

CERTAIN RADIO PAGING AND ALERTING RECEIVING DEVICES FROM JAPAN

Determination of the Commission
in Investigation No. 731-TA-102
(Preliminary) Under the
Tariff Act of 1930, Together
With the Information Obtained
in the Investigation



USITC PUBLICATION 1295

OCTOBER 1982

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Alfred E. Eckes, Chairman

Paula Stern

Eugene J. Frank

Veronica A. Haggart

Kenneth R. Mason, Secretary to the Commission

Staff Assigned:

Bill Schechter, Investigator

William Fletcher, Office of Industries

Eric Nelson, Office of Industries

Kim Skidmore, Office of Economics

Chand Mehta, Office of Investigations

Catherine Field, Office of the General Counsel

Jim McClure, Supervisory Investigator

Address all communications to
Office of the Secretary
United States International Trade Commission
Washington, D.C. 20436

C O N T E N T S

	<u>Page</u>
Determination-----	1
Views of the Commission-----	3
Information obtained in the investigation:	
Introduction-----	A-1
Nature and extent of alleged sales at less than fair value-----	A-2
The product:	
Description and uses-----	A-2
Tone-only pagers-----	A-3
Display pagers-----	A-3
Production process-----	A-4
U.S. tariff treatment-----	A-4
U.S. producers-----	A-6
U.S. importers and foreign producers-----	A-7
U.S. market-----	A-8
Consideration of injury or likelihood thereof:	
U.S. production, capacity, and capacity utilization-----	A-8
Domestic shipments-----	A-9
Export shipments-----	A-11
U.S. inventories-----	A-11
U.S. imports:	
Pagers-----	A-11
Pager subassemblies-----	A-13
Employment and wages-----	A-13
Financial experience of U.S. producers-----	A-15
Consideration of the causal relationship between alleged LTFV imports and the alleged injury:	
Market penetration of alleged LTFV imports-----	A-18
Threat of injury-----	A-21
Prices-----	A-21
Trends in pricing-----	A-22
Margins of underselling-----	A-22
Lost sales-----	A-25
Appendix A. Notice of Commission's investigation and conference and Department of Commerce's notice of initiation of antidumping investigation-----	A-27
Appendix B. List of witnesses appearing at the conference-----	A-29
Appendix C. Basic radio paging system-----	A-33

Figures

Subscriber paging system and basic pager design blocks-----	A-5
---	-----

Tables

1. Certain radio paging and alerting receiving devices: Pre-MTN rates of duty and staged rates of duty modifications, 1980-87-----	A-6
2. High capacity pagers: Apparent U.S. consumption by type, 1979-1981, January-June 1981-1982-----	A-8

CONTENTS

	<u>Page</u>
3. High capacity pagers: U.S. production, capacity and capacity utilization, 1979-81, January-June 1981 and January-June 1982-----	A-9
4. High capacity pagers: U.S. shipments, 1979-1981, January-June 1981 and January-June 1982-----	A-10
5. High capacity pagers: U.S. imports for consumption from Japan, by company and type, 1979-1981, January-June 1981, January-June 1982---	A-12
6. Average number of U.S. production and related workers engaged in the manufacture of high capacity radio pagers, hours worked by such workers, wages paid, total compensation, and productivity, 1979-81, January-June 1981, and January-June 1982-----	A-14
7. Profit-and-loss experience of Motorola Inc., a U.S. producer of high-capacity pagers, by types of operations, 1979-81, January-June 1981 and January-June 1982-----	A-16
8. Profit-and-loss experience of Motorola Inc. on its high capacity radio paging receivers on a unit basis, 1979-81, January-June 1981, and January-June 1982-----	A-18
9. High capacity pagers: U.S. producers' domestic shipments, imports for consumption from Japan, by company, and all countries, and apparent consumption, 1979-81, January-June 1981 and January-June 1982-----	A-19
10. Tone-only pagers: U.S. producers' and importers' prices, by quarters, January-1980-June 1982-----	A-23
11. Display pagers: U.S. producers' and importers' prices, by quarters, January 1980-June 1982-----	A-24

Note.--Information which discloses confidential operations of individual concerns may not be published and therefore has been deleted from this report. Deletions are indicated by asterisks.

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

Investigation No. 731-TA-102 (Preliminary)
CERTAIN RADIO PAGING AND ALERTING RECEIVING DEVICES FROM JAPAN

Determination

On the basis of the record 1/ developed in the subject investigation, the Commission determines, 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 2/ by reason of imports from Japan of certain radio paging and alerting receiving devices, 3/ as provided for in items 685.24 and 685.70 of the Tariff Schedules of the United States (TSUS), which are alleged to be sold in the United States at less than fair value (LTFV).

Background

On August 19, 1982, counsel for Motorola, Inc., filed a petition with the U.S. International Trade Commission and with the Department of Commerce alleging that an industry in the United States is materially injured, or is threatened with material injury, by reason of imports from Japan of certain radio paging and alerting receiving devices which are allegedly being sold in the United States at LTFV. Accordingly, on August 20, 1982, the Commission instituted a preliminary antidumping investigation under section 733(a) of the Tariff Act of 1930 (19 U.S.C. § 1673b(a)).

1/ The "record" is defined in § 207.2(i) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(i)).

2/ Commissioner Frank determines that there is a reasonable indication of a threat of material injury.

3/ The Department of Commerce defined the imported merchandise subject to this investigation as "high capacity" pagers (47 F.R. 40679). Report at Appendix A.

Notice of the Commission's institution of the investigation and the public conference held in connection with it was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, D.C., and by publishing the notice in the Federal Register on August 25, 1982 (47 F.R. 37312). All interested parties were afforded the opportunity to present information to the Commission at the public conference which was held in Washington, D.C. on September 9, 1982.

VIEWS OF THE COMMISSION

The record in this investigation 1/ provides a reasonable indication that an industry in the United States is materially injured 2/ by reason of imports from Japan of certain radio paging and alerting receiving devices 3/ allegedly sold at less than fair value (LTFV). We base our affirmative finding on the existence of underselling, price depression, lost sales, and recent declines in the profitability of the domestic industry. 4/

Domestic industry and the like product

Section 771(4)(A) of the Tariff Act of 1930 defines the term "industry" as "the domestic producers as a whole of a like product or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that product." 5/ "Like product" is 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 under this subtitle." 6/

The imported product which is the subject of this investigation is high

1/ A substantial amount of business confidential information is present in the record even in the aggregate figures. Thus, the Commission is constrained and must refer to this information only in general terms.

2/ Commissioner Frank also finds a reasonable indication of a threat of material injury. Commissioner Frank notes that only a low-threshold test applies to preliminary determinations. An overview on this is found in his views in Frozen French Fried Potatoes From Canada, Inv. No. 731-TA-93 (Preliminary), USITC Pub. No. 1259 at 12-15 (1982).

3/ The Department of Commerce defined the imported merchandise subject to this investigation as "high capacity" pagers from Japan. 47 Fed. Reg. 4067; staff report at Appendix A.

4/ Commissioner Frank recognizes also other negative factors besides those listed resulted from alleged LTFV sales by Japanese companies.

5/ 19 U.S.C. § 1677(4)(A).

6/ 19 U.S.C. § 1677(10).

capacity pagers which are components of a radio broadcast system. The system normally consists of transmitters, encoders, and radio paging receivers.^{7/}

Two Japanese companies import high capacity pagers into the United States. Nippon Electric Company Ltd., (NEC) entered the U.S. market in 1975 and currently imports both tone-only and display pagers. ^{8/} NEC exports substantially finished pagers to its facility at Hawthorne, California where it completes pagers to customer specifications and tests them. ^{9/} Matsushita Communication Industrial Company Ltd., (MCI) has exported finished pagers during the entire period under investigation. MCI increased its participation in the U.S. pager market in late 1981 when it sought large volume orders from U.S. customers. As of June 30, 1982, MCI has sold and delivered tone-only pagers.

The term "high capacity" refers to the capacity of the broadcast system rather than the capacity of the particular pager. Thus, a high capacity pager is part of a system which can support 3,000 or more receivers on a single channel. ^{10/} Systems which handle fewer than 3,000 pagers on a single frequency are considered low capacity systems. ^{11/} System capability, in terms of the number of subscribers which the system can accommodate and the number of pages per hour which the system can transmit, are important

^{7/} Staff Report at A-36.

^{8/} Id. at A-3.

^{9/} NEC's Post-Conference Brief at 30.

^{10/} Id. at A-1 n. 1.

^{11/} Low capacity systems such as those using tone and voice paging receivers require a longer transmission time for each page. Thus, the system can accommodate fewer subscribers. Consequently, operators utilize low capacity systems for functions where high volume rapid transmission is not essential.

considerations for the radio common carriers (RCCs) and wire carriers (e.g., telephone companies), which constitute the primary purchasers of pagers. Both wire carriers and RCCs operate these systems renting or selling the pagers and providing paging service to private subscribers.

In a basic high capacity radio paging system, the paging terminal receives a telephone call on a number corresponding to a subscriber's paging receiver. The terminal converts this number into a paging code which is then transmitted simultaneously to all pagers in service within the transmission area. Although every pager in the area receives the code, only the pager whose assigned address code matches the received code responds to the signal. Tone and display pagers, as compared to tone-only pagers, are capable of receiving additional information which the pager interprets and displays in the form of a numeric message. 12/

Paging systems differ in the type of code format which they use. 13/ A particular paging receiver is manufactured to respond to a single code format. 14/ A paging system, however, can utilize various coding formats

12/ Id. at A-3, App. C.

13/ Coding systems can be classified into two generic types, analog sequential tone signalling, and binary signalling. The 5 or 6 tone analog systems conform to a single standard and are used for tone-only pagers. Binary formats vary from one producer to another. Examples of binary systems are the POCSAG system which the British Post Office devised and Motorola's Golay system, a proprietary system. Although producers prefer to use their own signalling system, they do manufacture pagers for other systems.

