayed on a dial face by a sweep hand.

Manufacturing processes

Both U.S. and foreign producers assemble transducers, consoles, and many of the major components by assembly line processes. In the assembly line process, each worker performs one or more tasks until the product is assembled.

The consoles and transducers are made up of a number of parts and components that may be produced in-house or purchased from outside sources. Most of the purchased items are off-the-shelf products and the remainder are custom-made products. Therefore, the value added by the manufacturers varies from one producer to another, depending on the value of parts and components produced in-house or purchased from outside sources.

The assembly of consoles encompasses the following primary stages. First, a faceplate is attached to a base. The faceplate consists of a sheet metal panel to which is pressed a lexan overlay containing windows and lettering. A keyboard is fastened to this assembly and a printed circuit board containing logic circuitry is attached. Then a rear panel containing power supply components, signal interfaces, and interconnecting harnesses is fastened. Finally, a metal cover (housing) is fixed around the entire assembly.

Housing and faceplates for the consoles may be made by the producers of digital readout systems or purchased. A number of manufacturers produce their own printed circuit boards. However, the various electronic components that make up the completed circuit boards are generally attached to the board in-house in an assembly line production process.

With regard to transducers, some manufacturers produce their own vacuum-deposited chrome grating strips for glass scale transducers, whereas others purchase them from outside sources. The same is true for housings. Reading heads are generally assembled in-house and are made of components produced in-house and/or purchased from outside sources. Cables are usually purchased from outside sources.

The production of glass scales for glass scale transducers entails a number of stages. In the first stage, the glass is cut into strips of the desired dimensions; then it is edged, washed, sprayed with chrome (which is done in a glass coater), and photosensitized. At the latter stage, a mechanically edged master copy with the desired resolutions is placed against a photosensitized glass strip for exposure to a light source in order to create what is essentially a negative. Acid will then be used to remove the chrome to expose the precisely spaced lines on the glass strip.

The assembly of rotary transducers consists of the following steps. First, a coupling hollow shaft is attached to a metal base with mounting brackets, followed by fastening a magnetized metal disk. Then a large-scale integrated circuit, reading head, and interconnecting harnesses are attached. Finally, the cover (housing) is affixed to the entire assembly.

The metal rods for permanently magnetized magnetic scales are made of a special alloy. The alloy rod is magnetized by a laser device to record magnetic graduation on the rod, with each polarity taking up a space equivalent to the fixed wavelength on a sinusoidal or sine wave.

At the time of installation, metal brackets are generally used to attach the consoles and/or transducers to the industrial equipment, and cables are utilized to interconnect the transducers and the consoles.

U.S. tariff treatment

Digital readout systems and subassemblies thereof are classified in TSUS item 710.80, and statistically reported under item 710.8080 of the Tariff Schedules of the United States Annotated (TSUSA). 1/ The most-favored-nation (MFN) (column 1) rate of duty 2/ since January 1, 1987, applicable to imports of digital readout systems and subassemblies thereof, is 4.9 percent ad valorem. 3/ This duty rate applies to imports from all countries other than the Communist countries enumerated in TSUS general headnote 3(d), 4/ except for MFN-source imports that qualify for preferential tariff programs. 5/

1/ According to information supplied by * * *, digital readout systems and the two major subassemblies have been classified in TSUS item 712.49 and have been statistically reported under TSUSA items 712.4950 or 712.4975, at a col. 1 rate of duty of 4.9 percent ad valorem. The National Import Specialist of the U.S. Customs Service indicated that the digital readout systems imported by * * * should be classified in TSUS item 710.80.

2/ The MFN rates of duty in rate col. 1 of the TSUS generally represent the final stage of the reductions granted in the Tokyo Round of the Multilateral Trade Negotiations.

3/ In addition, pursuant to the Omnibus Budget Reconciliation Act of 1986, a user fee (to cover the cost of the U.S. Customs Service's processing of imports) of 0.17 percent ad valorem on most imports is in effect.

4/ Col. 2 rates of duty apply to products of these countries, which currently include all Communist countries except the People's Republic of China, Hungary, Poland, Romania, and Yugoslavia, all five of which are eligible for MFN treatment.

5/ Preferential tariff programs include the Generalized System of Preferences (GSP), which affords nonreciprocal tariff preferences to developing countries to aid their economic development; the Caribbean Basin Economic Recovery Act (CBERA), which grants nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development; and the United States-Israel Free Trade Area Implementation Act, which applies to products of Israel.

Digital readout systems and subassemblies thereof are provided for in subheading 9031.80.00 of the proposed Harmonized Tariff Schedule of the United States. 1/

Nature and Extent of Alleged Sales at LTFV

The petition alleges that digital readout systems or subassemblies thereof from Japan are being offered for sale and sold in the United States at LTFV. Evidence provided in the petition for the allegation of sales at LTFV consists of (1) a comparison of price lists for sales in Japan by Mitutoyo Manufacturing Co., Ltd., a Japanese producer of digital readout systems, with a price list for sales in the United States by MTI Corp., Paramus, NJ, which imports and resells the subject products from Mitutoyo; and (2) a comparison of the price offered by a U.S. distributor for a digital readout system produced in Japan with the price offered by Mitutoyo for the same system to a Japanese distributor. Alleged dumping margins for three types of digital readout systems examined by the petitioner range from 62 percent to 104 percent.

The U.S. Market

Digital readout systems are principally sold for use with machine tools, where they are mounted on machine tools that have human operators. The digital readout systems enable operators to increase the machine tools' productivity by monitoring the machines' accuracy and adjusting the machines accordingly. Digital readout systems are either retrofitted on machine tools already in use, or are installed on new machines in the original-equipment manufacturer (OEM) market.

The machine tool market for digital readout systems is affected by two factors. The first, although not necessarily the more important, is the extent to which imported machine tools already include digital readout systems when they are imported. Several firms that responded to the Commission's questionnaire sent to importers stated that they had imported machine tools that already included such systems. Although no data are currently available, it is probable that digital readout systems entering the United States as part of imported machine tools account for a minority share of the digital readout systems in use in the United States.

1/ The Harmonized Commodity Description and Coding System, known as the Harmonized System or HS, is intended to serve as the single modern product nomenclature for use in classifying products for customs tariff, statistical, and transport purposes. Legislation to replace the TSUS with an HS-based tariff schedule known as the Harmonized Tariff Schedule of the United States is not yet law.

The second factor that may affect digital readout systems in the machine tool market is the extent to which digital readout systems are being displaced by CNC equipment, especially in the OEM market. 1/ It appears that there may indeed have been some displacement in the OEM market, where it may be cost effective for owners of new plants or new machine tools to incur the substantially higher costs of installing CNC's and dispensing with the employment costs that would be incurred in using machine tool operators. The extent to which such displacement may have occurred is unknown, although any such displacement is likely to be a gradual displacement over time.

Apparent U.S. consumption

Data presented in table 1 on the apparent consumption of digital readout systems consist of data on the apparent consumption of the number of consoles for digital readout systems, since there is always only one console per system. The data are composed of U.S. producers' reported domestic shipments of consoles plus U.S importers' reported domestic shipments of consoles. Apparent U.S. consumption of digital readout systems (consoles) decreased by 6.3 percent in 1986 and by 7.1 percent in 1987; the decrease between 1985 and 1987 amounted to 13.0 percent.

Table 1
Digital readout systems: U.S. producers' and importers' domestic shipments and apparent U.S. consumption, 1/ 1985-87

(In units)

Item	1985	1986	1987
U.S. producers' domestic shipments....	15,967	14,463	13,400
U.S. importers' domestic shipments....	7,358	7,382	6,900
Total apparent consumption.....	23,325	21,845	20,300

1/ The data consist of data on the apparent consumption of consoles for digital readout systems, since there is always only one console per system.

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

1/ * * *, a domestic producer of digital readout systems, stated "The introduction of and increased marketing of NC and CNC machine tools has displaced the need for digital readout systems."

* * *, when asked * * * whether CNC's have taken any business away from digital readout systems, said "Yes. More original equipment is now computer numerically controlled."

It was contended by some of the respondents at the public conference that such displacement is due in part by alleged efforts by Anilam to encourage its salespeople to sell CNC's instead of digital readout systems.

U.S. producers

Twelve firms are known to have produced digital readout systems or subassemblies thereof in the United States during 1985-87. The 12 firms, their positions regarding the petition, and their shares of reported U.S. production of consoles and of transducers for digital readout systems in 1987, are presented in the following tabulation:

Producers	Position on the petition	Share of the quantity of U.S. production in 1987-- Of consoles (Percent)	Of transducers (Percent)
Acu-Rite	Supports	***	***
Anilam Electronics	Supports	***	1/
Compumotor/Spaulding	* * * 2/	3/	3/
D-ANN	* * *	4/	5/
Dynamics Research	* * *	6/	7/***
Elm Systems	* * *	8/	***
Farrand Industries	* * *	***	***
Quality Measurement Systems	* * *	***	***
Sargon Industries	Supports	***	***
Southwestern Industries	* * * 9/	***	***
Teledyne Gurley	* * *	10/***	***
Tri-Onics	* * *	***	***
Total		100.0	100.0

1/ Anilam * * *. Anilam purchases * * * its transducers.
2/ * * *.
3/ * * *. * * *.
4/ D-ANN's production data * * *. D-Ann produced *** consoles in 1987.
5/ * * *.
6/ Dynamics Research did not produce consoles in 1987. It divested its console operation to D-ANN in early 1986.
7/ * * *.
8/ * * *.
9/ * * *. * * * stated in a letter * * * "* * *."
10/ Teledyne Gurley * * *.

The producers that support the petition accounted for over 95 percent of U.S. production of consoles in 1987, and over 90 percent of reported U.S. production of transducers.

The list of producers of digital readout systems does not include the few producers of laser transducers, and does not include Metronics, Inc.,

Manchester, NH. 1/ Also excluded is Heidenhain Corp., Elk Grove Village, IL, which produced consoles in connection with * * *, and * * * has assembled * * * of its transducers in Elk Grove Village, with about a *** percent value added in the United States. 2/ Heidenhain reportedly only competes in the very high end of the market for digital readout systems. * * *.

Some firms produce the entire digital readout systems and others produce simply the consoles or the transducers, as shown in the following tabulation:

Producer	Production of consoles	Production of transducers
Acu-Rite	Yes	Yes, glass scales.
Anilam Electronics	Yes	Yes. 1/
Compumotor/Spaulding	Yes	Yes, rack and pinion.
D-ANN	Yes	Yes, glass scales.
Dynamics Research	No	Yes, glass scales.
Elm Systems	Yes	2/
Farrand Industries	Yes	Yes, inductosyn.
Quality Measurement Systems	Yes	Yes, glass scales.
Sargon Industries	Yes	Yes, glass scales.
Southwestern Industries	Yes	Yes, gauge wheel encoders.
Teledyne Gurley	Yes	Yes, glass scales.
Tri-Onics	Yes	Yes, glass scales.

1/ Anilam produces * * * rack-and-pinion transducers. * * *.
2/ * * *.

Anilam.--Anilam Electronics Corp., Miami, FL, the petitioner in this investigation, is a wholly owned subsidiary of Core Industries, Inc., Bloomfield Hills, MI. Anilam produces consoles for digital readout systems as well as CNC retrofit packages; CNC machine tool packages; and CAD/CAM systems and software. Anilam produces * * * rack-and-pinion 3/ transducers. * * * of the transducers that Anilam sells as part of its digital readout systems are glass scales that are * * *; during 1985-87 about *** percent of its glass scales were * * *; most of the remainder were * * *. * * *. The foreign content share of the cost of goods sold of Anilam's digital readout systems was *** percent in 1985, *** percent in 1986, and *** percent in 1987, owing to its imports of transducers.

1/ In an attachment to Metronics' response to the Commission's questionnaire, * * * said that "* * *." Metronics was acquired by Acu-Rite, * * *, in November 1986. Metronics * * *. Metronics is known to * * *. Metronics' domestic shipments of consoles amounted to *** units, valued at $***, in 1985; *** units, valued at $***, in 1986; and *** units, valued at $***, in 1987.

A telephone conversation of a member of the Commission staff with * * * of Anilam on Apr. 22, 1988, confirmed that the type of console produced by Metronics is quite different from the type on which Anilam has filed this petition; in fact, Anilam * * *.

