

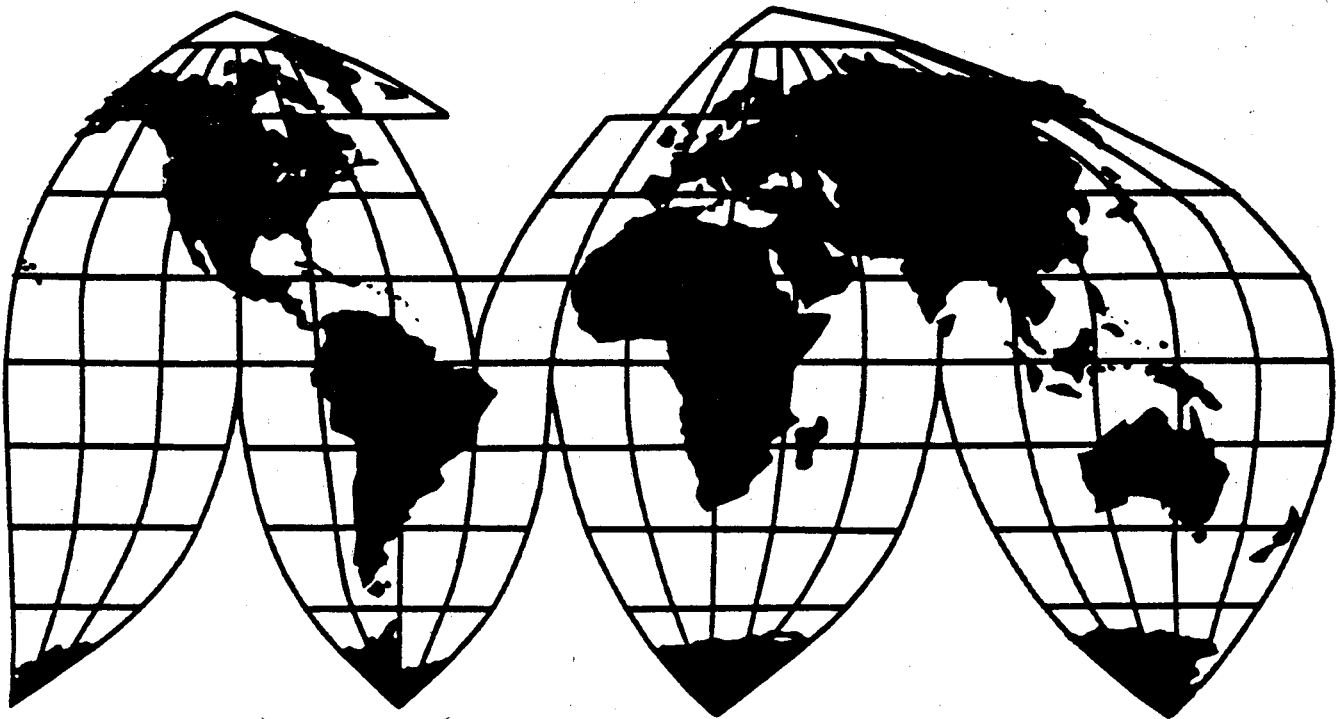
In the Matter of
Certain Audible Devices for Divers

Investigation No. 337-TA-365

Publication 2903

August 1995

U.S. International Trade Commission



U.S. International Trade Commission

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Washington, DC 20436**

U.S. International Trade Commission

Washington, DC 20436

In the Matter of **Certain Audible Devices for Divers**



Publication 2903

August 1995

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

In the Matter of)
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CERTAIN AUDIBLE ALARM)
SYSTEMS FOR DIVERS)
)

Investigation No. 337-TA-365

NOTICE OF ISSUANCE OF LIMITED EXCLUSION ORDER
AND CEASE AND DESIST ORDER

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has issued a limited exclusion order and a cease and desist order in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Anjali K. Singh, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-3117.

SUPPLEMENTARY INFORMATION: The authority for the Commission's determinations is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), and in section 210.58 of the Commission's Interim Rules of Practice and Procedure (19 C.F.R. 210.58).