14/ Staff report at A-3.

through modification of the system encoders and transmitters. 15/

A paging receiver responds solely to its own encoded address. This response, however, varies with the type of pager which the subscriber owns. The tone-only pager emits a "beep" or series of tones to alert the subscriber. Silent alert pagers which vibrate or emit light flashes are available as are multiple function tone-only pagers. Multiple function tone-only pagers produce varying tones which can have prearranged meanings for the subscriber. 16/

Display pagers are a new development in the area. Currently, these pagers can display ten numerals constituting a direct message to the subscriber. This may eliminate the need to contact a third party in order to receive the message. As with all pagers, however, it can only give a message to the subscriber it cannot carry a message to the person making the page. Although a display pager requires two transmissions, i.e., the coded address and the message, it qualifies as a high capacity pager because of the brief duration of these transmissions. 17/

15/ Conference transcript at 31-36, 146-47. Although there is some dispute over the cost of conversion, RCCs have undertaken this procedure. Furthermore, there are no clear indications as to which system might be superior. Id. at 158-60. Thus, for purposes of this preliminary investigation, the Commission finds that paging receivers responding to differing binary code formats are essentially interchangeable.

16/ Staff report at A-3.

17/ Id. at A-3. Another type of pager is a tone and voice pager. These pagers receive a voice message transmitted from the paging center and provide great flexibility in the type of message delivered. However, the time required to transmit vocal messages substantially limits the system's capacity. Thus, these paging receivers are generally associated with low capacity systems. Id. at A-3 n. 1; see note 11 at 4. For purposes of this preliminary investigation, we have not considered this type of pager as interchangeable with pagers used in high capacity systems.

Display pagers represent an evolving technology. RCCs, the primary pager customers, have indicated that in their present state of development display pagers possess limited capabilities and constitute status items for subscribers.

Although in the future display pagers may possess sufficiently distinctive characteristics and uses to be considered a separate like product, at present they are essentially indistinguishable from tone-only pagers. Both types of pagers are manufactured from the same components, both perform the same alerting function, and both are sold to the same distribution channels. On the basis of the information presented in this preliminary investigation, we find that high capacity tone and display pagers and tone-only pagers constitute the like product. 18/

The domestic industry produces a complete line of high capacity pagers, including both tone-only and tone and display pagers, containing the same features as the imported product. 19/ Furthermore, both the imported and domestic products possess the same technical complexity and perform the same functions. 20/

Motorola, the largest U.S. producer of high capacity pagers, is also the largest importer of pager subassemblies. Motorola has a facility in Penang, Malaysia where it assembles certain U.S. and foreign electronic components into pager printed circuit boards. 21/ Motorola imports the Malaysian

18/ The Commission does not preclude defining the like product differently in any final investigation if sufficient information is provided to support such a revision.

19/ Conference transcript at 71.

20/ Staff report at A-3.

21/ Letter dated September 8, 1982, from Mr. Harvey M. Applebaum, counsel for Motorola to Mr. Gary N. Horlick.

printed circuit boards into the U.S. under Item 807.00 of the TSUS. 22/

Motorola, however, maintains production facilities in its U.S. plants at Plantation, and Boca Raton, Florida where they are engaged in the final assembly of these printed circuit boards into finished pagers. 23/ Based on the information available to the Commission at this time, the U.S. value added to these pagers appears to be the majority of the pager's cost of production. 24/ Furthermore, the limited information on the record indicates that Motorola's total pager operations in Florida differ substantially from NEC's total pager operations in California. Thus, we conclude that Motorola's operations dedicated to the final assembly of these printed circuit boards should be included in the domestic industry.

RF Communication, a division of Harris Corporation also produces high capacity pagers in the U.S. These paging receivers are produced in Rochester, New York, and account for a small portion of domestic sales. 25/

We conclude that the domestic industry consists of these two U.S. producers of high capacity pagers.

Material injury

We determine in this investigation that the presence of underselling and price depression together with lost sales and the concomitant effect on

22/ This classification provides for return of U.S. goods assembled abroad. In late 1981 and early 1982, substantial numbers of circuit boards, which Customs has classified as unfinished pagers, were entered under TSUS Item 685.24.

23/ Motorola manufactures its BPR-2000 tone-only model and its tone and display model totally in the United States.

24/ The Commission desires to explore more fully the issues of the precise nature of the imports from Malaysia, the source of the parts assembled in Malaysia, and the value added from the United States in any final investigation. In addition, further information on NEC's California operations would be examined in any final investigation.

25/ Harris Corp. provided the Commission with little information on its paging manufacture. The Company did not participate in the Commission proceedings beyond giving information on an estimated basis to the Commission.

profitability 26/ provide a reasonable indication that a U.S. industry is materially injured by reason of imports allegedly sold at less than fair value. 27/

Imports of high capacity pagers increased steadily in absolute and relative terms from 1979 through June 1982. NEC was a participant in the market throughout the period under investigation. MCI assumed a substantial role in the U.S. market as its market share increased significantly in the first half of 1982. When display pagers entered the market in the last quarter of 1981 and the first half of 1982, total import penetration increased significantly. Both Japanese producers have stated their intention to focus on selling display pagers in the U.S. rather than tone-only pagers. The Japanese industry appears to be operating at high levels of capacity utilization. 28/

Even though imports of pagers from Japan have increased, most indicators of the domestic industry's condition are positive, reflecting an expanding U.S. market for pagers. U.S. production and capacity have increased as have unit sales and domestic shipments. In addition, capacity utilization has remained relatively stable throughout the period under investigation.

In contrast to these positive indicators, however, the domestic industry has recently experienced a significant decline in profits on both an operating basis and a net profit before tax basis. 29/ This 1982 decline in profit

26/ See Commissioner Frank's comment in note 4 at 3.

27/ See note 1 supra, on confidential information.

28/ The data received from MCI reflects only its production capacity for pagers specifically produced for sale in Japan.

29/ The Commission will require additional information on the domestic industry's financial experience over the period under investigation, including a complete explanation of its experience in 1980.

occured at the same time that average unit costs decreased. 30/ This indicates that these losses can be reasonably attributed to a substantially lower average selling price per unit during the first half of 1982 resulting from severe underselling by one Japanese producer.

Prices for both domestic and Japanese tone-only pagers were virtually unchanged throughout 1980 and for the first three quarters of 1981. Beginning in the first quarter of 1982, there is evidence of substantial underselling in the market. 31/ This underselling has continued in the second quarter of 1982. In response to this underselling, a domestic producer decreased prices in order to keep certain large volume customers. 32/ Thus, although the domestic industry maintained most of its market share, it did so at depressed prices. This resulted in diminished profitability to the extent that the high capacity pager industry incurred losses in the first half of 1982.

The Commission verified three lost sales where price was identified as a major factor. 33/ In a fourth instance, price was a factor in the purchaser's shift from the domestic product to the imported product. Although some of the purchasers cited other factors which influenced their choice of pager, in each instance there was a significant margin of underselling. Furthermore, information presented on shifts in purchase orders, first to a Japanese product sold at a low price and a subsequent shift back to a domestic producer

30/ Conference transcript at 54.

31/ Id. at 22.

32/ The market for high capacity pagers has become highly concentrated with fewer customers accounting for an increasing share of purchases. Id. at A-14.

33/ Lost sales data is present for tone-only pagers. Comparison of price information on display pagers is based in part on actual sales prices compared to contract prices.

following substantial price cuts demonstrate the price sensitive nature of the pager market. 34/

For the foregoing reasons, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from Japan of certain radio paging and alerting receiving devices. 35/

34/ In light of this price sensitivity, the Commission will attempt to develop additional information on the availability of incentives such as offers to pay for system conversion. These offers could influence the effective cost of paging receivers.

35/ Commissioner Frank also finds a reasonable indication of a threat of material injury.

INFORMATION OBTAINED IN THE INVESTIGATION

Introduction

On August 19, 1982, a petition for an antidumping investigation on certain radio paging and alerting receiving devices (hereinafter referred to as high-capacity pagers) from Japan was filed with the U.S. International Trade Commission and the U.S. Department of Commerce by counsel on behalf of Motorola, Inc., Schaumburg, Ill. Accordingly, on August 20, 1982, the Commission instituted investigation No. 731-TA-102 (Preliminary) under section 733(a) of the Tariff Act of 1930 (19 U.S.C. 1673b(a)). The purpose of this investigation is 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 certain radio paging and alerting receiving devices provided for in items 685.24 and 685.70 of the Tariff Schedules of the United States (TSUS) allegedly sold at less than fair value (LFTV).

On September 15, 1982, the Department of Commerce initiated an antidumping investigation on high-capacity pagers from Japan. Therefore, in order to comply with the scope of Commerce's investigation, the focus of this report is on high-capacity pagers. 1/

The statute directs that the Commission make its determination within 45 days of receipt of a petition, or in this case by October 4, 1982. Notice of the institution of the Commission's investigation and of the public conference held in connection therewith was duly given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, D.C., and by publishing the notice in the Federal Register of August 25, 1982 (47 F.R. 37312). 2/ A public conference was held in Washington, D.C., on September 9, 1982, at which all interested parties were afforded the opportunity to present information for consideration by the Commission. 3/

1/ High-capacity pagers are paging receivers that operate on a high-capacity system. A high-capacity system is defined as that which operates on a single channel, using a single signaling format, and which is designed to support 3,000 or more subscriber receivers. Paging receivers designed to operate in a high capacity system are called high-capacity pagers in the trade. It is not the pager, however, which has the high capacity but rather the system. Low-capacity pagers are paging receivers that operate on a single channel, using a single signaling format, and have a design limitation which prohibits the systems from supporting 3,000 or more subscribing receivers. For example, a "tone and voice" paging system, although perhaps having the capability of transmitting pages to large numbers of individual addresses, cannot support 3,000 subscribers on a single channel and are therefore considered low capacity. Since low-capacity pagers were excluded from the scope of Commerce's investigation, this report does not discuss them.

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

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

Nature and Extent of Alleged Sales at Less Than Fair Value

The petition states that Matsushita Communication Industrial Co., Ltd. (hereinafter referred to as MCI), and Nippon Electric Co., Ltd. (hereinafter referred to as NEC), manufacture the vast majority of all high-capacity pagers imported from Japan. NEC has sold pagers in the U.S. market since the mid-1970's; Matsushita entered the U.S. market in late 1981. The petition alleges that both companies sold at LTFV during the last quarter of 1981 and the first two quarters of 1982.