2/ Telephone conversation with * * *. * * *. However, in subsequent telephone conversations with a member of the Commission staff, that indication was qualified owing to the * * *.

3/ * * *.

Acu-Rite.--Acu-Rite Inc., 1/ Jamestown, NY, * * *, was established as a separate company in 1985 when Bausch & Lomb., Inc., Rochester, NY, sold its digital readout system business to Dr. Johannes Heidenhain GmbH, Traunreut, West Germany. 2/ Acu-Rite produces consoles and glass scale transducers for digital readout systems in separate facilities in Jamestown, and * * *. 3/ Acu-Rite is currently building a new facility near Jamestown in which all of its operations will be consolidated.

* * * of Acu-Rite's transducers are sold for use in digital readout systems, * * * (approximately *** percent of its domestic shipments in 1987) are sold for use in CNC's. Acu-Rite has * * *.

Acu-Rite has recently marketed a new product called a vision readout (VRO) system. The VRO system is similar to a digital readout system except that the VRO console has a cathode-ray tube display instead of the light-emitting diode display common to digital readout consoles. The VRO systems compete against domestically produced and imported digital readout systems. 4/

Acu-Rite owns Metronics, Inc., Manchester NH, which produces consoles that can theoretically be used in digital readout systems for machine tools, but in practice are used in * * *. Metronics sells an * * *.

Compumotor/Spaulding.--Compumotor/Spaulding Instruments, Duarte, CA, a division of Parker Hannifin Corp., Cleveland, OH, since December 1986, produces consoles and rack-and-pinion transducers. According to * * *, "* * *." * * *. 5/ Compumotor/Spaulding had about $*** in sales at its peak in * * *; sales of consoles and transducers * * *. He said that there is no * * *; imports from Japan currently have higher prices. * * * and * * * have low prices.

D-ANN.--D-ANN Manufacturing, Inc., Winsted, CT, was formed in late 1985/early 1986 when the console-producing operations of Dynamics Research Corp., Wilmington, MA, were sold to a new entity, D-ANN. D-ANN currently produces consoles as well as transducers. The etched glass for its transducers is * * *.

1/ On Jan. 18, 1988, Acu-Rite provided a brief letter in support of the petition; the letter is contained in exhibit 1A of the petition. In addition, on Apr. 21, 1988, Acu-Rite provided a supplementary letter of support; the letter appears in app. D of this report.

2/ Dr. Johannes Heidenhain GmbH also owns Heidenhain Corp., Elk Grove Village, IL, a U.S. importer of digital readout sytems or subassemblies thereof that also has assembly facilities in the United States. * * * stated * * * that * * *.

3/ Acu-Rite also * * *.

4/ According to * * *.

* * * indicated that VROs are sold in a different market from that of DROs.

5/ However, he questioned why the U.S. Government requires only a magnetic scale for its purchases, such scales being produced in Japan.

* * * stated that "* * *. * * *."

Dynamics Research.--Dynamics Research Corp., Wilmington, MA, produced 1/ consoles for digital readout systems until late 1985/early 1986, when it divested its digital readout system operation to D-ANN. * * * stated that * * *. They had two divisions, of which one produced consoles, prior to the sale. They were * * * "* * *." 2/

Dynamics Research Corp. continues to produce glass scale transducers, both linear and rotary, but according to * * *. 3/ However, its sales are quite * * *. Dynamics Research Corp. * * *. 4/ The data indicate that its domestic shipments of glass encoders, both linear and rotary, were valued at $*** in 1985, $*** in 1986; and $*** in 1987. 5/

Elm Systems.--Elm Systems Inc., Wauconda, IL, produces consoles for digital readout systems and rotary encoders for its own coordinate measuring machines. Elm Systems also produces height gauges. Elm Systems' sales of consoles are * * *. * * * said that "Anilam has a very valid case." He said that "Imports from Japan of such products caused Elm to go into bankruptcy in 1982." 6/ He said that Japan "destroyed the market, but a long time before 1985."

Farrand.--Farrand Industries, Inc., Valhalla, NY, produces consoles for digital readout systems, as well as inductosyn (registered trademark) transducers. * * * but its transducers are sold for a number of applications, including military and aerospace applications. The unit values of Farrand's consoles ($*** in 1987) and transducers ($*** in 1987) are * * * than the unit values of * * *. According to * * *, Farrand's scales "* * *." 7/ In an April 21, 1988, telephone conversation, * * * said that the digital readout systems sold by Farrand don't compete with the Japanese products.

Quality Measurement Systems.--Quality Measurement Systems Corp., Macedon, NY, is wholly owned by QMS Holding Corp., Macedon, NY. Quality Measurement Systems produces consoles and glass scale transducers for digital readout systems, and digital inspection systems, custom gauging, and software. Quality Measurement Systems' domestic shipments of consoles and transducers * * *.

1/ Dynamics Research Corp. * * * "* * *. * * *."
2/ Telephone conversation with a member of the Commission staff.
3/ * * *. * * *.
4/ * * *.
5/ * * *.
6/ Telephone conversation with a member of the Commission staff, Apr. 6, 1988.
7/ Although Farrand's transducer is different from those of all the other U.S. producers, the data for Farrand are included in the data presented in the section of this report entitled "Consideration of alleged material injury" because Farrand does sell some digital readout systems and such systems contain its transducers; a spokesman for Farrand stated in a telephone conversation that the transducers not going into digital readout systems are * * * those that do go into such systems.

Sargon.--Sargon Industries, Inc., Chatsworth, CA, an entrant into the industry in the early 1980's, produces consoles and glass scale transducers for digital readout systems. 1/ Sargon's * * *. 2/ Representatives of Sargon appeared as witnesses in support of the petition at the Commission's public conference. 3/

Southwestern Industries.--Southwestern Industries, Inc., Los Angeles, CA, produces consoles for digital readout systems as well as machine tool CNC systems in its Los Angeles facility. Its wholly owned subsidiary, Primus Mfg., Inc., San Lorenzo, PR, produces transducers and mechanical readout systems. The type of transducer produced by Primus is called a "TRAK Sensor" and is used in digital readout systems and in computerized numerical control systems. 4/ The mechanical readout system produced by Primus is called a Trav-A-Dial. It is a "stand alone" piece of equipment that performs a similar function as digital readout systems. 5/ Southwestern Industries * * * the petition in this investigation. 6/

Teledyne Gurley.--Teledyne Gurley, Troy, NY, a division of Teledyne Industries, produces glass scale transducers for digital readout systems. Teledyne Gurley's consoles for digital readout systems are produced * * *.

Tri-Onics.--Tri-Onics, Inc., Highland, IL, sells consoles and transducers for digital readout systems. * * *.. * * *. Tri-Onics' net sales of digital readout systems (excluding brackets and accessories) * * *. 7/ According to

---

1/ * * *. * * *.

2/ * * *.

3/ A representative of Sargon stated at the public conference that in early 1979, with the average price for a digital readout system at about $1,500, Sargon began to develop "a low-priced" system. "After 18 months of research and development . . . Sargon began production on a low-cost DRO. Demand exceeded sales" (transcript of the conference, p. 15).

* * *, in discussing what it stated to be a trend towards a very price-conscious market, stated that "Beginning with Sargon the low cost milling machine packages were introduced and had a tremendous impact on existing firms' marketing response. This has continued in spite of a decreased or a minimal growth market."

4/ The TRAK Sensor uses a gauge-wheel that rolls along the measured surface, and is different from the standard types of transducers produced by other firms. It is neither a glass scale nor a magnetic scale; it is somewhat akin to a rotary encoder. Southwestern Industries * * * "* * *."

5/ The Trav-A-Dial is * * *. It is an older technology. It was the industry standard through the 1960's and 1970's, * * *. Southwestern now sells about *** Trav-A-Dials per year. Data on the Trav-A-Dial * * *.

6/ In an Apr. 17, 1988, telephone conversation, * * * said that "* * *. * * *." However, he said that "* * *. * * *. He said that * * *. * * *.

* * * said that the industry has become more and more price competitive. Digital readout systems sell for * * *. Technology has helped to make this possible. However, the market is also saturated; there are fewer and fewer manual machine tools being used in the United States. The market is shrinking and competition has become more and more cutthroat. * * *. * * *.

7/ Tri-Onics * * *.

* * *, the firm has "very definitely seen encroachment on their business from Japanese firms." He mentioned competition from * * *. He also said that the market for digital readout systems peaked in the late 1970's. * * *.

U.S. importers

Eight firms accounted for all known imports of digital readout systems or subassemblies thereof during 1985-87; five of the eight importers import from Japan. The Commission sent its questionnaire to each of the 6 importers identified in the petition and also to approximately 80 other firms that were identified by the U.S. Customs Service as having imported merchandise that was classified for statistical purposes under TSUSA 710.8080, i.e., the item under which digital readout systems or subassemblies thereof presumably are classified. All the known major importers provided data in response to the Commission's questionnaire. The importers and their respective shares of imports in 1987 are presented in table 2.

Table 2
Consoles and transducers for digital readout systems: U.S. importers and their shares of the quantity of U.S. imports from Japan and from all sources, 1987 1/

*	*	*	*	*	*	*

1/ * * *.

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

Each of the U.S. importers of digital readout systems or subassemblies thereof are discussed below.

Anilam.--As mentioned in the section of this report entitled "U.S. producers," Anilam Electronics Corp., Miami, FL, the petitioner in this investigation, imports transducers from * * *; *** percent of its transducers were imported from * * * during 1985-87.

Fagor.--Fagor Automation Corp., formerly known as Aurki Corp., Elk Grove Village, IL, imports digital readout systems or subassemblies thereof from its parent company, Aurki S. Coop. Ltda., Mondragon, Spain. Fagor imports and resells transducers and consoles, and has also imported * * *. Its U.S. sales of the subject products are used "* * *." Fagor also stated in its response that "* * *."

Futaba.--Futaba Corp. of America, Compton, CA, is wholly owned by Futaba Corp. in Japan. Futaba imports consoles and glass scale transducers for digital readout systems. 1/

1/ Futaba also imports * * *.

Heidenhain.--Heidenhain Corp., Elk Grove Village, IL, is wholly owned by Dr. Johannes Heidenhain GmbH, Traunreut, West Germany, and is a sister company to Acu-Rite, Inc., Jamestown, NY, * * *. Heidenhain Corp. * * *, and assembles * * * of its transducers * * * in Elk Grove Village, with about a *** percent value added in the United States. Heidenhain * * *. 1/ Heidenhain reportedly competes in the high end of the market for digital readout systems. * * *. 2/

MTI.--MTI Corp., Paramus, NJ, was * * *. MTI is * * *. MTI imports consoles and glass scale transducers produced by Mitutoyo Mfg. Co., Ltd., for digital readout systems. 3/

According to * * *, in July 1987, it began a "* * * assembly operation * * * linear scales (transducers) in Plymouth, Michigan, * * *." In its U.S. operation in 1987, MTI expended $*** for imported raw materials, $*** for domestically produced raw materials, $*** for direct labor costs (including training costs and expenses), and $*** for other assembly costs, including * * * assembly costs and depreciation and amortization. * * *.

Nikon.--Nikon, Inc, Garden City, NY, is wholly owned by Nikon Americas Inc., Garden City, NY. Nikon has imported consoles and transducers produced by Nippon Kogaku K.K., Tokyo, Japan. 4/ The transducers imported by Nikon consist principally of * * *. * * * Nikon's imports of consoles and transducers have been used in * * *; accordingly, Nikon's imports * * *. 5/ Nikon began to * * *.

Sokki.--Sokki Electronics U.S.A., Inc., Des Plaines, IL, is *** percent owned by Sokkisha Co., Ltd., Tokyo, Japan, and *** percent owned by Sokki Electronics Corp. of the same address as Sokkisha in Tokyo. 6/ Since it began operations in February 1985, Sokki Electronics U.S.A. imported consoles, magnetic scale transducers, and * * * produced by Sokki Electronics Corp. in Japan. 7/ Sokki Electronics U.S.A., Inc., then sells the material to distributors and OEM's in the United States. Most of Sokki's imports of consoles and glass scale transducers are sold for * * *.