The Commission instituted this investigation on May 31, 1994, based upon a complaint filed on April 28, 1994, by David A. Hancock and Ideations Design Inc. ("complainants") alleging that IHK International Group of Torrance, California ("IHK") and Duton Industry Co., Ltd. of Taipei, Taiwan ("Duton") (collectively referred to as "respondents") had violated section 337 in the sale for importation, the importation, and the sale after importation of certain audible alarm devices for divers, by reason of infringement of claim 6 of U.S. Letters Patent 4,950,107 ('107 patent) and claim 1 of U.S.

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Letters Patent 5,106,236 ('236 patent) owned by Mr. Hancock. 59 Fed. Reg. 29615 (June 8, 1994).

On October 25, 1994, the presiding administrative law judge (ALJ) issued an initial determination (ID) (Order No. 23) finding that respondent Duton was in default. The ALJ also issued evidentiary sanctions in the form of adverse findings against Duton. On November 21, 1994, the Commission determined not to review the ID. 59 Fed. Reg. 61342 (November 30, 1994).

On February 2, 1995, the ALJ issued her final ID finding that: (1) claim 6 of the '107 patent and claim 1 of the '236 patent are valid and enforceable; (2) there is a domestic industry manufacturing and selling products protected by those two patent claims; (3) respondent IHK has imported products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent; and (4) respondent Duton has exported to the United States products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent. No petitions for review or agency comments were filed. On March 13, 1995, the Commission determined not to review the ALJ's final ID, and requested written submissions on the issues of remedy, the public interest, and bonding. 60 Fed. Reg. 14960 (March 21, 1995).

Submissions on remedy, the public interest, and bonding were received from complainants and the Commission investigative attorney (IA), both of whom also filed reply submissions on those issues.

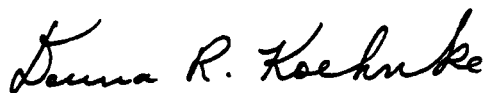
Having reviewed the record in this investigation, including the written submissions of the parties, the Commission made its determinations on the issues of remedy, the public interest, and bonding. The Commission determined that the appropriate form of relief is a limited exclusion order prohibiting the unlicensed entry for consumption of infringing audible alarm devices manufactured and/or imported by or on behalf of IHK and Duton. In addition, the Commission issued a cease and desist order directed to IHK requiring IHK to cease and desist from the following activities in the United States: importing, selling,

marketing, distributing, offering for sale, or otherwise transferring (except for exportation) in the United States infringing imported audible alarm devices.

The Commission also determined that the public interest factors enumerated in 19 U.S.C. 1337(d) and (f) do not preclude the issuance of the limited exclusion order and the cease and desist orders, and that the bond during the Presidential review period shall be in the amount of 152 percent of the entered value of the articles in question.

Copies of the Commission orders, the Commission opinion in support thereof, and all other nonconfidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-2000. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810.

By order of the Commission.



Donna R. Koehnke
Secretary

Issued: June 6, 1995

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

In the Matter of)

CERTAIN AUDIBLE)
ALARM SYSTEMS FOR DIVERS)

Investigation No. 337-TA-365

ORDER

The Commission instituted this investigation on May 31, 1994, based upon a complaint filed on April 28, 1994, by David A. Hancock and Ideations Design Inc. ("complainants") alleging that IHK International Group of Torrance, California ("IHK") and Duton Industry Co., Ltd. of Taipei, Taiwan ("Duton") (collectively referred to as "respondents") had violated section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the sale for importation, the importation, and the sale after importation of certain audible alarm devices for divers, by reason of infringement of claim 6 of U.S. Letters Patent 4,950,107 ('107 patent) and claim 1 of U.S. Letters Patent 5,106,236 ('236 patent), both of which patents are owned by Mr. Hancock. 59 Fed. Reg. 29615 (June 8, 1994).

On October 25, 1994, the presiding administrative law judge (ALJ) issued an initial determination (ID) (Order No. 23) finding that respondent Duton was in default. The ALJ also issued sanctions in the form of adverse evidentiary findings against Duton. On November 21, 1994, the Commission determined not to review Order No. 23. 59 Fed. Reg. 61342 (November 30, 1994).