Based on NEC's published list prices in effect after MCI's entry into the U.S. market, the petition alleges the following dumping margins for each of NEC's models of high-frequency pagers (in percent):

	<u>5-tone VHF</u>	<u>5-tone UHF</u>	<u>Binary UHF</u>	<u>Display</u>
1981: Oct.-Dec-----	69	45	63	9
1982:				
Jan.-Mar-----	81	55	75	16
Apr.-June-----	45	25	39	0

The calculations reflect both currency fluctuations and a price change in Japan. The petition also indicates that the price reduction subsequent to MCI's entry may have increased the dumping margins and requests that Commerce determine NEC's actual market-level pricing on recent sales.

MCI's U.S. sales are predominantly of one model, a tone-only high-frequency pager. Based on a sales price to customers in the United States of \$79 per unit on * * * and \$90 per unit on * * *, the alleged dumping margins are as follows (in percent):

<u>Sales at \$79 per unit</u>	<u>Sales at \$90 per unit</u>
1981: Oct.-Dec----- 170	1981: Oct.-Dec----- 137
1982:	1982:
Jan.-Mar----- 187	Jan.-Mar----- 152
Apr.-June----- 132	Apr.-June----- 104

The Product

Description and uses

The imported product, subject to this investigation are high capacity radio paging receivers. Both the imported and domestic models are available in the United States with the same features. The type of pagers available in the U.S. market 1/ by manufactures, are as follows:

1/ Another type of pager, the "tone and voice," is not featured in the tabulation, although it is briefly described later in this report. It is not within the scope of this investigation, since it is considered to be a low-capacity pager.

Manufacture	:	:	Tone-only pager	
			Binary code signaling	5- or 6- tone signaling
Motorola-----	:	:	:	:
MCI-----	:	:	:	:
NEC-----	:	:	:	:
	:	:	:	:

1/ Motorola intends to begin shipments of display pagers in July 1982.

2/ * * *.

The imported and U.S.-produced tone-only pagers are similar in terms of complexity of design and construction. The design of the decoding section of the receivers varies to accommodate the various signaling schemes. Motorola manufactures pagers using the Golay binary decoding scheme as well as the Post Office Coding Standardization Advisory Group (POCSAG) code, a binary coding scheme devised for use by the British Post Office. Motorola manufactures pagers using the Golay format for domestic sales and the POCSAG format for export sales to the European Community. MCI employs the POCSAG scheme for the U.S. market, while NEC and Harris Corp. (another domestic producer) utilize their own, exclusive coding formats. From a production point of view, a pager with one coding scheme can be produced as readily as one with another coding scheme.

Tone-only pagers.-- Imported and U.S.-produced tone-only receivers are commercially, interchangeable. The installed paging system determines the receiver parameters with respect to address signaling, message format, and frequency. The tone-only pager contains a loudspeaker or other audio frequency transducer which, when the receiver is paged, gives out a "beep" or a series of beeps to alert the subscriber. There are variations on the tone-only receiver, such as one that flashes a light or vibrates when paged or one that is capable of receiving multiple messages. In the latter, different messages may be distinguished by the use of a steady tone and an interrupted tone. The tone-only receivers are now generally used in high-capacity systems.

Display pagers.--Imported and domestic display pagers are also commercially interchangeable. Display receivers represent a technological improvement combining the best features of the tone-only and the tone-and-voice paging receivers. 1/ Display pagers are also high-capacity pagers, which not only alert the subscriber to a page but also display a short message of 8 to 10 numerals (depending on system design) on a self-contained liquid crystal. They also employ the various signaling systems found in the tone-only pagers.

1/ A third type of pager called Tone and voice pager is generally associated with low-capacity paging systems due to the time required to transmit individual messages. The "tone and voice" pagers have excellent flexibility and communications efficiency in delivering a short message to the subscriber, which obviates the need for the subscriber to make a separate contact.

Production process

The production of paging receivers involves first the assembly of electronic components (resistors, capacitors, inductors, transistors, integrated circuits, and so forth) on a printed circuit board. Once assembled with components, the board is soldered and given a preliminary test. Although the channel (frequency) determining crystals and the individual address-decoding plug or circuit may have been left off the board at this stage, the printed circuit subassembly has attained the essential character of a paging receiver, albeit unfinished. The paging receiver can be inventoried at this point since it has not been tailored to a customer's specific frequency or address code. The finishing operation consists of installing the frequency-selecting crystals, minor adjustment, installation of the housing and address key and final testing. This completes the receiver to the customer's specification.

A description of a basic radio paging system is set forth in the following diagram and described in appendix C.

U.S. tariff treatment

Radio paging and alerting receivers of the type subject to this investigation are classified for tariff purposes under items 685.24 and 685.70 of the Tariff Schedules of the United States. Tone-only paging receivers are classified under item 685.70, and all other paging receivers are classified under item 685.24. 1/ In addition to radio paging and alerting receiving devices, item 685.24 covers other solid-state radio receivers designed for other than motor-vehicle installation, and in addition to tone-only pagers, item 685.70 includes other signaling devices, such as burglar alarms, smoke detectors, indicator panels, and other sound- or visual-signaling apparatus.

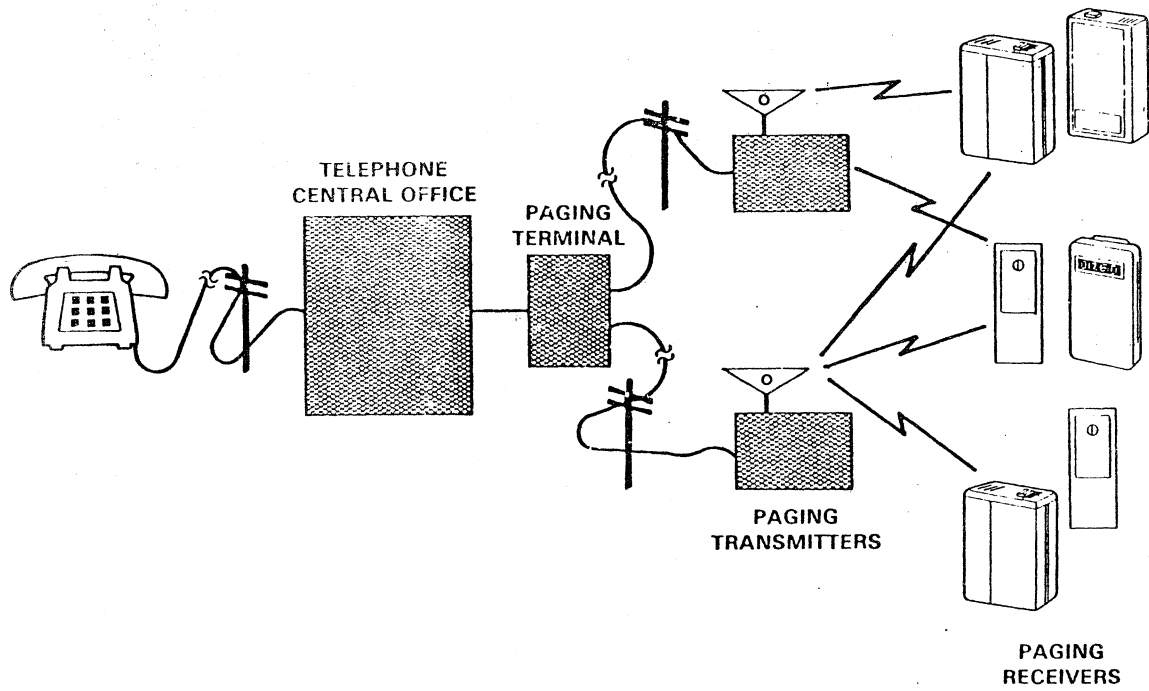
The column 1 (most-favored-nation) rates of duty for items 685.24 and 685.70 are 8.8 percent ad valorem and 3.5 percent ad valorem, respectively. The column 2 rate of duty is 35 percent ad valorem for both items 685.24 and 685.70; 2/ there are no known imports of the subject articles from column 2 countries. As a result of concessions granted in the Tokyo round of multilateral trade negotiations (MTN), column 1 rates of duty are to be reduced to 6 percent and 2.7 percent ad valorem for items 685.24 and 685.70, respectively, by January 1, 1987. The rate for least developed developing countries (LDDC's) for item 685.24 is 6 percent ad valorem; that for item 685.70 is 2.7 percent. 3/ Imports of pagers from designated beneficiary

1/ As a result of U.S. Customs Ruling 530-71 in October 1971, as amended in November 1971 and as amplified in unpublished internal ruling 063939.

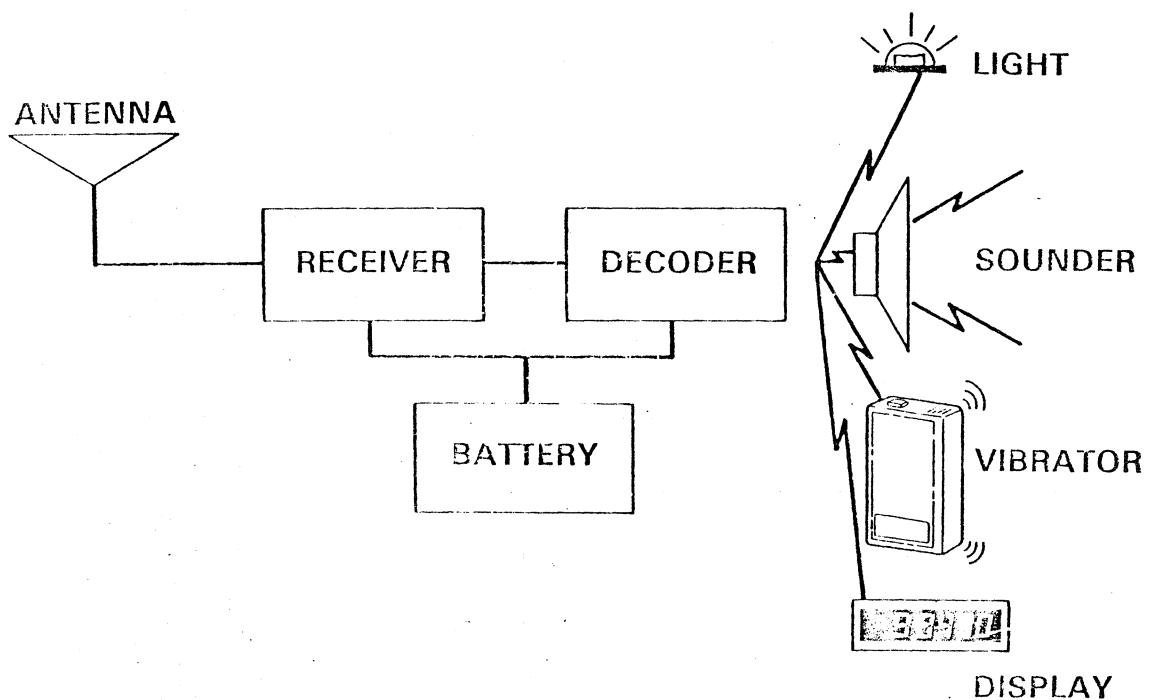
2/ Applicable to countries enumerated in general headnote 3(f) of the TSUS.