1/ * * *. * * *. * * *. * * *. * * *. * * *.
2/ According to * * *. * * *.
3/ MTI also imports * * *.
4/ Nikon also imported * * *.
5/ Nikon's imports of consoles amounted to *** units, valued at $***, in 1985; *** units, valued at $***, in 1986; and * * *. Nikon's imports of transducers amounted to *** units, valued at $***, in 1985; *** units, valued at $***, in 1986; and *** transducers, valued at $***, in 1987.
6/ * * *.
7/ Sokki also imports * * *.

Sony Magnescale.--Sony Magnescale America, Inc., Orange, CA, known as National Machine Systems until April 1, 1988, 1/ imported consoles and magnetic scale transducers 2/ for digital readout systems during 1985-87. The magnetic scale transducers imported by Sony Magnescale are far more costly than the glass scale transducers that comprise most of the U.S. market for transducers for digital readout systems, but may be purchased by customers in lieu of such glass scales. 3/ Approximately *** percent of all transducers imported into the United States by Sony Magnescale in 1987 were sold for use in CNC's. 4/

Channels of distribution

Digital readout systems and subassemblies are sold to both distributors and original-equipment manufacturers. The majority of digital readout systems are sold to distributors for resale to the retrofit market; machine shop owners purchase digital readout systems from distributors and install them on machines that are already in place in the factory. Distributors generally stock a variety of consoles and transducers and sell complete digital readout systems that fill the specific need of the machine shop owner or machine manufacturer. Some sales are made directly to original-equipment manufacturers, e.g., mill machine manufacturers, which install the digital readout systems on the new machines and sell the machines to mill shops.

U.S. producers and importers were requested to report the number of transducers and of consoles that were shipped to distributors and directly to original-equipment manufacturers and end users. In 1987, 72 percent of the consoles and 50 to 55 percent of the transducers sold by producers in the domestic market were sold to distributors. Questionnaire responses from importers of the subject products from Japan indicate that the channels of distribution are similar to those of the domestic products. In 1987, * * *.

Subassemblies of digital readout systems, i.e., consoles and transducers, can be sold as separate pieces. Distributors who purchase these subassemblies separately usually do not mix a console of one producer with a transducer of another. 5/ Although it is sometimes possible to combine components of

---

1/ As of Apr. 1, 1988, * * * National Machine Systems' assets were purchased by Sony Magnescale America, Inc., a wholly owned subsidiary of Sony Magnescale, Inc., of Japan.
2/ It also imported * * *.
3/ * * * "* * *. * * *."
4/ Sony Magnescale reported to the Commission its imports of transducers sold for use in digital readout systems and also its imports of transducers sold for use in CNC's. The U.S. Department of Commerce, in its notice of initiation, excluded from the scope of this investigation subassemblies of digital readout systems, and parts thereof, that are not dedicated exclusively for use in the manufacture or production of digital readout systems.
5/ Transcript of the conference, p. 37, and staff interview with * * *, Apr. 14, 1988.

different producers, these components are not always compatible. Although warranties are generally supplied by the manufacturer, the distributors are the link between the producer and the end user. Thus, if problems occur, the distributor is responsible for determining which part caused the problem in order to notify the manufacturer that is responsible.

In response to the question in the Commission's questionnaire "Are the majority of your firm's sales of digital readout systems made as packages?," five producers, * * *, answered "Yes," and three producers, * * *, answered "No." Of the * * * importers from Japan, * * * responded "Yes," * * * responded "Yes (* * *)," and * * * and * * * responded "No."

Consideration of Alleged Material Injury

In order to gather data on the question of material injury to the U.S. industry producing digital readout systems or subassemblies thereof, questionnaires were sent to the six firms listed in the petition as current producers and to five additional firms listed in appendix 11 of the petition as having produced the subject products in 1980. Questionnaires were also sent to 14 other firms believed to be possible producers; names of these firms were obtained from the Thomas Register and from other sources. Ten of the 11 firms named in the petition as current or past producers provided data in response to the Commission's questionnaire; the remaining firm provided some data via telephone, as did * * *. Accordingly, the data appearing in this section of the report represent the great bulk (perhaps close to 100 percent) of the U.S. industry producing digital readout systems or subassemblies thereof during the period covered by this investigation.

U.S. capacity, production, and capacity utilization

Capacity.--The capacity data presented herein are somewhat inexact for a number of reasons. In some cases the data provided to the Commission are the result of allocations made by firms that produce other products on the same equipment. In some cases capacity data are difficult to determine because capacity depends on the extent to which subassemblies are contracted out by the producing firms. In some cases firms reported substantially higher capacity than production because once the machinery and equipment to produce the subject products is in place, there are few practical constraints to the production of substantial additional product if extra shifts are added. Moreover, the reported capacity data may be influenced by shifts in the mix within the types of consoles or transducers produced.

U.S. producers' capacity to produce consoles decreased by 1.1 percent in 1986 and increased by 13.5 percent in 1987 (table 3). The reported increase in capacity in 1987 is * * *. * * * reported a capacity increase of *** consoles owing to * * *. * * * reported a capacity increase of *** consoles owing to * * *. * * * reported a capacity increase of *** consoles owing to * * *; * * *.

Table 3
Consoles and transducers for digital readout systems: U.S. producers' average-for-period capacity, production, and capacity utilization, 1985-87

Item	1985	1986	1987
Consoles:			
Capacity:			
Units	53,699	53,099	60,249
Percentage change	-	-1.1	13.5
Production:			
Units	23,942	21,628	24,981
Percentage change	-	-9.7	15.5
Capacity utilization (percent)	44.6	40.7	41.5
Transducers:			
Capacity:			
Units	158,088	158,088	172,888
Percentage change	-	-	9.4
Production:			
Units	43,385	41,198	45,406
Percentage change	-	-5.0	10.2
Capacity utilization (percent)	27.4	26.1	26.3

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

U.S. producers' capacity to produce transducers remained constant in 1986 and increased by 9.4 percent in 1987. The reported increase in capacity in 1987 is * * *. * * * has the largest capacity, amounting to * * *.

Production.--Reported U.S. production of consoles for digital readout systems decreased by 9.7 percent in 1986 and increased by 15.5 percent in 1987 to a level 4.3 percent above that of 1985. Production data for each of the reporting producers are presented in table 4.

Table 4
Consoles and transducers for digital readout systems: U.S. production, by products and by firms, 1985-87

* * * * * * *

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

Production by * * *. Aggregate production for the * * * other reporting producers decreased by *** percent in 1986 and increased by *** percent in 1987 to a level *** percent below that of 1985.

Reported U.S. production of transducers for digital readout systems decreased by 5.0 percent in 1986 and increased by 10.2 percent in 1987 to a level 4.7 percent above that of 1985. Production by * * *. Aggregate production for the five other reporting producers of transducers increased by *** percent in 1986 and decreased by *** percent in 1987 to a level *** percent below that of 1985.

Capacity utilization.--U.S. producers' aggregate capacity utilization to produce consoles decreased from 44.6 percent in 1985 to 40.7 percent in 1986, and then increased to 41.5 percent in 1987. Capacity utilization to produce transducers decreased from 27.4 percent in 1985 to 26.1 percent in 1986, and increased slightly to 26.3 percent in 1987. Capacity utilization during 1985-87 varied substantially by producer; some of the smaller producers reported extremely low capacity utilization rates (under 10 percent), but indicated that such rates were realistic, given the equipment that they had in place. Capacity utilization for * * *.

Establishment product lines.--The Commission's questionnaire sent to producers asked these firms to report whether they produced other than digital readout systems on the same equipment and machinery used in the production of digital readout systems. Five firms (* * *) responded "yes," four (* * *) responded "no," and one (* * *) did not answer the question. Of the five firms responding "yes," * * *.

U.S. producers' shipments

All reported U.S. producers' shipments of consoles and transducers for digital readout systems during 1985-87 consisted of domestic commercial shipments and of export shipments. There were no domestic intracompany transfers of consoles or transducers.

Domestic shipments.--U.S. producers' domestic shipments of consoles for digital readout systems decreased in quantity by 9.4 percent in 1986 and by 7.4 percent in 1987 to a level 16.1 percent below the 1985 level (table 5); the trend in the value of shipments was the same. Of the two major producers, * * *. * * *. The unit value of U.S. producers' domestic shipments of consoles increased by 2.0 percent in 1985 and by 2.2 percent in 1987. Unit values are influenced by shifts in the mix of consoles shipped.

U.S. producers' domestic shipments of transducers increased in quantity by 1.7 percent in 1986 and decreased by 9.8 percent in 1987 to a level 8.2 percent below the 1985 level. * * *. The value of U.S. producers' domestic shipments of transducers increased in 1986 and decreased in 1987. The unit value of U.S. producers' domestic shipments of transducers for digital readout systems increased by 1.2 percent in 1985 and by 6.1 percent in 1987. Unit values are influenced by shifts in the mix of transducers shipped.

Table 5
Consoles and transducers for digital readout systems: U.S. producers' shipments, 1985-87

Item	1985	1986	1987
	Quantity (units)		
Consoles:			
Domestic shipments 1/	15,967	14,463	13,400
Export shipments	7,135	***	2/11,541
Total	23,102	***	24,941
Transducers: 3/			
Domestic shipments	33,058	33,612	30,332
Export shipments	***	***	4/***
Total	***	***	***
	Value (1,000 dollars)		
Consoles:			
Domestic shipments	9,196	8,494	8,041
Export shipments 5/	2,752	2,724	3,562
Total 5/	11,948	11,218	11,603
Transducers: 3/			
Domestic shipments	12,344	12,695	12,154
Export shipments	2,768	2,564	3,466
Total	15,112	15,259	15,620
	Unit value		
Consoles:			
Domestic shipments	$575.92	$587.27	$600.09
Export shipments	385.68	***	308.63
Average	517.18	***	465.22
Transducers:			
Domestic shipments	373.39	377.68	400.71
Export shipments	***	***	***
Average	***	***	***

1/ * * * reported the shipment of *** consoles, valued at $***, in 1986 and *** consoles, valued at $***, in 1987. These data are not included in the table because * * * have not been reported to the Commission. * * *.
2/ Includes * * *.
3/ An estimated 25 percent of these figures are transducers shipped for use in applications other than digital readout systems.
4/ Includes * * *.
5/ Includes the value of * * *.

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

In 1987, *** percent of the reported quantity of U.S. producers' domestic shipments of transducers consisted of glass scales; *** percent consisted of gauge wheel encoders; and *** percent consisted of inductosyn transducers.

Export shipments.--U.S. producers' export shipments of consoles increased in quantity by *** percent in 1986 and by *** percent in 1987 to a level 61.8 percent above the 1985 level. The principal exporters of consoles, * * *. * * *. * * *. * * *.

U.S. producers' export shipments of transducers for digital readout systems decreased in quantity by *** percent in 1986 and increased by *** percent in 1987 to a level *** percent above the 1985 level. * * *. * * *. The unit value of U.S. producers' exports of transducers for digital readout systems * * *.

Total shipments.--U.S. producers' total shipments of consoles (i.e., domestic shipments plus export shipments) decreased in quantity by *** percent in 1986 and increased by *** percent in 1987 to a level 8.0 percent above the 1985 level. U.S. producers' total shipments of transducers decreased in quantity by *** percent in 1986 and increased by *** percent in 1987 to a level *** percent above the 1985 level.

U.S. producers' purchases

Six U.S. producers reported purchases of digital readout systems or subassemblies thereof from domestic or foreign sources during 1985-87. As previously stated, Anilam imports transducers from * * * (approximately *** per year). * * *. * * *. * * *. * * *. * * *.

U.S. producers' inventories

Seven firms, accounting for 95.3 percent of U.S. production of consoles and *** percent of U.S. production of transducers in 1987, reported yearend inventory data on consoles. U.S. producers' inventories of consoles increased by 57.7 percent as of December 31, 1985, increased by 0.9 percent as of December 31, 1986, and increased by 1.7 percent as of December 31, 1987, as shown in table 6. U.S. producers' inventories of transducers decreased by 6.5 percent as of December 31, 1985, decreased by 37.3 percent as of December 31, 1986, and increased by 11.0 percent as of December 31, 1987.

The ratio of inventories of consoles to U.S. producers' total shipments in the year ending on December 31 ranged from *** to *** percent. The ratio for transducers ranged from *** to *** percent.