On February 2, 1995, the ALJ issued her final ID finding that (1) claim 6 of the '107 patent and claim 1 of the '236 patent are valid and enforceable;

(2) there is a domestic industry manufacturing and selling products protected by those two patent claims; (3) respondent IHK has imported products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent; and (4) respondent Duton has exported to the United States products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent. No petitions for review or agency comments were filed. On March 13, 1995, the Commission determined not to review the ALJ's final ID, and requested written submissions on the issues of remedy, the public interest, and bonding. 60 Fed. Reg. 14960 (March 21, 1995). Submissions on remedy, the public interest, and bonding were received from complainants and the Commission investigative attorney (IA). Subsequently, complainants filed a motion to reopen the record for the Commission to consider newly-discovered evidence regarding the identity of an alleged additional foreign distributor/manufacturer of infringing diver alarms, and the IA filed a response to this motion.

Having reviewed the record in this investigation, including the written submissions of the parties, the Commission has made its determinations on the issues of remedy, the public interest, and bonding. The Commission has determined to grant complainants' motion to reopen the record to admit the newly-discovered evidence. The Commission has also determined that the appropriate form of relief is a limited exclusion order prohibiting the unlicensed importation of infringing audible alarm devices manufactured and/or imported by or on behalf of Duton or IHK. In addition, the Commission has issued a cease and desist order directed to IHK requiring it to cease and desist from the following activities in the United States: importing, selling, marketing, distributing, offering for sale, or otherwise transferring (except for exportation) in the United States infringing imported audible

alarm devices.

The Commission has also determined that the public interest factors enumerated in 19 U.S.C. § 1337(d) and (f) do not preclude the issuance of the limited exclusion order and the cease and desist order, and that the bond during the Presidential review period shall be in the amount of 152 percent of the entered value of the articles in question.

Accordingly, the Commission hereby **ORDERS THAT --**

1. Complainants' motion to reopen the record to admit newly-discovered evidence is granted.
2. Audible alarm devices for divers covered by claim 6 of U.S. Letters Patent 4,950,107 or claim 1 of U.S. Letters Patent 5,106,236, and manufactured and/or imported by or on behalf of IHK International Group of Torrance, California or Duton Industry Co., Ltd. of Taipei, Taiwan, or any of their affiliated companies, parents, subsidiaries, licensees, contractors, or other related entities, or their successors or assigns, are excluded from entry for consumption into the United States for the remaining term of the patents, *i.e.*, until October 12, 2008, except under license of the patent owner or as provided by law.
3. Audible alarm devices for divers manufactured and/or imported by or on behalf of IHK International Group or Duton Industry Co., Ltd., identified in paragraph 1 above, are entitled to entry into the United States under bond in the amount of one hundred fifty-two (152) percent of the entered value of such items pursuant to subsection (j) of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337(j)), from the day after this Order is received by the President, until such time as the President notifies the Commission that he approves or disapproves this action, but no later than 60 days after the date of receipt of this Order by the President.
4. In accordance with 19 U.S.C. § 1337(1), the provisions of this Order shall not apply to audible alarm devices for divers imported by and for the use of the United States, or imported for, and to be used for, the United States with the authorization or consent of the United States Government.
5. The Commission may modify this Order in accordance with the procedure described in section 210.76 of the Commission's Final Rules of Practice and Procedure, 59 Fed. Reg. 39020, 39068 (August 1, 1994).
6. The Secretary shall serve copies of this Order upon each party of record in this investigation and upon the Department of Health and Human Services, the Department of Justice, the Federal Trade Commission, and the U.S. Customs Service.

7. Notice of this Order shall be published in the Federal Register.

By order of the Commission.

Donna R. Koehnke

Donna R. Koehnke
Secretary

Issued: June 6, 1995

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

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In the Matter of)
)
CERTAIN AUDIBLE)
ALARM SYSTEMS FOR DIVERS)
_____)

Investigation No. 337-TA-365

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT IHK International Corporation, 2909 Oregon Court, B-1, Torrance California, 90503 cease and desist from importing, selling, marketing, distributing, offering for sale, or otherwise transferring (except for exportation) in the United States audible alarm devices for divers covered by claim 6 of U.S. Letters Patent 4,950,107 and/or claim 1 of U.S. Letters Patent 5,106,236, in violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337.

I.