3/ The preferential rates of duty in the "LDDC" column reflect the full U.S. MTN concession rates implemented without staging for particular items which are the products of least developed developing countries, enumerated in general headnote 3(d) of the TSUS. Where no rate of duty is provided in the "LDDC" column for an item, the rate of duty in col. 1 applies.

SUBSCRIBER PAGING SYSTEM



BASIC PAGER DESIGN BLOCKS



developing countries are eligible for duty-free treatment under the Generalized System of Preferences (GSP). 1/

The staged duty reductions as a result of the MTN are shown in table 1.

Table 1.--Certain radio paging and alerting receiving devices: Pre-MTN rates of duty and staged rate-of-duty modifications, 1980-87

(Percent ad valorem)										
TSUS item No.	Pre-MTN col. 1 rate of duty 1/	Rates of duty effective with respect to articles entered on and after Jan. 1--								
		1980 2/	1981	1982	1983	1984	1985	1986	1987	
685.24----	10.4	9.9	9.3	8.8	8.2	7.7	7.1	6.6	6	
685.70----	4	3.8	3.7	3.5	3.4	3.2	3	2.9	2.7	

1/ Rate effective prior to Jan. 1, 1980.

2/ The first staged rate reduction became effective Jan. 1, 1980.

U.S. Producers

Motorola, Inc. (headquartered in Schaumburg, Ill.), is the largest U.S. producer of high-capacity paging receivers, accounting for * * * percent of U.S. production in 1981. Motorola, Inc., is a multinational corporation operating 43 production facilities for electronic and communications products in the United States and abroad. Plants for the production of pagers and pager components are located in Plantation and Boca Raton, Fla., and Penang, Malaysia. Motorola intends to * * *. In 1981, the company had approximately 76,000 employees worldwide and sales of approximately \$3.3 billion. Motorola produces a wide variety of products and components in the electronics and communications sectors.

RF Communication, a division of Harris Corp., is the second largest domestic manufacturer of high-capacity paging receivers, accounting for * * * of U.S. production of paging receivers in 1981. Harris is also a multinational corporation, with 40 manufacturing facilities in the United States and abroad; paging receivers are manufactured in Rochester, N.Y.

Harris Corp. employed approximately 26,000 persons in 1981. Sales in 1981 were approximately \$1.6 billion, with paging receivers accounting for * * *. Harris Corp. bought the Martin Marietta line of pagers in 1977.

1/ The GSP, enacted as title V of the Trade Act of 1974, provides duty-free treatment for specified eligible articles imported from designated beneficiary developing countries. GSP, implemented by Executive Order No. 11888 of Nov. 24, 1975, applies to merchandise imported on or after Jan. 1, 1976, and is scheduled to remain in effect until Jan. 4, 1985.

Other domestic producers of paging receivers include General Electric Corp., Reach Electronics, Inc., Sonar Radio, Kel Corp., and Meta Systems. General Electric, Reach Electronics, Sonar Radio, and Kel Corp. manufacture primarily low-capacity paging receivers, and Meta Systems produces specialized high capacity paging receivers. Bell & Howell Co. produced paging receivers prior to 1977. It stopped production and sold its line of pagers to Kel Corp. apparently because prevailing market prices were too low for them to compete effectively. According to industry sources, * * *, and * * * had announced plans to enter the market in 1980, but to date they have not because they allegedly feel that they cannot effectively compete given current prevailing market prices. 1/

U.S. Importers and Foreign Producers

NEC America is by far the largest U.S. importer of high-capacity pagers, accounting for * * * of total U.S. imports of paging receivers in 1981. 2/ NEC has its pager production facilities in Japan, but * * * in its Hawthorne, Calif., plant. NEC is a multinational company operating 39 plants in Japan and 18 plants in 10 other countries. NEC and its overseas subsidiaries employed approximately 65,000 persons worldwide and had sales totaling about \$4.3 billion in 1981. NEC produces a broad range of communications equipment, computers, industrial electronic systems, home electronics products, and various electrical components for the world market.

Panasonic Industrial Corp., with U.S. headquarters in Secaucus, N.J., a subsidiary of MCI, entered the U.S. high-capacity pager market in 1981. MCI presently * * *. In 1983, MCI will * * *. MCI is a multinational company employing approximately 110,000 persons and had sales of approximately \$13 billion in 1981. MCI manufactures a wide variety of products including communications equipment, electronic components, industrial equipment, and domestic appliances.

Multitone Electronics, Inc., the U.S. marketing arm of Multitone Electronics Co. Ltd of the United Kingdom, * * * importer of the subject merchandise. The parent firm employed approximately 450 persons and had U.S. sales of approximately * * * in 1981. The U.S. subsidiary is located in Springfield, N.J.

Another British producer of high-capacity pagers is Standard Telephone & Cable, Ltd. (STC), a subsidiary of International Telephone & Telegraph. This company is expected to begin exporting to the United States in the fall of 1982. According to industry sources, STC has contracted to supply Tandy Co. (Radio Shack) with low-cost, high-capacity pagers that will retail below \$100. In 1981, STC employed approximately 27,000 persons and had worldwide sales of approximately \$1.3 billion.

1/ * * *.

2/ NEC markets its products in the United States through an independent selling agent, National Marketing, Inc.

Other foreign producers of paging receivers not currently exporting to the United States include Iwatsu Electric Co., of Japan; Iwata Electric Works Co., Ltd., of Japan; Fujitsu, Ltd., of Japan; Toshiba Corp. of Japan; Toyocom Equipment Co., of Japan; and Philips Telecommunicatie Industrie, a subsidiary of Philips Gloeilampenfabrieken NV, of the Netherlands.

Motorola, NEC, MCI, Kokusai, Toyocom, and Toshiba are the six suppliers to Nippon Telephone & Telegraph (NTT) in Japan. NTT is the state-controlled communication network, and is the only common carrier in Japan authorized to handle subscription paging.

U.S. Market

Apparent U.S. consumption of all high-capacity pagers increased each year from * * * units in 1979 to * * * units in 1981, or by * * *. In January-July 1982, apparent U.S. consumption of high-capacity pagers jumped by * * * over that in the corresponding period of 1981 (table 2). During 1979-81, tone only pagers accounted for the vast majority of the U.S. market. However, in 1981 the tone-and-display-pager market began to grow, and in January-June 1982 tone-and-display pagers accounted for * * * of the total market. All the increase in consumption of tone-and-display pagers is due to imports from Japan. There were no U.S. shipments of domestically produced tone-and-display pagers from January 1979 through June 1982.

Table 2.--High-capacity Pagers: Apparent U.S. consumption by types, 1979-81, January-June 1981, and January-June 1982

(In units)							
Product	:	:	:	:	:	January-June--	
	:	1979	:	1980	:	1981	:
	:	:	:	:	:	1981	:
	:	:	:	:	:	1982	:
Tone-only-----	:	***	:	***	:	***	:
Tone-and-display-----	:	***	:	***	:	***	:
Other-----	:	***	:	***	:	***	:
Total-----	:	***	:	***	:	***	:
	:	:	:	:	:	:	:

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission, and a confidential submission by Matsushita Communication Industrial Co.

Consideration of Injury or Likelihood Thereof

U.S. production, capacity, and capacity utilization 1/

U.S. production of high-capacity pagers increased from * * * units in 1979 to * * * units in 1981, or by * * *. In January-June 1982, production increased by * * * over that in the corresponding period of 1981 (table 3).

Table 3.--High-capacity pagers: U.S. production, capacity, and capacity utilization, 1979-81, January-June 1981, and January-June 1982 ^{1/}

Period	Production	Capacity	Capacity utilization
	Units	Units	Percent
1979-----	***	***	***
1980-----	***	***	***
1981-----	***	***	***
January-June--			
1981-----	***	***	***
1982-----	***	***	***

^{1/} U.S. production and capacity during the period shown consisted exclusively of tone only pagers.

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

Tone-only high-capacity pagers accounted for all U.S. production during this period; Motorola did not begin to produce a display pager until * * * 1982.

During the same period, Motorola increased its production capacity from * * * units in 1979 to * * * units in 1981, or by * * *. In January-June 1982, Motorola increased its capacity * * *.

In July 1982, Motorola adjusted its production capacity * * *. Motorola estimates its new total production capacity for all high-capacity pagers will be * * * units a calendar year. The new BPR display pager will account for approximately * * * units of production capacity, and the tone-only Motorola models (mostly the * * *) will account for * * * units. Thus, by the end of 1982, Motorola will have increased its capacity to produce high-capacity pagers by * * * percent over the 1979 level.

Capacity utilization in Motorola's production facilities * * *.

Motorola has separate facilities for its production of high-capacity pagers for Nippon Telephone & Telegraph of Japan. Motorola estimates that its capacity to produce NTT "pocket bell" pagers * * *. Production of the NTT pagers amounted to * * * units in January-June 1982.

Domestic shipments

Total domestic shipments of high-capacity tone-only pagers ^{2/} increased from * * * units in 1979 to * * * units in 1980. In 1981, total domestic shipments increased * * *. During January-June 1982 total domestic shipments

^{1/} The statistics presented in this section * * *.