Employment, wages, and productivity

The * * * U.S. producers that provided employment-related data in response to the Commission's questionnaire accounted for virtually all of reported U.S. production of consoles and transducers in 1987. The number of production and related workers producing digital readout systems or

Table 6
Consoles and transducers for digital readout systems: U.S. producers' yearend inventories, 1984-87

Item	Dec. 31-- 1984	1985	1986	1987
Consoles:				
Inventories (units)	1,456	2,296	2,317	2,357
Ratio of reported inventories to U.S. producers' total shipments in the preceding year (percent)	-	9.9	***	9.5
Transducers:				
Inventories (units)	4,996	4,673	2,928	3,251
Ratio of reported inventories to U.S. producers' total shipments in the preceding year (percent)	-	***	***	***

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

subassemblies thereof decreased in 1986 and increased in 1987 to a level above that of 1985 (table 7). The trend was the same for hours worked. 1/ Total wages paid and total compensation paid to such workers increased in each year. The data presented on average hourly wages for both consoles and transducers appear to show a large increase in 1986 followed by a decrease in 1987; the reason for the fluctuation is that the data * * *, which had fluctuations in the numbers of production workers relative to "related" workers, thus somewhat distorting its wage data.

In response to a question in the Commission's questionnaire, 5 U.S. producers reported that they reduced the number of production and related workers producing digital readout systems or subassemblies thereof by at least 5 percent or 50 workers during any part of the period January 1985-December 1987. * * * reported a reduction for * * * of approximately *** workers owing to "reduced sales." * * * reported an indefinite decrease of *** workers in * * * owing to "sales reduction." * * * reported indefinite reductions of *** workers in * * *; *** workers in * * *; and *** workers in * * *, owing to "production cut back." * * * reported that the only reductions made consisted of "voluntary personnel turnover and subsequent attrition." * * * reported a permanent reduction of *** employees in 1986 and *** more in 1987 owing to "sales reduction".

Only one producer, Teledyne Gurley, reported that its production workers belong to a union. Its workers belong to the United Steelworkers.

1/ Trends in the employment data may be affected by the extent to which producers subcontract for subassemblies of consoles and transducers.

Table 7
The average number of production and related workers producing digital readout systems, hours worked, wages paid, and total compensation, 1985-87

Item	1985	1986	1987
Average number of employees 1/	735	745	792
Number of production and related workers producing 1/--			
All products	373	353	391
Digital readout systems	217	204	232
Consoles 2/	112	101	117
Transducers	105	103	115
Hours worked by production and related workers producing--			
All products (1,000 hours)	657	623	715
Digital readout systems 3/ (1,000 hours)	417	402	471
Consoles 2/ (1,000 hours)	221	202	237
Transducers (1,000 hours)	190	194	229
Wages paid to production and related workers producing--			
All products (1,000 dollars)	4,994	5,312	5,914
Digital readout systems 3/ (1,000 dollars)	3,005	3,544	3,876
Consoles 2/ (1,000 dollars)	1,545	1,767	1,963
Transducers (1,000 dollars)	1,415	1,729	1,877
Average hourly wages paid to production and related workers producing--			
All products	$7.60	$8.53	$8.27
Digital readout systems 3/	7.21	8.82	8.23
Consoles	6.99	8.75	8.28
Transducers	7.45	8.91	8.20
Total compensation paid to production and related workers producing 4/--			
All products (1,000 dollars)	5,917	6,299	6,988
Digital readout systems 3/ (1,000 dollars)	3,560	4,189	4,592
Consoles 2/ (1,000 dollars)	1,826	2,093	2,315
Transducer (1,000 dollars)	1,679	2,036	2,222

1/ Includes data reported by * * *, which did not report any additional employment-related data in response to the Commission's questionnaire.
2/ Includes service personnel of * * * that also perform service functions on transducers.
3/ Data for digital readout systems are slightly greater than aggregate data for consoles and transducers.
4/ * * * was not able to report data on total compensation; its wages paid were used as a proxy for its total compensation.

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

The number of consoles produced per 1,000 hours worked remained virtually unchanged at 102 in 1985, 103 in 1986, and 102 in 1987. 1/ The number of transducers produced per 1,000 hours worked was 217 in 1985, 203 in 1986, and 192 in 1987. 2/ The productivity data may be affected by the product mix within both consoles and transducers.

Unit labor costs for consoles amounted to $80.89 in 1985, $100.27 in 1986, and $95.22 in 1987. 3/ Unit labor costs for transducers amounted to $40.65 in 1985, $51.65 in 1986, and $50.50 in 1987. 4/

Financial experience of U.S. producers

Seven producers, 5/ accounting for virtually 100 percent in 1987 of reported U.S. production of digital readout systems and subassemblies thereof, provided usable income-and-loss data on the overall operations of their establishments within which digital readout systems and subassemblies are produced, in addition to income-and-loss data on their digital readout system and subassembly operations.

Overall establishment operations.--Aggregate income-and-loss data are presented in table 8. Overall establishment sales of the reporting firms declined from $64.7 million in 1985 to $60.7 million in 1986, or by 6.1 percent, then increased by 4.1 percent to $63.2 million in 1987, a level 2.3 percent below that in 1985.

Operating income followed a similar trend; however, the swings are much greater in percentage terms. The decrease from $5.6 million in 1985 to $2.8 million in 1986 was a decline of 50.1 percent and the recovery in 1987 was by 37.7 percent, rising to $3.9 million. The 1987 level was still 31.3 percent below that experienced in 1985.

Products produced in the overall establishments in addition to digital readout systems include mechanical readout products, subassemblies for copying machines, CAD/CAM systems and software, encoders, hydrological instruments, precision optical graphic systems, and custom gauging and software. As a percentage of all products sold in the overall establishments on the basis of respective sales revenues, digital readout systems were 54.5 percent in 1985, 52.8 percent in 1986, and 51.0 percent in 1987.

1/ Based on the *** firms that reported data on production and on hours worked.
2/ Based on the *** firms that reported data on production and on hours worked.
3/ Based on the *** firms that reported data on production and on total compensation.
4/ Based on the *** firms that reported data on production and on total compensation.
5/ The seven producers are * * *.

Table 8
Income-and-loss experience of U.S. producers 1/ on the overall operations of their establishments within which digital readout systems and parts thereof are produced, accounting years 1985-87 and interim periods ended Dec. 31, 1986, and Dec. 31, 1987

Item	1985	1986	1987	Interim period ended Dec. 31 2/-- 1986	1987
	Value (1,000 dollars)				
Net sales	64,706	60,733	63,210	***	***
Cost of goods sold	39,381	36,515	38,390	***	***
Gross profit	25,325	24,218	24,820	***	***
General, selling, and administrative expenses	19,702	21,412	20,955	***	***
Operating income	5,623	2,806	3,865	***	***
Interest expense	1,317	1,282	1,138	***	***
Other income, net	268	784	743	***	***
Net income before income taxes	4,574	2,308	3,470	***	***
Depreciation and amortization included above	1,507	1,670	1,900	***	***
Cash-flow 3/	6,081	3,978	5,370	***	***
	Share of net sales (percent)				
Cost of goods sold	60.9	60.1	60.7	***	***
Gross profit	39.1	39.9	39.3	***	***
General, selling, and administrative expenses	30.4	35.3	33.2	***	***
Operating income	8.7	4.6	6.1	***	***
Net income before income taxes	7.1	3.8	5.5	***	***
	Number of firms reporting				
Operating losses	1	2	1	***	***
Net losses	2	2	0	***	***
Data	7	7	7	2	2

1/ These producers are * * *.
2/ * * *.
3/ Cash-flow is defined as net income or (loss) plus depreciation and amortization.

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

Digital readout system operations.--Aggregate income-and-loss data on digital readout system operations are presented in table 9. Similar to the sales revenue trend for overall establishment operations, digital readout systems suffered a revenue decline from 1985 to 1986 and then a recovery in 1987. The decline from 1985 to 1986 was from $35.3 million to $32.1 million, or by 9.0 percent; the increase in 1987 was less than 1.0 percent, rising to $32.2 million, or 8.5 percent less than the 1985 revenue experience.

The trend in operating income was also similar to that of overall establishment operations, with a decline of 33.8 percent from $3.6 million in 1985 to $2.4 million in 1986, and an increase of 12.5 percent in 1987 to $2.7 million. The 1987 recovery was, nonetheless, 25.5 percent below the 1985 level.

Compared with the usual range for financial ratios in other industries investigated, the digital readout systems industry has a ratio of cost of goods sold to sales that is low and a ratio of general, selling, and administrative expenses to sales that is high. As explained by two industry officials, 1/ the relatively low cost of goods sold is primarily the result of two factors; (1) products of some manufacturers are sold directly to end users, therefore, the usual discounting of sales prices is not present as in the case of sales to distributors, and (2) once an electronic item can be produced in commercial quantities, the incremental costs are low in relationship to sales price.

On the other hand, general, selling, and administrative expenses are relatively high because the sales staff performs many functions in addition to the usual sales activities. Additional duties include technical advice, installation, testing, and followup services. For the producers selling directly to end users, the gain of not discounting sales prices from bypassing distributors is offset by the expense of the required larger sales force and additional services that otherwise would be performed by the distributors.

1/ Telephone conversations on Apr. 13, 1988, with * * *, and Apr. 14, 1988, with * * *.

Table 9
Income-and-loss experience of U.S. producers 1/ on their operations producing digital readout systems, accounting years 1985-87 and interim periods ended Dec. 31, 1986, and Dec. 31, 1987

Item	1985	1986	1987	Interim period ended Dec. 31 2/-- 1986	1987
	Value (1,000 dollars)				
Net sales	35,253	32,072	32,245	***	***
Cost of goods sold	22,297	18,901	19,838	***	***
Gross profit	12,956	13,171	12,407	***	***
General, selling, and administrative expenses	9,323	10,767	9,702	***	***
Operating income	3,633	2,404	2,705	***	***
Depreciation and amortization included above	1,231	1,311	1,517	***	***
Cash-flow 3/	4,864	3,715	4,222	***	***
	Share of net sales (percent)				
Cost of goods sold	63.2	58.9	61.5	***	***
Gross profit	36.8	41.1	38.5	***	***
General, selling, and administrative expenses	26.4	33.6	30.1	***	***
Operating income	10.3	7.5	8.4	***	***
	Number of firms reporting				
Operating losses	1	1	0	***	***
Net losses	0	0	0	***	***
Data	7	7	7	2	2

1/ These producers are * * *.
2/ * * *.
3/ Cash-flow is defined as operating income or (loss) plus depreciation and amortization.

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

Console operations.--Aggregate income-and-loss data are presented in table 10. Sales revenues increased by *** percent from 1985 to 1986, then fell by *** percent in 1987 to $*** from the $*** in 1985 and 1986. On the other hand, operating income increased throughout the period; from a loss of $*** in 1985 to profits of $*** and $*** in 1986 and 1987, respectively.

Table 10
Income-and-loss experience of U.S. producers 1/ on their operations producing consoles for digital readout systems, accounting years 1985-87 and interim periods ended Dec. 31, 1986, and Dec. 31, 1987

Item	1985	1986	1987	Interim period ended Dec. 31 2/-- 1986	1987
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
General, selling, and administrative expenses	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Depreciation and amortization included above	***	***	***	***	***
Cash-flow 3/	***	***	***	***	***
	Share of net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
General, selling, and administrative expenses	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	3	3	3	1	1

1/ These producers are * * *. The 3 producers accounted for *** percent of reported U.S. production of consoles in 1987.
2/ * * *.
3/ Cash-flow is defined as operating income or (loss) plus depreciation and amortization.

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

Transducer operations.--Aggregate income-and-loss data are presented in table 11. Unlike the revenue experience in overall establishment operations and digital readout systems, transducer revenues increased in 1986 compared with those in 1985 and decreased in 1987 to their lowest level. The 1986 level was $***, a negligible increase from $*** in 1985; it then decreased to $*** in 1987, or by *** percent from the 1986 level. Operating income, however, increased throughout the period. The net increase was *** percent, from $*** in 1985 to $*** in 1987.