(Definitions)

As used in this Order:

- (A) "Commission" shall mean the United States International Trade Commission.
- (B) "Complainants" shall mean David A. Hancock and Ideations Design Inc.
- (C) "Respondent" shall mean IHK International Corporation, 2909 Oregon Court, B-1, Torrance California, 90503.
- (D) "Person" shall mean an individual, or non-governmental partnership, firm, association, corporation, or other legal or business entity other than

the above Respondent or its majority owned and/or controlled subsidiaries, their successors, or assigns.

(E) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(F) "Covered product" shall mean audible alarm devices for divers covered by claim 6 of U.S. Letters Patent 4,950,107 and/or claim 1 of U.S. Letters Patent 5,106,236.

(G) The terms "import" and "importation" refer to importation for entry for consumption under the Customs laws of the United States.

II.

(Applicability)

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, distributors, controlled (whether by stock ownership or otherwise) and/or majority owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, infra, for, with, or otherwise on behalf of Respondent.

III.

(Conduct Prohibited)

The following conduct of Respondent in the United States is prohibited by this Order. Respondent shall not:

- (A) import into the United States audible alarm devices for divers covered by claim 6 of U.S. Letters Patent 4,950,107 and/or claim 1 of U.S. Letters Patent 5,106,236 for the remaining term of the patents; or
- (B) sell, market, distribute, offer for sale, or otherwise transfer (except for exportation) in the United States imported audible alarm

devices for divers covered by claim 6 of U.S. Letters Patent 4,950,107 and/or claim 1 of U.S. Letters Patent 5,106,236 for the remaining term of the patents.

IV.

(Conduct Permitted)

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if, in a written instrument, the owner of the U.S. Letters Patent 4,950,107 and/or U.S. Letters Patent 5,106,236 licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered products by or for the United States.

V.

(Reporting)

For purposes of this reporting requirement, quarterly reporting periods shall commence on March 1, June 1, September 1, and December 1 of each year, and shall end on the subsequent May 31, August 31, November 30, and the last day of February, respectively. However, the first report required under this section shall cover the period June 6, 1995, through August 31, 1995. The reporting requirement shall continue in force until the expiration of U.S. Letters Patent 4,950,107 and U.S. Letters Patent 5,106,236, unless, pursuant to subsection (j) (3) of section 337 of the Tariff Act of 1930, the President notifies the Commission within 60 days after the date he receives this Order, that he disapproves this Order; provided, however, that Respondent's reporting requirement hereunder shall cease if, in a timely filed report, Respondent shall report no sales of imported covered product during two successive quarterly reporting periods and no remaining inventory of imported covered

product.

Within thirty (30) days of the last day of each reporting period, Respondent shall report to the Commission the following:

(A) The identity of every model of foreign-made audible alarm device for divers covered by claim 6 of U.S. Letters Patent 4,950,107 and/or claim 1 of U.S. Letters Patent 5,106,236 that Respondent has imported or sold in the United States during the reporting period and/or that remains in inventory at the end of the reporting period, and

(B) The unit and dollar quantities of such imports, sales, and inventories for each model identified pursuant to subparagraph V(A) of this Order.

Any failure to report shall constitute a violation of this Order.

VI.

(Recordkeeping and Inspection)

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the importation, sale, marketing, distribution, offering for sale, or otherwise transferring in the United States of imported covered products, made and received in the usual and ordinary course of business, whether in detail or in summary form, for a period of two (2) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the Federal Courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in the principal

offices of Respondent during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, financial reports, and other records and documents, both in detail and in summary form, for the purpose of verifying any matter or statement contained in the reports required to be retained under subparagraph VI(A) of this Order.

VII.

(Service of Cease and Desist Order)

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) days after the effective date of this Order, a copy of this Order upon each of its officers, directors, managing agents, agents, and employees who have any responsibility for the importation, sale, marketing, or distribution of imported covered products in the United States;

(B) Serve, within fifteen (15) days after the succession of any persons referred to in subparagraph VII(A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) of this Order shall remain in effect until the expiration of U.S. Letters Patent 4,950,107 and U.S. Letters Patent 5,106,236.

VIII.