^{2/} There were no domestic shipments of high-capacity display pagers during the period under consideration.

increased * * * over the level achieved in the corresponding period of 1981 (table 4).

Table 4.--High-capacity pagers: U.S. shipments, by firms, 1979-1981, January-June 1981 and January-June 1982 1/

(In units)						
Firm	:	:	:	:	January-June--	
	:	1979	:	1980	:	1981
	:	:	:	:	:	1982
	:	:	:	:	:	:
Motorola-----	:	***	:	***	:	***
Harris 2/-----	:	***	:	***	:	***
Total-----	:	***	:	***	:	***
	:	:	:	:	:	:

Export shipments

Motorola's exports of tone-only high capacity pagers increased from * * * units in 1979 to * * * units in 1981, as shown in the following tabulation: Motorola's exports 1982, increased * * * over those in the corresponding period of 1981, owing to the increase in its exports to * * *.

<u>Year</u>	<u>Motorola's exports</u> (units)
1979-----	***
1980-----	***
1981-----	***
January-June--	
1981-----	*** 1/
1982-----	*** 2/

1/ * * *.

2/ * * *.

U.S. inventories

Since Motorola's high-capacity pagers are built to unique customer requirements, the company does * * *. 1/ The following tabulation provides * * * of Motorola's inventory of high capacity tone-only pagers * * *.

<u>As of December 31--</u>	<u>Estimated units</u>
1979-----	***
1980-----	***
1981-----	***
As of June 30--	
1981-----	***
1982-----	***

U.S. imports

Pagers.--Total U.S imports of high-capacity pagers 2/ increased from * * * units in 1979 to * * * units in 1980 again to * * * units in 1981. In January-June 1982, imports increased by almost * * * percent over the level achieved in the corresponding period of 1981, as shown in the following tabulation:

1/ Statements by Motorola in its response to the Commission's questionnaire.
 2/ In addition to the complete pagers considered here, Motorola imports from Malaysia, subassemblies that are dedicated for use in the "Metrix and "Page-Boy" high-capacity pagers.

<u>Period</u>	<u>Total imports</u> (units)
1979-----	***
1980-----	***
1981-----	***
January-June--	
1981-----	***
1982-----	***

Japan accounts for * * * of all U.S. imports of complete high-capacity pagers. Imports of tone-only high-capacity pagers from Japan increased from * * * units in 1979 to * * * units in 1980 and to * * * units in 1981, representing an increase of * * * over the 3-year period. In January-June 1982, imports of tone-only high-capacity pagers from Japan increased by * * * over the level achieved in the corresponding period of 1981 (table 5). NEC's imports of tone-only pagers * * * percent during January-June 1982; MCI's entrance into the U.S. market accounted for * * *.

Table 5.--High-capacity pagers: U.S. imports for consumption from Japan, by firms and by types, 1979-1981, January-June 1981, January-June 1982

<u>Period and type</u>	<u>NEC</u>	<u>MCI 1/</u>	<u>Total</u>
1979:			
Tone-only-----	***	***	***
Display-----	***	***	***
Total-----	***	***	***
1980:			
Tone-only-----	***	***	***
Display-----	***	***	***
Total-----	***	***	***
1981:			
Tone-only-----	***	***	***
Display-----	***	***	***
Total-----	***	***	***
January-June 1981:			
Tone-only-----	***	***	***
Display-----	***	***	***
Total-----	***	***	***
January-June 1982:			
Tone-only-----	***	***	***
Display-----	***	***	***
Total-----	***	***	***

1/ Based on MCI's export data.

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

NEC introduced high-capacity display pagers in the U.S. market in the last half of 1981, and such imports increased from * * * units in 1981 to * * * units in January-June 1982. * * *. MCI will not begin to import * * *. Currently MCI has * * * 1/ with * * *. Motorola did not begin to produce and ship domestically produced display pagers until * * * 1982.

MCI informed the Commission that its U.S. sales agent, Panasonic Industrial Corp., * * * pagers.2/

Pager subassemblies.--From 1979 through September 1982, Motorola imported pager subassemblies, from its plant in Penang, Malaysia, for use in its high-capacity pagers. These subassemblies are * * * into high-capacity pagers in Motorola's U.S. production facilities in Florida. Motorola informed the Commission that it assembles circuit boards (* * *) in Penang and exports them to the United States, where they are usually entered under item 807.00 of the TSUS, as american components assembled abroad. * * *. * * *. Official data of the U.S. Customs Service indicated that Motorola imported * * * units in 1981 and * * * units in January-April 1982. Customs could not verify * * *. A value added analysis submitted by Motorola indicates the U.S. components and labor accounts for more than * * * percent of the total value of its pager shipments.

Motorola informed the Commission that its records indicate that in 1981 it imported approximately * * * pager subassemblies from Malaysia, which when fully assembled with U.S.-produced parts would constitute * * * to * * * finished pagers. The finished pagers produced from these imported subassemblies are include in Motorola's data for U.S. production and shipments.

Employment and wages

Total employment of production and related workers producing high-capacity pagers at Motorola's two production facilities declined from * * * employees in 1979 to * * * in 1980, but then rebounded to * * * in 1981 (table 6). In January-June 1982, the number of employees increased by * * * over the number employed in the corresponding period of 1981; this increase corresponds to the * * * increase in high-capacity pager production by Motorola in the same period (see U.S. production section). Employment over the entire period, increased by * * *.

Hours worked by these manufacturing employees rose * * * from 1979 to 1981. Hours worked dropped by * * * from 1979 to 1980--equaling the decline in employment--and then rose by * * * from 1980 to 1981, about * * * less than the increase in employment during the same period. Hours worked increased by * * * from January-June 1981 to January-June 1982.

1/ * * *.

2/ * * *.

Table 6.--Average number of U.S. production and related workers engaged in the manufacture of high-capacity radio pagers, hours worked by such workers, wages paid, total compensation, and productivity, 1979-81, January-June 1981, and January-June 1982.

Item	1979	1980	1981	January-June--	
				1981	1982
Number of workers-----	***	***	***	***	***
Increase or decrease from					
previous period--percent--	<u>1/</u>	***	***	<u>1/</u>	***
Hours worked-----thousands--	***	***	***	***	***
Increase or decrease from					
previous period--percent--	<u>1/</u>	***	***	<u>1/</u>	***
Hours worked-----per worker--	***	***	***	***	***
Increase or decrease from					
previous period--percent--	<u>1/</u>	***	***	<u>1/</u>	<u>2/</u>
Wages paid-----per hour--	***	***	***	***	***
Increase or decrease from					
previous period--percent--	<u>1/</u>	***	***	<u>1/</u>	***
Compensation-----per hour--	***	***	***	***	***
Increase or decrease from					
previous period--percent--	<u>1/</u>	***	***	<u>1/</u>	***
Productivity					
units per hour--	***	***	***	***	***
Increase or decrease from					
previous period--percent--	<u>1/</u>	***	***	<u>1/</u>	***
Unit labor cost---per unit--	***	***	***	***	***
Increase or decrease from					
previous period--percent--	<u>1/</u>	***	***	<u>1/</u>	***
<u>1/</u> * * *.					
<u>2/</u> * * *.					

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

Hourly wages for production workers increased steadily over the period, from * * * in 1979 to * * * 1981, or by * * * percent. Wages averaged about * * * per hour in January-June 1982. 1/ Hourly compensation (wages plus fringe benefits) increased from * * * in 1979 to * * * in 1980 and to * * * in 1981.

Labor productivity (output per hour) increased irregularly from * * * units per hour in 1979 to * * * units per hour in January-June 1982, or by * * *. Unit labor costs during the same period declined irregularly from * * * unit in 1979 to * * * per unit in January-June 1982, or by * * *.

1/ * * *.

Financial experience of U.S. producers

Profit-and-loss data, on an establishment basis and for high-capacity pagers, were received from Motorola, which accounted for * * * of total U.S. production of high-capacity pagers in 1981.

* * * * *

Table 7.--Profit-and-loss experience of Motorola, Inc., on its operations producing high-capacity pagers and on overall establishment operations, 1979-81, January-June 1981 and January-June 1982

Item	1979	1980	1981	January-June--	
				1981	1982
Operations on high-capacity pagers and alerting receiving devices					
Net sales----1,000 dollars--:	***	***	***	***	***
Cost of goods sold----do-----:	***	***	***	***	***
Gross profit-----do-----:	***	***	***	***	***
General, selling, and admin-:	:	:	:	:	:
istrative expenses	:	:	:	:	:
1,000 dollars--:	***	***	***	***	***
Operating profit or (loss) :	:	:	:	:	:
1,000 dollars--:	***	***	***	***	***
Interest expense-----do-----:	***	***	***	***	***
Other income or (expense) :	:	:	:	:	:
1,000 dollars--:	***	***	***	***	***
Net profit or (loss) before :	:	:	:	:	:
income taxes	:	:	:	:	:
1,000 dollars--:	***	***	***	***	***
Cash flow or (deficit) from :	:	:	:	:	:
operations, 1/	:	:	:	:	:
1,000 dollars--:	***	***	***	***	***
As a share of net sales:	:	:	:	:	:
Operating profit	:	:	:	:	:
percent--:	***	***	***	***	***
Net profit or (loss) :	:	:	:	:	:
before income taxes	:	:	:	:	:
percent--:	***	***	***	***	***
Gross profit-----do-----:	***	***	***	***	***
Cost of goods sold--do-----:	***	***	***	***	***
General, selling, and ad- :	:	:	:	:	:
ministrative expenses	:	:	:	:	:
percent--:	***	***	***	***	***
All operations of establishments where high-capacity pagers are produced					
Net sales----1,000 dollars--:	***	***	***	***	***
Cost of goods sold----do-----:	***	***	***	***	***
Gross profit-----do-----:	***	***	***	***	***
General, selling and admin- :	:	:	:	:	:
istrative expenses	:	:	:	:	:
1,000 dollars--:	***	***	***	***	***

See footnote at end of table.