Table 11
Income-and-loss experience of U.S. producers 1/ on their operations producing transducers for digital readout systems, accounting years 1985-87 and interim periods ended Dec. 31, 1986, and Dec. 31, 1987

Item	1985	1986	1987	Interim period ended Dec. 31 2/-- 1986	1987
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
General, selling, and administrative expenses	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Depreciation and amortization included above	***	***	***	***	***
Cash-flow 3/	***	***	***	***	***
	Share of net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
General, selling, and administrative expenses	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	4	4	4	1	1

1/ These producers are * * *. The 4 producers accounted for *** percent of reported U.S. production of transducers in 1987.
2/ * * *.
3/ Cash-flow is defined as operating income or (loss) plus depreciation and amortization.

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

Value of plant, property, and equipment.--The data provided by the producers on their end-of-period investment in productive facilities in which digital readout systems are produced are shown in the following tabulation (in thousands of dollars):

Item	1985	1986	1987	Interim period ended Dec. 31--1986	Interim period ended Dec. 31--1987
Original cost	4,169	5,231	6,333	***	***
Book value	3,128	3,537	3,847	***	***
Number of firms reporting	6	6	6	2	2

Capital expenditures.--The data provided by the producers relative to their capital expenditures for land, buildings, and machinery and equipment used in the manufacture of digital readout systems are shown in the following tabulation (in thousands of dollars):

Item	1985	1986	1987	Interim period ended Dec. 31--1986	Interim period ended Dec. 31--1987
Land and land improvements	-	-	95	***	***
Building or leasehold improvements	40	52	221	***	***
Machinery, equipment, and fixtures	408	347	983	***	***
Total	448	399	1,299	***	***
Number of firms reporting	5	5	5	2	2

Research and development expenses.--Research and development expenses relating to digital readout systems for the producers are shown in the following tabulation (in thousands of dollars):

1985	1986	1987	Interim period ended Dec. 31--1986	Interim period ended Dec. 31--1987
683	794	1,008	***	***

Rate of return on total assets.--Operating income as a rate of return on total assets is shown in the following tabulation (in thousands of dollars):

	1985	1986	1987
Overall establishments:			
Operating income (1,000 dollars).....	5,623	2,806	3,865
Total assets (1,000 dollars).....	48,694	49,548	51,512
Rate of return (percent).....	11.5	5.7	7.5
Digital readout systems:			
Operating income (1,000 dollars).....	3,633	2,404	2,705
Total assets 1/ (1,000 dollars).....	29,860	33,502	33,805
Rate of return (percent).....	12.2	7.2	8.0
Industry: 2/			
Rate of return on total assets after taxes (percent).....	8.5	6.2	11.7

1/ Based on the ratio of the book value of digital readout system fixed assets to the book value of overall establishment fixed assets.
2/ Electronic Industrial Controls, Dun & Bradstreet, Industry Norms and Key Business Ratios, SIC 3622. The Commission did not collect data on net income after taxes; therefore, the rates are not comparable but are presented for industry trend analysis.

Capital and investment.--The Commission requested U.S. producers to describe any actual or potential negative effects of imports of digital readout systems or subassemblies thereof from Japan on their firms' growth, investment, and ability to raise capital. Their responses are shown in Appendix E.

Consideration of the Question of Threat of Material Injury

Section 771(7)(F)(i) of the Tariff Act of 1930 (19 U.S.C. § 1677(7)(F)(i)) provides that--

> In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of any merchandise, the Commission shall consider, among other relevant factors 1/--
>
> > (I) If a subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the subsidy is an export subsidy inconsistent with the Agreement),

1/ Section 771(7)(F)(ii) of the act (19 U.S.C. § 1677(7)(F)(ii)) provides that "Any determination by the Commission under this title that an industry in the United States is threatened with material injury shall be made on the basis of evidence that the threat of material injury is real and that actual injury is imminent. Such a determination may not be made on the basis of mere conjecture or supposition."

(II) any increase in production capacity or existing unused capacity in the exporting country likely to result in a significant increase in imports of the merchandise to the United States,

(III) any rapid increase in United States market penetration and the likelihood that the penetration will increase to an injurious level,

(IV) the probability that imports of the merchandise will enter the United States at prices that will have a depressing or suppressing effect on domestic prices of the merchandise,

(V) any substantial increase in inventories of the merchandise in the United States,

(VI) the presence of underutilized capacity for producing the merchandise in the exporting country,

(VII) any other demonstrable adverse trends that indicate the probability that the importation (or sale for importation) of the merchandise (whether or not it is actually being imported at the time) will be the cause of actual injury, and

(VIII) the potential for product-shifting if production facilities owned or controlled by the foreign manufacturers, which can be used to produce products subject to investigation(s) under section 701 or 731 or to final orders under section 736, are also used to produce the merchandise under investigation.

With regard to item (I) above, no subsidies are involved in this investigation. The available data on foreign producers' operations (items (II) and (VI) above) and on the potential for "product-shifting" (item (VIII)) are presented in the section of this report entitled "Ability of foreign producers to generate exports." Information on the volume, U.S. market penetration, and pricing of imports of the subject merchandise (items (III) and (IV) above) is presented in the section of this report entitled "Consideration of the causal relationship between imports allegedly sold at LTFV and the alleged material injury or threat thereof." Available information on U.S. importers' inventories of the subject products from Japan (item (V)) is presented below.

U.S. importers' inventories

U.S. importers' inventories of consoles imported from Japan did not fluctuate significantly during the period covered by the investigation (table 12). U.S. importers' inventories of transducers imported from Japan

Table 12
Consoles and transducers for digital readout systems: U.S. importers' inventories of imports from Japan as of Dec. 31 of 1984-87

Item	Dec. 31-- 1984	1985	1986	1987
Consoles:				
Units	1,937	1,953	1,994	1,907
Percentage change	-	0.8	2.1	-4.4
As a share of imports from Japan in the preceding period (percent)	-	27.0	27.6	28.2
Transducers:				
Units	4,686	6,379	7,118	6,692
Percentage change	-	36.1	11.6	-6.0
As a share of imports from Japan in the preceding period (percent)	-	44.3	39.9	46.8

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

increased by 36.1 percent as of December 31, 1985, and by 11.6 percent as of December 31, 1986, then decreased by 6.0 percent as of December 31, 1987. Of the * * * importers reporting inventories (* * *), * * *.

U.S. importers' current orders of digital readout systems or subassemblies thereof

The Commission's questionnaire requested importers to specify whether they imported, or intended to import, digital readout systems or subassemblies thereof from Japan in 1988. * * * answered in the affirmative. Actual imports in the first three months of 1988 of * * * amounted to *** consoles and *** transducers. * * * stated that "* * *." * * * indicated that as of April 18, 1988, it had *** consoles and *** transducers on order. * * * stated that "* * *."

Ability of foreign producers to generate exports

The Commission requested counsel for the four Japanese producers of digital readout systems or subassemblies thereof listed in the petition to provide information on their clients' digital readout system operations in Japan. The information requested for consoles and transducers consisted of the number and names of producing firms; production, capacity, capacity utilization, home-market shipments, exports to the United States, exports to other major markets, and total exports, for each of the years 1985-87; projected changes in production, capacity, or capacity utilization in 1988 and 1989; and intentions or projections as to the quantity of exports to the United States and to other major markets in 1988 and 1989. Similar data were

requested by the Commission from the U.S. Embassy in Tokyo. Information received on the firms in Japan is presented below.

The four firms listed in the petition, Futaba Corp., Tokyo; Mitutoyo Mfg. Co., Ltd., Tokyo; Sokki Electronics Corp., Tokyo; and Sony Magnescale Inc., Tokyo, are known to produce digital readout systems or subassemblies thereof in Japan and export to the United States. Three additional firms have also produced minor quantities of the subject products, according to a U.S. Department of State telegram to the Commission: Keihin Densokuki K.K., Tokyo; Macome Corp., Tokyo; and Nikon Corp., Tokyo. 1/ Aggregate data for * * * are presented in table 13.

Production, capacity, capacity utilization, and all other reported data on consoles decreased in 1986, except for exports, which increased. The indicators all increased in 1987, except for home-market shipments. As a ratio to its total reported shipments of consoles, Japan's reported exports of consoles to the United States were 13.7 percent in 1985, 16.0 percent in 1986, and 16.4 percent in 1987.

The reported data on transducers decreased in 1986, except for exports, which increased. Production, capacity, home-market shipments, export shipments to the United States, and total shipments all decreased in 1987. As a ratio to its total reported shipments of transducers, Japan's reported exports of transducers to the United States were 15.5 percent in 1985, 17.7 percent in 1986, and 16.5 percent in 1987.

Consideration of the Causal Relationship Between Imports Allegedly Sold at LTFV and the Alleged Material Injury or Threat Thereof

U.S. imports

Data on U.S. imports reported herein are based on responses to the Commission's questionnaire sent to importers. All known U.S. importers of digital readout systems or subassemblies thereof provided data in response to the Commission's questionnaire. 2/ Official import statistics of the U.S. Department of Commerce could not be used to report imports of digital readout systems and subassemblies thereof because the TSUSA item under which such products are reported for statistical purposes also contains many products other than the subject products. The data on imports reported herein consist of data on consoles and on transducers. None of the importers from Japan reported imports of complete systems.

1/ Exports to the United States of digital readout systems or subassemblies thereof of Nikon Corp, known as Nippon Kogaku K.K. prior to Apr. 1, 1988, have * * *. * * *.

2/ * * *.

Table 13
Consoles and transducers for digital readout systems: Salient data on the industry in Japan, 1/ 1985-87, and projections for 1988 and 1989

Item	1985	1986	1987	1988	1989
Consoles:					
Production (units)	50,050	39,513	43,658	45,565	48,813
Capacity 2/ (units)	***	***	***	***	***
Capacity utilization 3/ (percent)	***	***	***	***	***
Yearend inventories (units)	7,995	5,682	7,135	4/	4/
Shipments:					
Home market (units)	27,074	19,372	17,057	20,994	24,253
Exports--					
To the United States (units)	6,690	6,703	6,885	7,568	6/***
To all other countries 5/ (units)	15,021	15,751	18,163	17,238	6/***
Total (units)	48,785	41,826	42,105	45,800	***
Transducers:					
Production (units)	111,111	97,022	94,128	104,473	114,032
Capacity (units)	119,511	107,711	99,811	104,473	114,132
Capacity utilization (percent)	93.0	90.1	94.3	100.0	99.9
Yearend inventories (units)	11,793	10,425	10,953	4/	4/
Shipments:					
Home market (units)	60,428	43,297	39,245	50,168	58,499
Exports--					
To the United States (units)	17,120	17,430	15,375	14,114	6/***
To all other countries 7/ (units)	33,025	37,563	38,680	40,244	6/***
Total (units)	110,573	98,290	93,300	104,526	***

1/ Consists of aggregate data of * * *.
2/ Only *** firms reported capacity data for consoles.
3/ Based on the *** firms that reported capacity data.
4/ Not available.
5/ Principal destinations are * * *.
6/ Only *** firms reporting.
7/ Principal destinations are * * *.

Source: Information supplied by counsel for producers in Japan and by telegrams of the U.S. Department of State.

The quantity of U.S. imports of consoles from Japan decreased by 0.1 percent in 1986, and by 6.3 percent in 1987 to a level 6.4 percent below that of 1985 (table 14). The value of U.S. imports of consoles from Japan decreased by 4.5 percent in 1986, and by 6.4 percent in 1987 to a level 10.7 percent below that of 1985. The unit value decreased from $437.06 in 1985 to $417.78 in 1986 and $417.01 in 1987.

Table 14
Consoles and transducers for digital readout systems: U.S. imports, by products and by importers, 1/ 1985-87

Item	1985	1986	1987
	Quantity (units)		
Consoles:			
Japan:			
* * * *	*	*	*
Subtotal	7,221	7,212	6,760
Other countries	***	***	***
Total	***	***	***
Transducers:			
Japan:			
* * * *	*	*	*
Subtotal	14,385	17,855	14,299
Other countries	***	***	***
Total	***	***	***
	Value (1,000 dollars) 2/		
Consoles:			
Japan:			
* * * *	*	*	*
Subtotal	3,156	3,013	2,819
Other countries	***	***	***
Total	***	***	***
Transducers:			
Japan:			
* * * *	*	*	*
Subtotal	3,661	4,462	3,405
Other countries	***	***	***
Total	***	***	***

See footnotes at end of table.