(Confidentiality)

Information obtained by means provided for in Sections V and VI of this Order will be made available only to the Commission and its authorized representatives, will be entitled to confidential treatment, and will not be divulged by any authorized representative of the Commission to any person other than duly authorized representatives of the Commission, except as may be required in the course of securing compliance with this Order, or as otherwise required by law. Disclosure hereunder will not be made by the Commission without ten (10) days prior notice in writing to Respondent.

IX.

(Enforcement)

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Final Rules of Practice and Procedure, 59 Fed. Reg. 39020, 39067-68 (August 1, 1994), including an action for civil penalties in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

X.

(Modification)

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Final Rules of Practice and Procedure, 59 Fed. Reg. 39020, 39068 (August 1, 1994).

XI.

(Bonding)

The conduct prohibited by Section III of this Order may be continued during the period which this Order is under review by the President pursuant to section 337(j) of the Tariff Act of 1930 (19 U.S.C. § 1337(j)), subject to Respondent posting a bond in the amount of one hundred fifty-two (152) percent of the entered value of the imported covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered products imported on or after June 6, 1995, of this Order, are subject to the entry bond as set forth in the limited exclusion order issued by the Commission on June 6, 1995, and are not subject to this bond provision.

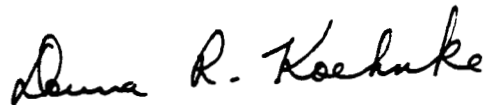
This bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. See Commission Interim Rule 210.58, 19 C.F.R. § 210.58. The bond and any accompanying documentation is to be provided to and approved by the Commission prior to the commencement of conduct which is otherwise prohibited by Section III of this Order.

The bond is to be forfeited in the event that the President approves, or does not disapprove within the Presidential review period, the Commission's Orders of June 6, 1995, or any subsequent final order issued after the completion of Investigation No. 337-TA-365, unless the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal, or unless the products subject to this bond are exported or destroyed by Respondent, and Respondent provides certification to that effect satisfactory to the Commission.

The bond is to be released in the event the President disapproves this

Order and no subsequent order is issued by the Commission and approved, or not disapproved, by the President, upon service on Respondent of an Order issued by the Commission based upon application therefor made to the Commission.

By order of the Commission.



Donna R. Koshnke
Secretary

Issued: June 6, 1995

PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

In the Matter of)
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CERTAIN AUDIBLE ALARM)
DEVICES FOR DIVERS)
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Investigation No. 337-TA-365

COMMISSION OPINION ON REMEDY, THE PUBLIC INTEREST, AND BONDING

I. INTRODUCTION

This investigation is before us for final disposition of certain issues relating to remedy, the public interest, and bonding. After review of those issues, we determine that the appropriate remedy is a limited exclusion order directed to the foreign respondent and a cease and desist order directed to the U.S. importer of the infringing products. We also determine that the public interest does not preclude the issuance of that remedy, and that the amount of the bond during the 60-day Presidential review period shall be 152 percent of the entered value of audible alarm devices that infringe claim 6 of U.S. Letters Patent 4,950,107 ('107 patent) and/or claim 1 of U.S. Letters Patent 5,106,236 ('236 patent).

II. PROCEDURAL HISTORY

On May 31, 1994, we voted to institute this investigation based upon a complaint filed by David A. Hancock and Ideations Design Inc. ("Ideations") (collectively referred to as "complainants")¹ alleging that Duton Industry Co., Ltd. of Taipei, Taiwan ("Duton") and IHK International Corp. of Torrance, California ("IHK") (collectively referred to as "respondents") had violated section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the importation, sale for importation, and sale within the United States after importation of certain audible alarm devices for divers ("diver alarms"),² by reason of infringement of claim 6 of the '107 patent and claim 1 of the '236 patent owned by Mr. Hancock. The Commission published notice of the investigation in the Federal Register on June 8, 1994, naming IHK and Duton as respondents.³

On October 25, 1994, the presiding administrative law judge (ALJ)(Judge Saxon) issued an initial determination (ID) (Order No. 23) finding Duton in default and entered evidentiary sanctions in the form of adverse findings of fact against Duton for failure to respond to discovery-related orders. On November 21, 1994, we issued a notice of our determination not to review Order No. 23.⁴

¹ Mr. Hancock is the owner of Ideations.

² Diver alarms are used to signal a scuba diver's location when the diver surfaces. They are small air-operated devices designed to be used with self-contained breathing apparatus, such as scuba equipment.