Table 7.--Profit-and-loss experience of Motorola, Inc., on its operations producing high-capacity pagers and on overall establishment operations, 1979-81, January-June 1981 and January-June 1982--Continued

Item	:	1979	:	1980	:	1981	:	January-June--	
								1981	1982
All operations of establishments where high-capacity pagers are produced--Con.									
Operating profit-----do----	:	***	:	***	:	***	:	***	***
Interest expense-----do----	:	***	:	***	:	***	:	***	***
Other income or (expense)	:	:	:	:	:	:	:	:	:
1,000 dollars--	:	***	:	***	:	***	:	***	***
Net profit before income	:	:	:	:	:	:	:	:	:
taxes-----do----	:	***	:	***	:	***	:	***	***
Cash flow or (deficit) from	:	:	:	:	:	:	:	:	:
operations, 1/	:	:	:	:	:	:	:	:	:
1,000 dollars--	:	***	:	***	:	***	:	***	***
As a share of net sales:	:	:	:	:	:	:	:	:	:
Operating profit	:	:	:	:	:	:	:	:	:
percent--	:	***	:	***	:	***	:	***	***
Net profit before income	:	:	:	:	:	:	:	:	:
taxes-----percent--	:	***	:	***	:	***	:	***	***
Gross profit-----do----	:	***	:	***	:	***	:	***	***
Cost of goods sold--do----	:	***	:	***	:	***	:	***	***
General, selling, and ad-	:	:	:	:	:	:	:	:	:
ministrative expenses	:	:	:	:	:	:	:	:	:
percent--	:	***	:	***	:	***	:	***	***
	:	:	:	:	:	:	:	:	:

1/ Net profit or (loss) before income taxes plus depreciation and amortization.

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

* * * * *

Table 8.--Profit-and-loss experience of Motorola Inc. on its high-capacity pagers on an unit basis, 1979-81, January-June 1981, and January-June 1982

Item	1979	1980	1981	January-June--	
				1981	1982
Total units sold-----	***	***	***	***	***
Average selling price					
per unit--	***	***	***	***	***
Average raw-materials cost					
per unit--	***	***	***	***	***
Average direct labor cost					
per unit--	***	***	***	***	***
Average factory cost					
per unit--	***	***	***	***	***
Average total manufactur-					
ing cost-----per unit--	***	***	***	***	***
Average gross profit					
per unit--	***	***	***	***	***
Average general, selling,					
and administrative ex-					
penses-----per unit--	***	***	***	***	***
Average operating profit or					
(loss)-----per unit--	***	***	***	***	***

* * * * *

Consideration of the Causal Relationship Between Alleged LTFV Imports and the Alleged Injury

Market penetration of alleged LTFV imports

U.S. imports of all high-capacity pagers from Japan captured an increasing share of an expanding market during the period under review. Such imports increased as a share of apparent consumption from * * * percent in 1979 to * * * percent in 1980 and to * * * percent in 1981. In January-June 1982, imports increased their share of the U.S. market to * * * percent, which was almost double the market share attained in the corresponding period of 1981 (table 9).

Table 9.--High-capacity pagers: U.S. producers' domestic shipments, imports for consumption from Japan, by firms, and total imports, and apparent consumption, 1979-1981, January-June 1981, and January-June 1982

Period and type	: Domestic : shipments	: NEC : imports	: MCI 1/ : imports	: Total : imports : from : Japan	: Total all: : imports	: Apparent : consump- : tion
	-----Units-----					
1979:	:	:	:	:	:	:
Tone-only-----	: ***	: ***	: ***	: ***	: ***	: ***
Display-----	: ***	: ***	: ***	: ***	: ***	: ***
Total-----	: ***	: ***	: ***	: ***	: ***	: ***
1980:	:	:	:	:	:	:
Tone-only-----	: ***	: ***	: ***	: ***	: ***	: ***
Display-----	: ***	: ***	: ***	: ***	: ***	: ***
Total-----	: ***	: ***	: ***	: ***	: ***	: ***
1981:	:	:	:	:	:	:
Tone-only-----	: ***	: ***	: ***	: ***	: ***	: ***
Display-----	: ***	: ***	: ***	: ***	: ***	: ***
Total-----	: ***	: ***	: ***	: ***	: ***	: ***
Jan.-June 1981:	:	:	:	:	:	:
Tone-only-----	: ***	: ***	: ***	: ***	: ***	: ***
Display-----	: ***	: ***	: ***	: ***	: ***	: ***
Total-----	: ***	: ***	: ***	: ***	: ***	: ***
Jan.-June 1982:	:	:	:	:	:	:
Tone-only-----	: ***	: ***	: ***	: ***	: ***	: ***
Display-----	: ***	: ***	: ***	: ***	: ***	: ***
Total-----	: ***	: ***	: ***	: ***	: ***	: ***
	:	:	:	:	:	:

See footnotes at end of table.

Table 9.--High-capacity pagers: U.S. producers' domestic shipments, imports for consumption from Japan, by firms, and total imports, and apparent consumption, 1979-1981, January-June 1981, and January-June 1982--Continued

Period and product	Ratio of imports to consumption			
	NEC	MCI	Total Japan	Total imports
	Percent			
1979:				
Tone-only-----	***	***	***	***
Display-----	***	***	***	***
Total-----	***	***	***	***
1980:				
Tone-only-----	***	***	***	***
Display-----	***	***	***	***
Total-----	***	***	***	***
1981:				
Tone-only-----	***	***	***	***
Display-----	***	***	***	***
Total-----	***	***	***	***
Jan.-June 1981:				
Tone-only-----	***	***	***	***
Display-----	***	***	***	***
Total-----	***	***	***	***
Jan.-June 1982:				
Tone-only-----	***	***	***	***
Display-----	***	***	***	***
Total-----	***	***	***	***

1/ Based on MCI export data. The January-June 1981-82 data includes data for the month of July.

2/ * * *.

3/ * * *.

4/ * * *.

5/ * * *.

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

Market penetration of Japanese high-capacity tone-only pagers increased from * * * percent in 1979 to * * * percent in 1980 and then declined to * * * percent in 1981. In January-June 1982 the market share declined to * * * percent.

In 1981, NEC began to market high-capacity display pagers. In the absence of any competing U.S.-produced display pager, NEC captured a * * * market share of the market in 1981 and * * * in January-June 1982. It is the growth of imports of display pagers from Japan that pushed the total market share of imports from Japan to * * * in June 1982. Motorola entered the display pager market in * * * 1982, * * *.

Threat of injury

MCI's production plant where high-capacity pagers are produced is * * *. Japan. MCI's domestic production of the * * * for fiscal years 1980-82 (August-July) are as follows:

<u>Period</u>	<u>In units</u>
August 1979-July 1980-----	***
August 1980-July 1981-----	***
August 1981-July 1982-----	***

MCI estimates its current production capacity at * * *. Thus the plant is presently operating * * *. Production of MCI's POCSAG pagers for export to the the United States and other countries * * *. MCI's export shipments (including exports to the United States) of POCSAG pagers are as follows:

<u>Period</u>	<u>In units</u>
August 1979-July 1980-----	***
August 1980-July 1981-----	***
August 1981-July 1982-----	***

Besides the United States, MCI's major customers for pager exports are * * *.

NEC provided the Commission with only limited data on its production and capacity for January-June 1982. The capacity of NEC's plant to produce all types of pagers, high and low-capacity and the NTT pagers was estimated at * * * units, with production of all types amounting to * * * units for January-June 1982 period. Thus, the apparent capacity utilization rate for NEC's pager production facility in January-June 1982 was * * *.

Prices

The Commission asked the U.S. producer and the importers for data on their quarterly f.o.b. and delivered prices on sales to major customers from January 1980 through June 1982. Pricing information was solicited for both tone-only and tone-and-display high-capacity pagers. The Commission received pricing information directly from Motorola and NEC, but because MCI shipped its pagers directly to U.S. purchasers, prices for MCI's pagers were derived from reported imports by * * *.

Motorola and NEC provided only f.o.b. prices; MCI's are delivered prices. MCI's prices normally would be adjusted downward by the amount of delivery costs to achieve directly comparable data. However, because delivery costs for MCI's pagers are unknown, only the prices reported by Motorola and NEC are directly comparable.

The Commission received pricing information for both NEC and Motorola covering 1980, 1981, and January-June 1982. MCI began to seek orders in the United States for pagers in late 1981 and began delivery in 1982. Thus, only two quarters of data, January-March and April-June 1982, are available for MCI.

An examination of the prices and performance characteristics of all the various models of tone-only pagers suggests that all tone-only pagers compete with each other, primarily on the basis of price. Therefore, comparisons are for the most popular units of each manufacturer. 1/

NEC was the sole supplier of display pagers to the U.S. market during the entire period of this investigation. However, January-June 1982 * * * and for comparative purposes, known price quotes * * * are reported for them in the discussion below.

Trends in pricing.--Prices for both domestic and Japanese tone-only pagers were virtually unchanged throughout 1980 and in the first three quarters of 1981, with Motorola's most popular tone-only pager consistently selling at about * * * and NEC's comparable pager selling at about * * * (table 10). Concurrent with MCI's late 1981 entry into the U.S. market at an average delivered price of * * * the price of domestically produced pagers dropped by * * * to a weighted average price of * * * in the final quarter of 1981. Motorola's price declined by another * * * to * * * in the first quarter of 1982. The reason for the decrease in weighted average prices was Motorola's decision to drop its price to * * * for a sale of * * * units to * * * in the fourth quarter of 1981, and subsequently to * * * for a sale of * * * units in the first quarter of 1982 and * * * for a sale of * * * units in the second quarter. As mentioned earlier, * * * of Motorola's sales in 1982. NEC did not reduce its price for tone-only pagers until * * *. At that time NEC lowered its price by * * * to * * *.

Display pagers were priced about * * * higher than tone-only models when introduced in the U.S. market in 1981 (table 11). As stated previously, NEC was the sole supplier of display pagers to the United States throughout the period under investigation. NEC's prices declined slightly, by * * * from * * * in April 1981 to * * * in June 1982.

* * * Motorola intends to begin shipping large quantities of display pagers in the second half of 1982. Motorola intends to begin shipping at a weighted average price of approximately * * * with approximately * * * units going to * * * at a price of * * *. The * * * order represents * * * of the display pagers Motorola has contracted to supply in 1982. According to Panasonic Industrial Co., the marketing arm for MCI in the United States, * * *.