Table 14--Continued
Consoles and transducers for digital readout systems: U.S. imports, by products and by importers, 1/ 1985-87

Item	1985	1986	1987
	Unit value		
Consoles:			
Japan:			
* * * *	*	*	*
Average	$437.06	$417.78	$417.01
Other countries	***	***	***
Average	***	***	***
Transducers:			
Japan:			
* * * *	*	*	*
Subtotal	254.50	249.90	238.13
Other countries	***	***	***
Average	***	***	***

1/ The importers covered in this table are * * *.
2/ Landed, duty-paid value.

Note--Sony Magnescale was known as National Machine Systems until Apr. 1, 1988. The data presented for Sony Magnescale's imports of transducers in the table consist only of Sony's estimates of its transducers that were imported and ultimately sold for use in digital readout systems. Sony Magnescale's imports of transducers ultimately sold for use in CNC systems amounted to *** units, valued at $***, in 1985; *** units, valued at $***, in 1986; and *** units, valued at $***, in 1987.

Source: Compiled from responses to questionnaires of the U.S. International Trade Commission.

The quantity of U.S. imports of transducers from Japan increased by 24.1 percent in 1986, and decreased by 19.9 percent in 1987 to a level 0.6 percent below that of 1985. 1/ The value of U.S. imports of transducers from Japan increased by 21.8 percent in 1986, and decreased by 23.7 percent in 1987 to a level 7.0 percent below that of 1985. The unit value decreased from $254.50 in 1985 to $249.90 in 1986 and $238.13 in 1987.

The quantity of U.S. imports of glass scale transducers from Japan, i.e., transducers imported by * * *, * * *. The quantity of U.S. imports of magnetic scale transducers from Japan, i.e., transducers imported by Sokki

1/ If the quantity of Sony Magnescale's imports of transducers that were ultimately sold for use on CNC's is included, then the quantity of U.S. imports of transducers from Japan * * *.

and Sony Magnescale (counting only those imports of Sony that were sold for use in digital readout systems), * * *. 1/

The quantity of U.S. imports of consoles from all sources increased by *** percent in 1986 and decreased by *** percent in 1987. The value of U.S. imports of consoles from all sources decreased by *** percent in 1986 and by *** percent in 1987. The unit value decreased from $*** in 1985 to $*** in 1986 and $*** in 1987.

The quantity of U.S. imports of transducers from all sources increased by *** percent in 1986 and decreased by *** percent in 1987. The value of U.S. imports of transducers from all sources increased by *** percent in 1986 and decreased by *** percent in 1987. The unit value decreased from $*** in 1985 to $*** in 1986, and increased to $*** in 1987.

Market penetration of imports

U.S. imports of consoles from Japan accounted for 31.0 percent of the quantity of domestic consumption of consoles in 1985, 33.0 percent in 1986, and 33.3 percent in 1987 (table 15). The trend for the market penetration of overall imports was the same.

U.S. imports of transducers from Japan accounted for 26.3 percent of the quantity of domestic consumption of transducers in 1985, 29.6 percent in 1986, and 26.2 percent in 1987. 2/3/ The share of domestic consumption accounted for by U.S. imports from countries other than Japan was * * *.

1/ If the quantity of Sony Magnescale's imports of transducers that were ultimately sold for use on CNC's is included, then the quantity of U.S. imports of magnetic scale transducers from Japan * * *.
2/ If the quantity of Sony Magnescale's imports and shipments of transducers that were ultimately sold for use on CNC's is included, the market penetration of U.S. imports of transducers from Japan was *** percent in 1985, *** percent in 1986, and *** percent in 1987.
3/ If Farrand's transducers are excluded from domestic shipments and consumption, the resulting market penetration ratios of imports from Japan are *** percent in 1985, *** percent in 1986, and *** percent in 1987.

Table 15
Consoles and transducers for digital readout systems: U.S. producers' and importers' domestic shipments and market penetration of imports, 1985-87

Item	1985	1986	1987
	Quantity (units)		
Consoles:			
U.S. producers' domestic shipments..	15,967	14,463	13,400
U.S. importers' domestic shipments:			
Imports from Japan.....	***	***	***
Imports from all other countries..	***	***	***
Total domestic consumption.....	23,325	21,845	20,300
Transducers:			
U.S. producers' domestic shipments..	33,058	33,612	30,332
U.S. importers' domestic shipments:			
Imports from Japan 1/.....	***	***	***
Imports from all other countries 2/.....	***	***	***
Total domestic consumption 3/...	54,763	60,232	54,556
	Value (1,000 dollars)		
Consoles:			
U.S. producers' domestic shipments..	9,196	8,494	8,041
U.S. importers' domestic shipments:			
Imports from Japan.....	***	***	***
Imports from all other countries..	***	***	***
Total domestic consumption.....	13,673	13,018	11,982
Transducers:			
U.S. producers' domestic shipments..	12,344	12,695	12,154
U.S. importers' domestic shipments:			
Imports from Japan.....	***	***	***
Imports from all other countries 2/.....	***	***	***
Total domestic consumption.....	19,583	21,200	20,407
	Share, by quantity (percent) 4/		
Consoles:			
Imports from Japan.....	31.0	33.0	33.3
Imports from all other countries....	***	***	***
Total.....	***	***	***
Transducers:			
Imports from Japan 5/.....	26.3	29.6	26.2
Imports from all other countries....	***	***	***
Total.....	***	***	***

See footnotes at end of table.

Table 15--Continued
Consoles and transducers for digital readout systems: U.S. producers' and importers' domestic shipments and market penetration of imports, 1985-87

Item	1985	1986	1987
	Share, by value (percent) 4/		
Consoles:			
Imports from Japan	23.1	23.1	23.5
Imports from all other countries	***	***	***
Total	***	***	***
Transducers:			
Imports from Japan	18.7	21.0	16.7
Imports from all other countries	***	***	***
Total	***	***	***

1/ If the quantity of Sony Magnescale's shipments of transducers that were ultimately sold for use on CNC's is included, then U.S. importers' domestic shipments of imports of transducers from Japan would amount to *** units in 1985, *** units in 1986, and *** units in 1987.
2/ * * *.
3/ If the quantity of Sony Magnescale's shipments of transducers that were ultimately sold for use on CNC's is included, then domestic consumption of transducers would amount to *** units in 1985, *** units in 1986, and *** units in 1987.
4/ Consists of imports as reported in table 14 divided by the domestic consumption data developed in this table.
5/ If the quantity of Sony Magnescale's imports and shipments of transducers that were ultimately sold for use on CNC's is included, then the market penetration of U.S. imports of transducers from Japan would amount to *** percent in 1985, *** percent in 1986, and *** percent in 1987.

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

Prices

Since digital readout systems are sold to both distributors and to original-equipment manufacturers, the demand for digital readout systems depends on the demand for the machines that are equipped with them and on the desire of machine shop owners to upgrade their machines.

Digital readout systems consist of an electronic console and one measurement transducer for each axis of measurement. The price of a digital readout system is generally determined by the sum of the prices of the individual components; therefore, the price of a system depends upon several factors. The price of a digital readout system increases as the number of

transducers required increases. The type of transducer that is used also affects the price of the system. Glass scale transducers, the most common type used in digital readouts, are less expensive than magnetic or laser transducers and are generally accepted in all work environments. Some purchasers are willing to pay the price differential for magnetic or laser transducers in order to get a higher degree of accuracy. The length and the resolution of the transducer also affects the price of the transducer and thus, also, the price of a digital readout system. Transducers that are longer and more accurate (i.e., higher resolution) cost more than those that are shorter and less accurate.

The type of console that is used also affects the price of a digital readout system. Consoles are made to interface with one, two, or three transducers and as the number of transducers increases so does the price of the console. U.S. producers and importers provide a variety of consoles that are differentiated by the complexity of the functions that can be performed. The price of the console increases as more features, such as additional memory or the ability to perform simple mathematical calculations, are added. The most common type of console that is sold by both U.S. producers and importers is a two-axes console with standard features such as inch/metric conversion, absolute incremental conversion, correction factor, and presetting for one memory location.

Hardware for mounting the digital readout system to a machine is sometimes included in the price of the digital readout system but is itemized separately on the invoice. U.S. producers do not usually provide installation services. Distributors sometimes install the digital readout system on the machines for their customers, and OEM's that purchase directly from the manufacturer install the digital readout systems themselves. If the manufacturer or the distributor performs the installation, there is a separate charge that can range anywhere from approximately $*** to $***. Because installation requires an additional fee, many machine shop owners attach the digital readout systems to the machines themselves. 1/

Prices are quoted by both U.S. producers and importers on an f.o.b. basis, with the customer paying the delivery charges. Transportation is not an important factor, accounting for approximately 2-7 percent of the total delivered prices. Actual transaction prices are generally discounted from published list prices, with the discount to distributors ranging from *** to *** percent of the list price.

The Commission requested price data from U.S. producers and importers of digital readout systems for each firm's largest sale to distributors and largest sale to OEM's for each quarter during the period January 1985 to December 1987. 2/ Price data were requested for both sales of digital readout systems as packages (one price for the console and transducers), and for sales

---

1/ Telephone interview with * * * on Apr. 14, 1988.
2/ Price data received for sales to OEM's were very sparse; therefore only price data concerning sales to distributors are discussed in this section.

of the subassemblies sold separately. The products selected are considered to be standard by both U.S. producers and importers and are listed below:

PRODUCT 1: Digital readout system containing a 12-inch measuring length glass scale transducer with 10 micro meter resolution, a 30-inch measuring length glass scale transducer with 10 micro meter resolution, and a two-axes console with inch/metric conversion, absolute incremental conversion, correction factor, and 1 memory location for presetting.

PRODUCT 2: Digital readout system containing a 12-inch measuring length glass scale transducer with 10 micro meter resolution, a 36-inch measuring length glass scale transducer with 10 micro meter resolution, and a two-axes console with inch/metric conversion, absolute incremental conversion, correction factor, and 1 memory location for presetting.

PRODUCT 3: Glass scale transducer of 12-inch measuring length with 10 micro meter resolution.

PRODUCT 4: Glass scale transducer of 30-inch measuring length with 10 micro meter resolution.

PRODUCT 5: Glass scale transducer of 36-inch measuring length with 10 micro meter resolution.

PRODUCT 6: Two-axes console with inch/metric conversion, absolute incremental conversion, correction factor, and one memory location for presetting.

Questionnaires with usable price data were received from four U.S. producers: * * *. Two of these producers, * * *, were unable to provide any price data for transducers and consoles sold separately. 1/ * * * of Japanese digital readout systems, provided price data for sales of subassemblies (products 3-6) separately for each quarter during the period of investigation; however, * * * was only able to submit data for digital readouts sold as a package in 1986. 2/ The products for which price data were collected represent *** percent of domestic shipments of consoles and *** percent of transducers in 1987. These consoles and transducers accounted for *** and *** percent, respectively, of imports from Japan in 1987. The data are presented in tables 16-20.

Price trends--Weighted-average prices for U.S.-produced digital readout systems, sold as packages (Product 1 and 2), 3/ fluctuated during the period

---

1/ Although * * * was able to provide sales prices of subassemblies, the majority of * * *'s sales are made as packages.

2/ Other importers that supplied price data were * * *. * * *. These prices are not included due to the fact that they differ from the glass scale transducers for which price data were collected from the other producers and importers.

3/ See the product definitions listed above.

Table 16
Weighted-average f.o.b. prices reported by U.S. producers and importers of the Japanese product for sales to distributors of product 1, a digital readout system containing a 12-inch glass scale transducer with 10 micro meter resolution, a 30-inch glass scale transducer with 10 micro meter resolution, and a two-axes console with inch/metric conversion, correction factor, and 1 memory location for presetting, by quarters, January 1985-December 1987

* * * * * * *

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

Table 17
Weighted-average f.o.b. prices reported by U.S. producers and importers of the Japanese product for sales to distributors of product 3, 12-inch glass scale transducers with a 10 micro meter resolution, by quarters, January 1985-December 1987

* * * * * * *

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

Table 18
Weighted-average f.o.b. prices reported by U.S. producers and importers of the Japanese product for sales to distributors of product 4, 30-inch glass scale transducers with a 10 micro meter resolution, by quarters, January 1985-December 1987

* * * * * * *

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

Table 19
Weighted-average f.o.b. prices reported by U.S. producers and importers of the Japanese product for sales to distributors of product 5, 36-inch glass scale transducers with a 10 micro meter resolution, by quarters, January 1985-December 1987

* * * * * * *

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

Table 20
Weighted-average f.o.b. prices reported by U.S. producers and importers of the Japanese product for sales to distributors of product 6, 2-axes consoles with inch/metric conversion, absolute incremental conversion, correction factor, and 1 memory location for presetting, by quarters, January 1985-December 1987

* * * * * * *

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

of investigation. 1/ U.S. producer prices for product 1 had * * *, whereas there was * * * in the weighted-average domestic prices for product 2 during the period of investigation. 2/ Weighted-average prices for U.S.-produced subassemblies of digital readout systems also fluctuated during the period of investigation. Prices for product 5, a 36-inch measuring length glass scale transducer with 10 micro meter resolution, had an overall * * * and prices for product 3, a 12-inch glass scale transducer with 10 micro meter resolution, * * *. Domestic prices for product 4, a 30-inch transducer with 10 micro meter resolution, and product 6, a two-axes console, had * * * respectively.