³ 59 Fed. Reg. 29615 (June 8, 1994).

⁴ 59 Fed. Reg. 61342 (Nov. 30, 1994).

On February 2, 1995, the ALJ found a violation of section 337, based upon her findings that: (1) claim 6 of the '107 patent and claim 1 of the '236 patent are valid and enforceable; (2) there is a domestic industry manufacturing and selling products protected by those two patent claims; (3) respondent IHK has imported products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent; and (4) respondent Duton has exported to the United States products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent.⁵

On March 13, 1995, we determined not to review the ALJ's final ID, thereby finding a violation of section 337 to exist. We subsequently issued a notice of our determination not to review the ID, and requested written submissions on the issues of remedy, the public interest, and bonding.⁶ Comments were received from complainants and the Commission Investigative Attorney (IA), but no comments were received from either of the respondents.

In addition, on May 8, 1995, complainants filed a motion to reopen the record for the Commission to consider newly-discovered evidence regarding the identity of an alleged additional foreign distributor/manufacturer of infringing diver alarms.⁷ On May 18, 1995, the IA filed a response to complainants' motion stating that he did not object to the admission of the newly-discovered evidence. Respondents did not file any submissions respecting the motion to reopen the record.

This opinion explains the basis for the following determinations:

- (1) Our grant of complainants' motion to reopen the record.
- (2) Our decision to issue a limited exclusion order directed to Duton.
- (3) Our decision to issue a cease and desist order directed to IHK.
- (4) Our conclusion that the public interest considerations enumerated in section 337(d) do not preclude the issuance of such relief in this investigation.
- (5) Our decision that the bond during the Presidential review period shall be in the amount of 152 percent of entered value of imported articles covered by the claims in issue of the '107 and '236 patents.

II. MOTION TO REOPEN THE RECORD

On May 8, 1995, complainants moved to reopen the record to admit newly-discovered evidence on the issue of remedy.⁸ The information concerned a Taiwanese distributor, Shintad Enterprise Co. ("Shintad"), that complainants alleged "may be manufacturing the infringing products."⁹ Complainants stated that the new evidence was discovered subsequent to the submission of their reply brief on April 10, 1995.¹⁰

⁵ No petitions for review or agency comments were filed.

⁶ The notice announcing our determination and requesting written submissions on the issues of remedy, the public interest, and bonding appeared in the Federal Register on March 21, 1995 (60 Fed. Reg. 14960).

⁷ Complainants filed a supplement to this motion on May 17, 1995.

⁸ Complainants supplemented this motion on May 17, 1995.

⁹ Complainants' Motion to Reopen the Record at 1.

¹⁰ Id.

The IA responded to the motion to reopen the record on May 18, 1995, stating that he did not oppose the admission of the newly-discovered evidence.¹¹ Respondents did not file any submissions relating to the motion to reopen the record.

We have determined to grant the motion to reopen the record. Commission interim rule 210.58(a)(4) states that the Commission shall receive submissions from parties regarding the appropriate remedy and bonding. The Commission rules do not limit such submissions to information on the record compiled before the ALJ. The Commission may make factual findings in the remedy phase of a section 337 investigation, to the extent necessary, in order to reach its remedy determination, which may be based on the evidence of record during the violation phase of the investigation, or on the basis of submissions of the parties on remedy, the public interest, and bonding.¹²

In addition, Commission interim rule 210.23 allows the ALJ to permit service of supplemental submissions when a transaction, occurrence, or event has taken place subsequent to the date of the submission sought to be supplemented. Such conditions should also allow the Commission to receive additional information during the remedy phase of the investigation.

In this case, complainants stated that they only discovered the existence of Shintad subsequent to the filing of their briefs on remedy.¹³ Thus, we find that appropriate circumstances exist to admit the newly-discovered evidence.

III. REMEDY

The Commission has broad discretion in selecting the form, scope, and extent of the remedy in a section 337 proceeding.¹⁴ Under subsections 337(d) and (f), the Commission may issue an exclusion order, a cease and desist order, or both, depending on the circumstances.¹⁵

We have determined to issue both a limited exclusion order directed to the foreign respondent Duton and a cease and desist order directed to the domestic respondent IHK. We have determined not to issue a cease and desist order directed to Duton.