Margins of underselling.--NEC undersold Motorola by * * * on tone-only pagers, or by about * * * throughout 1980 and the first three quarters of 1981. * * *. Motorola's average price was * * * and MCI's average delivered price was * * *. * * *.

1/ These include the Motorola Metrx (analog) pager, the NEC PR-150B5-4A (analog) pager, and the MCI EK-2068-EA pager.

Table 10.--Tone-only pagers: U.S. producers' and importers' prices, 1/
by quarters, January 1980-June 1982

Period	Motorola	Importers Japanese producers			Margins of under selling or (overselling)					
					NEC	MCI		Average		
		NEC	MCI	Average	Amount	As a percent: of domestic producers' prices	Actual	As a percent: of domestic producers' prices	Amount	As a percent of domestic producers' prices
1980:										
January-March-----	***	***	***	***	***	***	***	***	***	***
April-June-----	***	***	***	***	***	***	***	***	***	***
July-September-----	***	***	***	***	***	***	***	***	***	***
October-December----	***	***	***	***	***	***	***	***	***	***
1981:										
January-March-----	***	***	***	***	***	***	***	***	***	***
April-June-----	***	***		***	***	***	***	***	***	***
July-September-----	***	***		***	***	***	***	***	***	***
October-December----	***	***	***	***	***	***	***	***	***	***
1982:										
January-March-----	***	***	***	***	***	***	***	***	***	***
April-June-----	***	***	***	***	***	***	***	***	***	***

1/ Weighted averages of U.S. and importers' prices to their 3 largest customers.

2/ No sales.

Table 11.--Display pagers: U.S. producers' and importers' prices, 1/ by quarters, January 1980-June 1982

Period	Motorola	Importers Japanese producers			Margins of under selling or (overselling)					
		NEC	MCI	Average	Amount	NEC	Actual	MCI	Amount	Average
						As a percent		As a percent		As a percent
						of domestic producers' prices		of domestic producers' prices		of domestic producers' prices
1980:										
January-March-----	***	***	***	***	-	-	-	-	-	-
April-June-----	***	***	***	***	-	-	-	-	-	-
July-September----	***	***	***	***	-	-	-	-	-	-
October-December---	***	***	***	***	-	-	-	-	-	-
1981:										
January-March-----	***	***	***	***	-	-	-	-	-	-
April-June-----	***	***	***	***	-	-	-	-	-	-
July-September----	***	***	***	***	-	-	-	-	-	-
October-December---	***	***	***	***	-	-	-	-	-	-
1982:										
January-March-----	***	***	***	***	-	-	-	-	-	-
April-June-----	***	***	***	***	-	-	-	-	-	-

1/ Weighted averages of U.S. and importers' prices to their 3 largest customers.2/ No sales.

MCI began offering its tone-only pager in the United States in late 1981 at a price of about * * *. At that time, Motorola's list price (the price it quotes customers) stood at * * *. * * *.

As mentioned previously, neither Motorola nor MCI sold display pagers in the United States during the period of this investigation. * * *.

Lost sales

Motorola supplied the Commission with a list of eight firms to which it allegedly lost sales because of imports from Japan. The alleged lost sales involved approximately * * * high-capacity pagers having an average offering price of * * * or a total value of * * *. These lost sales were reported to have occurred during June 1980-June 1982.

The Commission contacted all eight purchasing firms, and confirmed that six of the purchasers had shifted from domestic to Japanese suppliers. Price was identified as a major factor in three of these shifts. Price also appeared to be a factor in a fourth lost sale. Several of the companies said quality and ease of maintenance were important considerations in deciding to purchase the Japanese pagers. One company, ICS advised that technical differences between the Japanese and U.S. pagers were its primary concern, * * *.

Two of the companies Motorola cited in its allegations would not discuss the sales with the Commission's staff.

Details of the six shifts in suppliers are as follows:

Purchasing company	: Japanese company	: Quantity involved	: Domestic offered price	: Foreign offered price
1. ICS-----	: MCI	: ***	: ***	: ***
2. Gencom-----	: MCI	: ***	: ***	: ***
3. * * *-----	: * * *	: ***	: ***	: ***
4. * * *-----	: * * *	: ***	: ***	: ***
5. * * *-----	: * * *	: ***	: ***	: ***
6. * * *-----	: * * *	: ***	: ***	: ***
	:	:	:	:

1/ * * *.

2/ * * *.

Motorola alleged that it lost a sale of * * * pagers to * * * in late 1981, the * * * cited in its lost-sales allegations. ICS, the major radio common carrier (RCC) in the Los Angeles area, confirmed that it chose MCI to supply * * * tone-only pager units, * * *. However, in its submission to the record (September 8, 1982), ICS maintained that Motorola failed to offer a POCSAG pager in response to ICS' bid announcement. ICS said that it had specified POCSAG pagers in that announcement because of its pressing need to use the channels more efficiently. Motorola does not sell a POCSAG pager in the United States, but the company claims that it can make the signaling speed of its pagers operate as fast as that of the MCI model, a factor which influences how efficiently the channels are used.

ICS paid * * * for the MCI units (based upon ICS' reported imports of pagers from Japan). That price is * * *. On the basis of a purchase of * * * units, ICS saved * * * by buying the Matsushita pager.

* * * * *

Another alleged lost sale also involved MCI. Motorola alleged that it lost sales of * * * units to Gencom, a major RCC located in Dallas, Tex. The purchasing manager stated that the company had contracted in 1981 to buy * * * tone-only pager units from MCI for delivery in 1982. According to Gencom's questionnaire response, it received * * * units in 1982 at an average cost of * * * per unit, which was * * *. Assuming a purchase of * * * units, the company saved * * * by purchasing the MCI product. In the October 30, 1981, issue of Telocator Bulletin, the former president of Gencom is quoted as saying that Motorola could not meet MCI's competitive price. ^{1/} The Commission could not get formal confirmation of that statement. The Gencom spokesman claimed that Motorola * * *.

According to Motorola, approximately * * * units were involved in lost sales to * * *.

Motorola alleged that it lost sales to * * * of about * * * units purchased by * * * in 1980 and 1981.

* * * * *

^{1/} Telocator Bulletin, Oct. 30, 1981, p. 1.

APPENDIX A

NOTICE OF COMMISSION'S INVESTIGATION AND CONFERENCE
AND DEPARTMENT OF COMMERCE'S NOTICE OF INITIATION
OF ANTIDUMPING INVESTIGATION

**Certain Radio Paging and Alerting
Receiving Devices From Japan**

AGENCY: International Trade
Commission.

ACTION: Institution of preliminary
antidumping investigation and

scheduling of a conference to be held in
connection with the investigation.

EFFECTIVE DATE: August 20, 1982.

SUMMARY: The U.S. International Trade
Commission hereby gives notice of the
institution of investigation No. 731-TA-
102 (Preliminary) under section 733(a) of
the Tariff Act of 1930 (19 U.S.C. 167b(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 certain
radio paging and altering receiving
devices, provided for in items 685.24 and
685.70 of the Tariff Schedules of the
United States, which are allegedly being
sold in the United States at less than fair
value (LTFV).

FOR FURTHER INFORMATION CONTACT:
Mr. Bill Schechter, Office of
Investigations, U.S. International Trade
Commission; telephone 202/523-0300.

SUPPLEMENTARY INFORMATION:

Background

This investigation is being instituted
following receipt of a petition filed by
counsel for Motorola Inc., Schaumburg,
Ill. A nonconfidential copy of the
petition is available for public
inspection during official working hours
(8:45 a.m. to 5:15 p.m.) in the Office of the
Secretary U.S. International Trade
Commission, 701 E Street, NW.,
Washington, D.C. 20436, telephone (202-
523-0448). The Commission must make
its determination in this investigation
within 45 days after the date of the filing
of the petition, or by October 4, 1982 (19
CFR 207.17). This investigation will be
subject to the provisions of part 207 of
the Commission's Rules of Practices and
Procedure (19 CFR 207, 44 FR 76457 and
47 FR 6190), and particularly Subpart B
thereof.

Person wishing to participate in this
investigation as parties must file an
entry of appearance with the Secretary
to the Commission not later than
September 1, 1982. (19 CFR 201.11). Any
entry of appearance filed after this date
will be referred to the Chairman, who
shall determine whether to accept the
late entry for good cause shown by the
person desiring to file the notice.

Service of Documents

The Secretary will compile a service
list from the entries of appearance filed
in this investigation. Any party
submitting a document in connection
with the investigation shall, in addition
to complying with § 201.8 of the
Commission's rules (19 CFR 201.8), serve
a copy of each such document on all

other parties to the investigation. Such
service shall conform with the
requirements set forth in § 201.16(b) of
the rules (19 CFR 201.16(b)).

In addition to the foregoing, each
document filed with the Commission in
the course of this investigation must
include a certificate of service setting
forth the manner and date of such
service. This certificate will be deemed
proof of service of the document.
Documents not accompanied by a
certificate of service will not be
accepted by the Secretary.

Written Submissions

Any person may submit to the
Commission on or before September
13, 1982, a written statement of
information pertinent to the subject
matter of this investigation (19 CFR
207.15). A signed original and fourteen
(14) copies of such statements must be
submitted (19 CFR 201.8).

Any business information which a
submitter desires the Commission to
treat as confidential shall be submitted
separately, and each sheet must be
clearly marked at the top "Confidential
Business Data." Confidential
submissions must conform with the
requirements of § 201.6 of the
Commission's Rules of Practice and
Procedure (19 CFR 201.6). All written
submissions, except for confidential
business data, will be available for
public inspection.

Conference

The Director of Operations of the
Commission has scheduled a conference
in connection with this investigation for
9:30 a.m., on September 9, 1982, at the
U.S. International Trade Commission
Building, 701 E Street, NW., Washington,
D.C. Parties wishing to participate in the
conference should contact the
supervisory investigator for the
investigation, Mr. Jim McClure,
telephone 202/523-0439, not later than
September 3, 1982, to arrange for their
appearance. Parties in support of the
imposition of antidumping duties 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.