Prices for digital readout systems, sold as packages, were reported by * * *. 3/ * * *'s prices for product 1 were * * * in the four quarters for

1/ All weighted-average prices are weighted by the total shipments in each quarter reported by each company for that specific product to reflect the company's approximate share of the reported shipments for that pricing item.
2/ Prices for product 2 are not presented in a table because of the lack of Japanese prices and the fact that * * *.
3/ * * *. * * *.

which prices were reported. 1/ Prices for transducers and consoles sold separately by * * * were * * * during the period of investigation. Prices for three of the four component products * * *; one product, a 36-inch transducer with 10 micro meter resolution (product 5), had an overall * * *.

Price comparisons.--Price comparisons were possible for digital readout systems sold as a package only in four quarters in 1986. Japanese prices for digital readout systems (product 1) were priced above the domestic prices in three of these four quarters, with margins ranging from *** to *** percent. In the third quarter, the Japanese product was priced *** percent lower than the domestic product.

*** U.S. producers, * * *, reported prices for sales of subassemblies and, as a result, prices could be compared in all 12 quarters for each of the four products. Japanese prices for product 3, a 12-inch glass scale transducer with 10 micro meter resolution, were below domestic prices in all 12 quarters, with margins ranging from 11 to 25 percent. Price comparisons between domestic and Japanese prices for product 4, a 30-inch glass scale transducer with 10 micro meter resolution, produced similar results, with the Japanese product priced from 5 to 23 percent less than the domestic product. For product 5, a 36-inch glass scale transducer with 10 micro meter resolution, Japanese prices were lower than domestic prices in 11 quarters, with margins ranging from 10 to 25 percent. In the third quarter of 1987, the Japanese product was priced higher than the domestic product by *** percent. Japanese prices were also lower than domestic prices for product 6, a two-axes console, in all 12 quarters, with the margins ranging from 2 to 13 percent.

Prices of Japanese magnetic transducers and digital readout systems incorporating magnetic transducers were reported by Sony Magnescale and Sokki Electronics. For all the products for which price data were requested, the prices of the magnetic transducers and corresponding consoles were higher than those for glass scale transducers. For product 1, Sony's prices were *** to *** percent higher and Sokki's were *** to *** percent higher than domestic weighted-average prices during the period of investigation. 2/ Sony's prices for products 3-6 were higher than domestic prices by *** to *** percent, *** to *** percent, *** to *** percent, and *** to *** percent, respectively. Sokki also reported prices for products 3 to 6 that were higher than domestic prices; the price differentials were as follows: product 3, *** to *** percent; product 4, *** to *** percent; product 5, *** to *** percent; and product 6, *** to *** percent.

Lost sales and lost revenues

The Commission received allegations of lost sales and lost revenues during 1987 and early 1988 from *** U.S. producers; * * * submitted 30 lost revenues allegations and 11 lost sales allegations. 3/ The lost sales

---

1/ See product definition on p. A-42.
2/ * * *.
3/ * * *. * * *.

allegations involve *** digital readout systems, valued at approximately $***. Staff contacted six of these purchasers and a summary of the information obtained follows:

* * * named * * * in a lost sales allegation involving * * *. * * *. * * * stated that * * * examined price quotes for the digital readout system from four companies, two domestic firms and two Japanese suppliers. * * * reported that price is very important in the purchasing decision and the Japanese digital readout system was purchased because the Japanese product was priced nearly 20 percent lower than the U.S. product.

* * * was named by * * * in a lost sales allegation involving * * *. A spokesman for * * * did not confirm this allegation and stated that * * * has not purchased any digital readout systems from Japanese suppliers. This spokesman reported that the company currently has * * * digital readout systems in use. All * * * of these systems were purchased from U.S. producers; * * *. The spokesman did not recall accepting any quotes from Japanese suppliers. This representative added that the quality of the * * *. and * * * systems were comparable.

* * * cited * * * in a lost sales allegation involving * * *. * * *, a spokesman for * * *, stated that the company recently purchased a digital readout system from Japanese suppliers but that this was not the first time that Japanese products had been purchased. * * * reported that, although the price of the Japanese digital readout system was lower than the comparable domestic product, price was not the main factor in the purchasing decision. * * * stated that * * * failed to provide good service, in accordance with the warranty, on * * *. * * * added that the company would purchase from * * * if * * * supplied and adhered to a better warranty. In addition to * * * and * * *, * * * has also purchased digital readout systems from * * *. * * * stated that the * * * digital readout system was of a higher quality, because of the higher degree of durability, but was also higher in price by approximately *** percent.

* * * named * * * in a lost sales allegation involving * * *. * * *, a spokesman for * * *, stated that the company did not purchase *** digital readout systems at any one time in * * *. * * * reported that * * * has purchased digital readout systems from * * * and * * *. According to * * *, until * * * all the digital readouts at * * * were purchased from * * *; however, at that time, the company began purchasing digital readout systems from * * *. * * * stated that although the price of the * * * product was higher, the product was superior in quality. * * * had experienced service problems with * * * and also found that it had to purchase more replacement parts for the * * * system than it did for the * * * system. * * * stated that * * * decision to purchase from * * * was not based solely on price; service and quality are equally as important as price in the company's purchasing decisions.

* * * named * * * in a lost sales allegation involving * * *. * * *, a spokesman for * * *, stated that the company has *** digital readout systems in use in its factory that were * * * purchased from * * *. * * * reported

* * * quoted a price of $*** on the digital readout that was purchased in * * *. * * * was aware of comparable Japanese products that were priced approximately $*** less than the * * * product. * * * stated that * * * reduced its price to $*** so that * * * would purchase * * * from * * *. * * * added that if * * * had not reduced its price, * * * would have purchased the lower priced Japanese product.

* * * was named by * * * in a lost sales allegation involving * * *. * * * alleged that it quoted a price of $*** but that * * * purchased * * * from * * * for $***. * * *, a spokesman for * * *, confirmed that the company purchased * * * from Japanese suppliers, one in * * * and the other in * * *. * * * stated that * * * did consider * * * but the company purchased the Japanese product because the price was approximately 20 percent lower than the price of the * * * system. * * * added that quality and price are both considered when making a purchasing decision, and if no difference in quality exists the lower priced product will be chosen.

Exchange rates

Quarterly data reported by the International Monetary Fund indicate that during the period January 1985 through March 1988 the value of the Japanese yen advanced sharply by 100.7 percent against the U.S. dollar (table 21). 1/ Adjusted for relative movements in producer price indices in the United States and Japan, the real value of the Japanese currency registered an overall appreciation equivalent to 68.7 percent as of the first quarter of 1988 relative to January-March 1985 levels.

1/ International Financial Statistics, April 1988.

Table 21
U.S.-Japanese exchange rates: 1/ Nominal-exchange-rate equivalents of the Japanese yen in U.S. dollars, real-exchange-rate equivalents, and producer price indicators in the United States and Japan, 2/ indexed by quarters, January 1985-March 1988

Period	U.S. Producer Price Index	Japanese Producer Price Index	Nominal-exchange-rate index	Real-exchange-rate index 3/
			----US dollars/yen----	
1985:				
January-March.....	100.0	100.0	100.0	100.0
April-June.....	100.1	98.8	102.8	101.5
July-September....	99.4	97.5	108.0	106.0
October-December..	100.0	94.7	124.4	117.8
1986:				
January-March.....	98.5	92.8	137.2	129.2
April-June.....	96.6	89.4	151.5	140.1
July-September....	96.2	87.0	165.4	149.7
October-December..	96.5	86.1	160.8	143.5
1987:				
January-March.....	97.7	85.6	168.2	147.4
April-June.....	99.2	84.9	180.6	154.5
July-September....	100.3	86.0	175.4	150.2
October-December..	100.8	89.2	189.7	167.9
1988:				
January-March 4/..	101.1	85.0	200.7	168.7

1/ Exchange rates expressed in U.S. dollars per unit of yen.
2/ Producer price indicators--intended to measure final product prices-- are based on average quarterly indices presented in line 63 of the International Financial Statistics.
3/ The indexed real exchange rate represents the nominal exchange rate adjusted for relative movements in Producer Price Indices in the United States and Japan. Producer prices in the United States increased 1.1 percent between January 1985 and March 1988 compared with a 15.0-percent decrease in Japan during the same period.
4/ Data are derived from exchange rate and Producer Price Indices reported for January-February only.

Note--January-March 1985=100.

Source: International Monetary Fund, International Financial Statistics, April 1988.

APPENDIX A

NOTICE OF THE COMMISSION'S INSTITUTION OF A PRELIMINARY ANTIDUMPING INVESTIGATION

INTERNATIONAL TRADE COMMISSION

[Investigation No. 731-TA-390 (Preliminary)]

Digital Readout Systems and Subassemblies Thereof From Japan

AGENCY: International Trade Commission.

ACTION: Institution of a preliminary antidumping investigation and scheduling of a conference to be held in connection with the investigation.

SUMMARY: The Commission hereby gives notice of the institution of preliminary antidumping investigation No. 731-TA-390 (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 Japan of digital readout systems and subassemblies thereof,[1] provided for in item 710.80 of the Tariff Schedules of the United States (TSUS) or however provided for in Parts 4 or 5 Schedule 6 or Part 2 of Schedule 7 of the TSUS, that are alleged to be sold in the United States at less than fair value. As provided in section 733(a), the Commission must complete preliminary antidumping investigations in 45 days, or in this case by May 12, 1988.

For further information concerning the conduct of this investigation and rules of general application, consult the Commission's Rules of Practice and Procedure, Part 207, Subparts A and B (19 CFR Part 207), and Part 201, Subparts A through E (19 CFR Part 201).

EFFECTIVE DATE: March 28, 1988.

FOR FURTHER INFORMATION CONTACT: George L. Deyman (202-252-1193), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-252-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-252-1000.

SUPPLEMENTARY INFORMATION:

Background

This investigation is being instituted in response to a petition filed on March 28, 1988, by Anilam Electronics Corp., Miami, FL.

Participation in the Investigation

Persons wishing to participate in this investigation as parties must file an entry of appearance with the Secretary to the Commission, as provided in § 201.11 of the Commission's rules (19 CFR 201.11), not later than seven (7) days after publication of this notice in the Federal Register. Any entry of appearance filed after this date will be referred to the Chairman, who will determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

Service List

Pursuant to § 201.11(d) of the Commission's rules (19 CFR 201.11(d)), the Secretary will prepare a service list containing the names and addresses of all persons, or their representatives, who are parties to this investigation upon the expiration of the period for filing entries of appearance. In accordance with §§ 201.16(c) and 207.3 of the rules (19 CFR 201.16(c) and 207.3), each document filed by a party to the investigation must be served on all other parties to the investigation (as identified by the service list), and a certificate of service must accompany the document. The Secretary will not accept a document for filing without a certificate of service.

Conference

The Director of Operations of the Commission has scheduled a conference in connection with this investigation for 9:30 a.m. on April 20, 1988, at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Parties wishing to participate in the conference should contact George L. Deyman (202-252-1193) not later than April 18, 1988, to arrange for their appearance. Parties in support of the imposition of antidumping duties in this investigation and parties in opposition to the imposition of such duties will each be collectively allocated one hour within which to make an oral presentation at the conference.

Written Submissions

Any person may submit to the Commission on or before April 22, 1988, a written statement of information pertinent to the subject of the investigation, as provided in § 207.15 of the Commission's rules (19 CFR 207.15). A signed original and fourteen (14) copies of each submission must be filed with the Secretary to the Commission in accordance with § 201.8 of the rules (19 CFR 201.8). All written submissions except for confidential business data will be available for public inspection during regular business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary to the Commission.

Any business information for which confidential treatment is desired must be submitted separately. The envelope

[1] Digital readout systems subject to this investigation provide linear or rotational displacement information for high precision industrial equipment such as metalworking machine tools and coordinate inspection machines. The systems generally consist of an electronic console and one measurement transducer for each axis of linear or rotational displacement to be measured. Subassemblies of digital readout systems consist of consoles or transducers sold separately, and include the major component of consoles, namely printed circuit boards, and the two major components of transducers, namely glass strips with chrome grating, and reading heads. (The article subject to this investigation are also provded for in subheadings 9031.80.00 or 9031.90.00 of the proposed Harmonized Tariff Schedules of the United States (USITC Pub. 2030).)

and all pages of such submissions must be clearly labeled "Confidential Business Information." Confidential submissions and requests for confidential treatment must conform with the requirements of § 201.6 of the Commission's rules (19 CFR 201.6).

Authority: This investigation is 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 (19 CFR 207.12).

By order of the Commission.

Kenneth R. Mason,

Secretary.

Issued: March 30, 1988.

[FR Doc. 88-7248 Filed 4-1-88; 8:45 am]

BILLING CODE 7020-02-M

APPENDIX B

CALENDAR OF WITNESSES AT THE COMMISSION'S PUBLIC CONFERENCE

CALENDAR OF PUBLIC CONFERENCE

Investigation No. 731-TA-390 (Preliminary)

DIGITAL READOUT SYSTEMS AND SUBASSEMBLIES THEREOF FROM JAPAN

Those listed below appeared at the United States International Trade Commission's conference held in connection with the subject investigation on April 20, 1988, in the Hearing Room of the USITC Building, 500 E Street, SW., Washington, DC.

In support of the imposition of antidumping duties

Honigman Miller Schwartz & Cohn--Counsel
Detroit, MI
on behalf of--

Anilam Electronics Corp.

Mr. Jay T. Malina, President, Anilam Electronics Corp.
Mr. Mitchell Tress, Executive Vice President, Anilam Electronics Corp.

Harry C. Goplerud, Esq.--OF COUNSEL

Sargon Industries, Inc.

Mr. Misha Dooman, President, Sargon Industries, Inc.
Mr. Michael Payne, Production Manager, Sargon Industries, Inc.

In opposition to the imposition of antidumping duties

Mudge Rose Guthrie Alexander & Ferdon--Counsel
Washington, DC
on behalf of--

Futaba Corp. of America

N. David Palmeter)
Teresa M. Polino) --OF COUNSEL

CALENDAR OF PUBLIC CONFERENCE--Continued

In opposition to the imposition of antidumping duties--Continued

Wilmer, Cutler & Pickering--Counsel
Washington, DC
on behalf of--

Sony Magnescale America, Inc.

Mr. Larry Sato, General Manager, Sony Magnescale America, Inc.
Mr. Richard L. Boyce, President, Econometrica International Inc.

John D. Greenwald, Esq.--OF COUNSEL

Tanaka Ritger & Middleton--Counsel
Washington, DC
on behalf of--

Mitutoyo Manufacturing Co. Ltd.
MTI Corp.

H. William Tanaka, Esq.--OF COUNSEL

Sonnenberg, Anderson, O'Donnell & Rodriguez--Counsel
Chicago, IL
on behalf of--

Sokki Electronics U.S.A., Inc.
Sokki Electronics Corp.
Sokkisha

Mr. Eitoku (Ed) Yamanaka, General Manager, Sokki Electronics U.S.A., Inc.

Paul S. Anderson, Esq.--OF COUNSEL

APPENDIX C

NOTICE OF THE DEPARTMENT OF COMMERCE'S INITIATION OF AN ANTIDUMPING INVESTIGATION, AND ITS LETTER OF CLARIFICATION CONCERNING ITS NOTICE

International Trade Administration

[A-580-803]

Initiation of Antidumping Duty Investigation; Digital Readout Systems and Subassemblies Thereof From Japan

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

ACTION: Notice.

SUMMARY: On the basis of a petition filed in proper form with the U.S. Department of Commerce, we are initiating an antidumping duty investigation to determine whether imports of digital readout systems and subassemblies thereof from Japan are being, or are likely to be, sold in the United States at less than fair value. We are notifying the U.S. International Trade Commission (ITC) of this action so that it may determine whether imports of this product materially injure, or threaten material injury to, a U.S. industry. If this investigation proceeds normally, the ITC will make its preliminary determination on or before May 12, 1988. If that determination is affirmative, we will make a preliminary determination on or before September 6, 1988.

EFFECTIVE DATE: April 22, 1988.

FOR FURTHER INFORMATION CONTACT: Raymond Busen or John Brinkmann, Office of Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone (202) 377-3464 or 377-3965.

SUPPLEMENTARY INFORMATION:

The Petition

On March 28, 1988, we received a petition in proper form filed by Anilam Electronics Corporation on behalf of U.S. producers of digital readout systems and subassemblies thereof. In compliance with the filing requirements of 19 CFR 353.36, petitioner alleges that imports of digital readout systems and subassemblies thereof from Japan 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 materially injure, or threaten material injury to, a U.S. industry.

United States Price and Foreign Market Value

United States price was based on U.S. selling prices to end users. Petitioner deducted ocean freight and insurance, inland freight, U.S. Customs duties, and handling charges.

Petitioner based foreign market value on a Japanese manufacturer's retail price quotes to Japanese end users.

Based upon a comparison of United States price and foreign market value, petitioner alleges dumping margins of between 62 and 104 percent.

Initiation of Investigation

Under section 732(c) of the Act, we must determine, within 20 days after a petition is filed, whether it sets forth the allegations necessary for the initiation of an antidumping duty investigation and whether it contains information reasonably available to the petitioners supporting the allegations.

We examined the petition on digital readout systems and subassemblies thereof from Japan and found that it meets the requirements of section 732(b) of the Act. Therefore, in accordance with section 732 of the Act, we are initiating an antidumping duty investigation to determine whether imports of digital readout systems and subassemblies thereof from Japan are being, or are likely to be, sold in the United States at less than fair value. If our investigation proceeds normally, we will make our preliminary determination by September 6, 1988.

Scope of Investigation

The United States has developed a system of tariff classification based on the international harmonized system of Customs nomenclature. The U.S. Congress is considering legislation to convert the United States to this Harmonized System (HS). In view of this, we will be providing both the appropriate *Tariff Schedules of the United States Annotated* (*TSUSA*) item numbers and the appropriate HS item numbers with our product descriptions on a test basis, pending Congressional approval. As with the *TSUSA*, the HS item numbers are provided for convenience and Customs purposes. The written description remains dispositive.

We are requesting petitioners to include the appropriate HS item number(s) as well as the *TSUSA* item number(s) in all new petitions filed with the Department. A reference copy of the proposed HS schedule is available for consultation at the Central Records Unit, Room B-099, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230. Additionally, all Customs officers have reference copies and petitioners may contact the Import Specialist at their local Customs office to consult the schedule.

The products covered by this investigation are digital readout systems and those subassemblies, and parts thereof, that are dedicated exclusively for use in the manufacture or production of digital readout systems. The term dedicated exclusively for use only encompasses those subassemblies that are specifically designed for use in digital readout systems, and may not be used for other purposes. The Department will determine whether certain subassemblies meet the above criteria during the course of this investigation. The products are currently provided for under *TSUSA* item number 710.8080 and currently classifiable under HS item number 9031.80.0080.

Digital readout systems (DROs) generally consist of an electronic console and one measurement transducer for each axis of linear or rotational displacement to be measured. Subassemblies consist of electronic consoles or transducers, the major components of DROs, and the major components of electronic consoles, namely printed circuit boards, and the two major components of transducers, glass strips with chrome grating, and reading heads. DROs provide linear or rotational displacement information for high precision industrial equipment such as metalworking machine tools.

Notification of ITC

Section 732(d) of the Act requires us to notify the ITC of this action and to provide it with the information we used to arrive at this determination. We will notify the ITC and make available to it all nonprivileged and nonproprietary information. We will allow the ITC access to all privileged and business proprietary information in our files, provided it confirms in writing that it will not disclose such information either publicly or under administrative protective order without written consent of the Acting Assistant Secretary for Import Administration.

Preliminary Determination by ITC

The ITC will determine by May 12, 1988 whether there is a reasonable indication that imports of DROs and subassemblies thereof from Japan materially injure, or threaten material injury to, a U.S. industry. If its determination is negative, the investigation will terminate; otherwise,

it will proceed according to the statutory and regulatory procedures.

This notice is published pursuant to section 732(c)(2) of the Act.

Joseph A. Spetrini,

Acting Assistant Secretary for Import Administration.

April 18, 1988.

[FR Doc. 8889 Filed 4-21-88; 8:45 am]

BILLING CODE 3510-DS-M

UNITED STATES DEPARTMENT OF COMMERCE
International Trade Administration
Washington, D.C. 20230

MAY 5 1988

Mr. Lynn Featherstone
Acting Director
Office of Investigations
500 E Street, S.W. Room 615AA
Washington, D.C. 20436

Dear Mr. Featherstone:

This letter is to clarify our intent with regard to the products covered as outlined in the "Scope of Investigation" section of our initiation of antidumping investigation on digital readout systems and subassemblies thereof from Japan (53 FR 13302, April 22, 1988).

The first part of our scope of investigation covers digital readout (DRO) systems, whether assembled or unassembled. An unassembled DRO system would include a console and a transducer (glass scale, magnetic, and rotary encoder but not laser) destined for use in a DRO system and imported into the U.S. for assembly and sale as a DRO system.

The second part of our scope of investigation covers subassemblies and parts thereof. Subassemblies and parts thereof include consoles and parts of consoles destined for use in DRO systems.

We intend to clarify the "Scope of Investigation" section in our preliminary determination which is currently scheduled for September 6, 1988. If there are any further questions with regard to this matter, please phone me at 377-5497.

Sincerely,

Michael J. Coursey
Director
Office of Investigations

APPENDIX D

LETTER RECEIVED BY THE COMMISSION FROM ACU-RITE, INC.,
IN SUPPORT OF THE PETITION

ACU-RITE INCORPORATED

890 EAST SECOND STREET • JAMESTOWN, NEW YORK 14701 • TELEPHONE 716 • 483 • 2587 TELEX 353878

RONALD F. MASUCCI
President

April 21, 1988

Mr. George L. Deyman
Office of Investigations
U. S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Dear Mr. Deyman:

I would like at this time to further reenforce Acu-Rite's previous position with regard to Anilam's petition to investigate Japanese dumping of digital readout systems and subassemblies thereof in the U.S. market.

Acu-Rite is a U.S. producer of both consoles and transducers for digital readout systems and subassemblies thereof.

ACU-RITE INCORPORATED strongly supports Anilam's position that the U.S. industry for digital readout systems and subassemblies is materially injured or threatened with material injury by reason of imports from Japan, which are being sold in the United States at less than fair value.

We also support the position that magnetic scale transducers are a like product to glass scale transducers and that digital readout systems employing either type of transducer directly compete.

Sincerely,

Ronald F. Masucci

RFM/s

VIA TELEFAX

APPENDIX E

COMMENTS RECEIVED FROM PRODUCERS ON THE IMPACT OF IMPORTS FROM JAPAN ON THEIR GROWTH, INVESTMENT, AND ABILITY TO RAISE CAPITAL

Impact of imports on U.S. producers' growth, investment, and ability to raise capital

U.S. producers of digital readout systems and subassemblies thereof were asked whether they experienced any actual negative effects on their growth, investment, and ability to raise capital, as a result of imports of digital readout systems and subassemblies thereof from Japan. Five producers responded "yes," * * * responded "no," and one * * * did not respond "yes" or "no" but nevertheless provided a written comment. The producers' comments are quoted below:

* * * * * * *

The U.S. producers were also asked whether they anticipated any negative impact of imports of digital readout systems and subassemblies thereof from Japan. Five producers, including * * *, answered "yes" and three answered "no." Producers' comments on the potential negative impact are quoted below:

* * * * * * *