For further information concerning the
conduct of this investigation and rules of
general application, consult the
Commission's Rules of Practice and
Procedures, Part 207, Subparts A and B
(19 CFR 207), and Part 201, subpart A
through E (19 CFR 201), 47 FR 6182,
February 10, 1982. Further information
concerning the conduct of the
conference will be provided by Mr.
McClure.

This notice is published pursuant to
§ 207.12 of the Commission's Rules of
Practice and Procedure (19 CFR 207.12).

By order of the Commission.

Issued: August 20, 1982.

Kenneth R. Mason,

Secretary.

[FR Doc 82-23250 Filed 8-24-82; 8:45 am]

BILLING CODE 7020-02-M

The Department shall determine, and the U.S. Customs Service shall assess, dumping duties on all appropriate entries made with purchase dates or export dates during the time periods involved. Individual differences between United States price and foreign market value may vary from the percentage stated above for Diamond Stylus/Phono Stylus (importer). The Department will issue assessment instructions on each exporter directly to the Customs Service.

Further, as provided for in § 353.48 (b) of the Commerce regulations, a cash deposit of estimated antidumping duties based on the margins calculated above shall be required on all shipments of diamond tips for phonograph needles by the remaining firms entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice. For any shipment from a new exporter not covered in this review, unrelated to a covered firm, a cash deposit shall be required at the highest rate for responding firms with shipments during the period of this review.

These deposit requirements shall remain in effect until publication of the final results of the next administrative review. The Department intends to conduct the next administrative review by the end of April 1983. The Department encourages interested parties to review the public record and submit applications for protective orders, if desired, as early as possible after the Department's receipt of the information during the next administrative review.

This administrative review, partial revocation, and notice are in accordance with sections 751 (a) (1) and (c) of the Tariff Act of 1930 (19 U.S.C. 1675 (a) (1), (c)) and §§ 353.53 and 353.54 of the Commerce Regulations (19 CFR 353.53, 353.54).

Gary N. Horlick,

Deputy Assistant Secretary for Import Administration.

September 8, 1982.

[FR Doc. 82-25319 Filed 9-14-82; 8:45 am]

BILLING CODE 3510-25-M

High-Capacity Pagers From Japan; Initiation of Antidumping Investigation

AGENCY: International Trade Administration, Commerce.

ACTION: Initiation of Antidumping Investigation.

SUMMARY: On the basis of a petition filed in proper form with the United States Department of Commerce, we are initiating an antidumping investigation

to determine whether high-capacity pagers from Japan are being, or are likely to be, sold in the United States at less than fair value. We are notifying the United States International Trade Commission ("ITC") of this action so that it may determine whether imports of this merchandise are materially injuring, or are threatening to materially injure, a United States industry. If the investigation proceeds normally, the ITC will make its preliminary determination on or before October 4, 1982, and we will make ours on or before January 26, 1983.

EFFECTIVE DATE: September 15, 1982.

FOR FURTHER INFORMATION CONTACT: Richard Rimlinger, Office of Investigations, Import Administration, International Trade Administration, United States Department of Commerce, 14th Street and Constitution Avenue NW., Washington, D.C. 20230; telephone (202) 377-4136.

SUPPLEMENTARY INFORMATION:

The Petition

On August 19, 1982, we received a petition from counsel for Motorola, Inc., on behalf of the United States industry manufacturing high-capacity pagers. In compliance with the filing requirements of § 353.36 of the Commerce Regulation (19 CFR 353.36), the petition alleges that imports of the subject merchandise 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 Act, and that these imports are materially injuring, or are threatening to materially injure, a United States industry. The allegation of sales at less than fair value is supported by comparisons of United States prices developed from actual quotations on sales of the merchandise in the United States with Japanese home market prices obtained from actual quotations on sales made in Japan.

Initiation of Investigation

Under section 732(c) of the Tariff Act of 1930, as amended (19 U.S.C. 1673a) ("the Act"), we must determine, within 20 days after the petition is filed, whether it sets forth the allegations necessary for the initiation of an antidumping investigation and whether it contains information reasonably available to the petitioner supporting the allegation. We have examined the petition filed by the industry, and we have found that it meets the requirements of section 732(b) of the Act. Therefore, we are initiating an antidumping investigation to determine whether high-capacity pagers from Japan are being, or are likely to be, sold

at less than fair value in the United States. If our investigation proceeds normally, we will make our preliminary determination by January 26, 1983.

Scope of the Investigation

The merchandise covered by this investigation is high-capacity pagers (paging signal receivers 3,000 or more of which can be operated in a paging system on a single radio frequency channel). This investigation is intended to cover all high-capacity pagers regardless of tariff classification. Specifically covered are *Tariff Schedules of the United States* ("TSUS") item numbers: 685.24 ("solid-state (tubeless) radio receivers"), 685.2475 (radio receives "above 30 MHz, but not over 400 MHz"), 685.2480 (receives "above 400 MHz, but not over 1,000 MHz"), and 685.7935 (other "sound signalling apparatus").

Notification to ITC

Section 732(d) of the Act requires us to notify the United States International Trade Commission 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 nonconfidential information. We will also allow the ITC access to all privileges and confidential information in our files, provided it confirms that it will not disclose such information either publicly or under an administrative protective order without the consent of the Deputy Assistant Secretary of Import Administration.

Preliminary Determination by ITC

The ITC will determine within 45 days whether there is a reasonable indication that imports of high-capacity pagers from Japan are materially injuring, or are likely to materially injure, a United States industry. If its determination is negative, this investigation will terminate; otherwise, it will proceed according to the statutory procedures.

Gary N. Horlick,

Deputy Assistant Secretary for Import Administration.

September 8, 1982.

[FR Doc. 82-25326 Filed 9-14-82; 8:45 am]

BILLING CODE 3510-25-M

Leather Wearing Apparel From Colombia; Final Results of Administrative Review of Suspension Agreement

AGENCY: International Trade Administration, Commerce.

APPENDIX B

LIST OF WITNESSES APPEARING AT THE CONFERENCE

CALENDAR OF PUBLIC CONFERENCE

Investigation No. 731-TA-102 (Preliminary)

CERTAIN RADIO PAGING AND ALERTING RECEIVING DEVICES FROM JAPAN

Those listed below are scheduled to appear as witnesses at the United States International Trade Commission conference held in connection with the subject investigation beginning at 9:30 a.m., e.d.t., Thursday, September 9, 1982, in the Hearing Room of the USITC Building, 701 E Street, N.W., Washington, D.C.

<u>In support of the imposition of</u> <u>antidumping duties</u>	<u>Alloted time</u> <u>(minutes)</u>
---	---

60

Covington and Burling--Counsel
Washington, D.C.
on behalf of

Motorola, Inc.
Mr. George Fisher, Vice President, Motorola, Inc.
Gen. Mgr., Paging Division

Mr. Harvey M. Applebaum)
Mr. John B. Warden)--OF COUNSEL
Mr. Timothy A. Harr)

In opposition to the imposition of
antidumping duties

Weil, Gotshal and Manges--Counsel
New York, New York
on behalf of

60

Matsushita Electric Corp.

Mr. John G. Reilly, ICF Incorporated
Mr. Chris N. Kolaitis, Asst. Gen. Mgr., Information Systems Div.,
Panasonic Industrial Co., Div. of Matsushita Electric Corp. of
America

Mr. A. Paul Victor)
Mr. Stuart M. Rosen)--OF COUNSEL
Mr. Charles Bayar)
Mr. Miriam Cutler)

Coudert Brothers--Counsel
Washington, D.C.
on behalf of

Nippon Electric Company, Ltd.
NEC of America, Inc.

Mr. Arthur K. Peters, Arthur K. Peters Consulting Engineers

Mr. Michael Calvey)
Mr. Milo Coerper)--OF COUNSEL
Mr. Charles Stevens)

Don R. Windle, P.C.
Austin, Texas
on behalf of

National Marketing, Inc.

Don R. Windle--OF COUNSEL

APPENDIX C

BASIC RADIO PAGING SYSTEMS

BASIC RADIO PAGING SYSTEMS

A radio paging and alerting system is a radio broadcast system which can deliver messages (usually short) to individual subscribers equipped with special receivers. In the most basic systems the paging receiver simply alerts the subscriber that he or she has a message waiting at some prearranged location such as the paging company offices or the subscriber's own home or office. The subscriber must then either call the office or stop by to receive the message. Paging systems deliver signals in only one direction, from the transmitter to subscriber's receiver. The paging system consists of transmitters, encoders, and paging receivers.

Typically, the system employs one or more transmitters and encoders to broadcast address coded messages. In a basic system, the coded message is the electronic address of an individual radio paging receiver. The receiver is so designed as to respond only to its own coded address receiver. Thus a single transmitter can send messages (or alert signals) to a number of individual subscribers each of whom carry receivers with different electronic addresses. To put it another way, the transmitter station, by appropriate message encoding can select the individual subscriber to whom a message is sent.

In the basic system, the individual paging receiver once alerted by the transmitter simply emits an audible alarm such as a high-pitched note or musical tone. Thus is derived the name tone-only pager or, in the vernacular, "beeper." In this simple tone-only paging system the individual subscriber must have a prearranged understanding as to the meaning of the alert signal.

The paging transmitter operates on a single frequency and broadcasts to many receivers. The radio frequencies generally used for paging services are line of sight (or nearly so), and thus, if large areas are to be covered, several transmitters may be required. In high-rise, congested metropolitan areas, several transmitters are used to overcome the shadows or multipath reflections created by tall buildings.

The address message encoder converts the numerical address of a subscriber into the electronic signal format which can be recognized by the individual receiver. There are two principal types of encoders, manual and automatic. The manual encoder requires an operator to key in the address numbers. The automatic encoders can be connected to the incoming phone lines in the paging company office and will create a paging address directly from telephone dial signals without human intervention.

In operation, someone wishing to page a subscriber calls the paging company as shown in the following diagram on page A-- with a short message for the subscriber. Depending on the type of receiver available to the subscriber, the message is either delivered directly to the subscriber's receiver, or the receiver simply alerts the user that a message is waiting at the paging company office (or other prearranged location).