A. Limited Exclusion Order

Complainants requested that we issue a general exclusion order because "Complainants face continued and, since the hearing, escalating competition from Respondents and new entrants into the market."¹⁶ The IA, on the other hand, recommended issuance of a limited exclusion order applicable

¹¹ Response of the IA to Complainants' Motion to Reopen the Record at 2-3.

¹² Sealed Air Corporation v. U.S. Int'l Trade Comm'n, 645 F.2d 976 (C.C.P.A. 1981).

¹³ See Complainants' Motion to Reopen the Record at 1 and 3.

¹⁴ Viscofan, S.A. v. United States International Trade Commission, 787 F.2d 544, 548 (Fed. Cir. 1986)(affirming Commission remedy determination in Certain Processes for the Manufacture of Skinless Sausage Casings and Resulting Products, Inv. Nos. 337-TA-148 and 169, USITC Pub. 1624 (December 1984); Hyundai Electronics Industries Col. Ltd. v. United States International Trade Commission, 899 F.2d 1204 (Fed. Cir. 1990) (affirming Commission remedy determination in Certain Erasable Programmable Read-Only Memories, Components Thereof, Products Containing Such Memories, and Processes for Making Such Memories, Inv. No. 337-TA-276, USITC Pub. 2196 (May 1989)).

¹⁵ 19 U.S.C. § 1337(d)-(f).

¹⁶ Complainant's Submission on the Issues of Remedy, Public Interest, and Bonding, April 3, 1995 ("Complainants' Brief on Remedy") at 3.

only to infringing diver alarms manufactured by and/or imported by, or on behalf of, respondents Duton and IHK.¹⁷

We find that issuance of a limited exclusion order that applies only to goods produced by Duton that infringe the patents at issue is sufficient to protect complainants' rights in this case.¹⁸

Because of the considerable potential impact on international trade that could result from a general exclusion order, we balance complainants' interest in obtaining complete relief against the public interest in avoiding the disruption of legitimate trade that a general exclusion order might cause.¹⁹ Thus, as first stated in Certain Airless Paint Spray Pumps ("Spray Pumps"),²⁰ there are two tests that must be met for issuance of a general exclusion order, viz., there must be (1) a widespread pattern of unauthorized use of the patented invention, and (2) the existence of business conditions from which one might reasonably infer that foreign manufacturers other than the respondents to the investigation may attempt to enter the U.S. market with infringing articles.²¹ Both prongs must be satisfied for a general exclusion order to issue. For the reasons discussed below, we determine that complainants have not satisfied the "widespread pattern of unauthorized use" prong.

Factors relevant to demonstrating whether there is a "widespread pattern of unauthorized use" include:

- (a) a Commission determination of unauthorized importation into the United States of infringing articles by numerous foreign manufacturers;
- (b) the pendency of foreign infringement suits based upon foreign patents which correspond to the domestic patent at issue;
- (c) other evidence which demonstrates a history of unauthorized foreign use of the patented invention.²²

We find there is insufficient evidence to show a widespread pattern of unauthorized use. First, we have only determined that one foreign manufacturer, Duton, has violated the asserted claims of the patents at issue. Second, complainants have not filed, nor indicated an intention to file, any foreign infringement suits against foreign manufacturers other than Duton.²³ Third, the history of unauthorized use relied upon by complainants appears to involve only diver alarms manufactured by Duton.²⁴

Complainants named three potential foreign manufacturers of infringing diver alarms, none of which is a respondent.²⁵ Complainants named Nemrod S.A. of Spain ("Nemrod") and Paima Enterprise Co., Ltd. of Taiwan ("Paima") as foreign manufacturers for the first time in their remedy

¹⁷ Brief of the Office of Unfair Import Investigations on Remedy, the Public Interest, and Bonding ("Brief of the IA on Remedy") at 4.

¹⁸ We also determine that the limited exclusion order is directed only to entries for consumption.

¹⁹ See, e.g., Certain Tape Dispensers, Inv. No. 337-TA-354, USITC Pub. 2786 (June 1994) at 3; Certain Dynamic Random Access Memories, Inv. No. 337-TA-242, USITC Pub. 2034 (November 1987) at 84.

²⁰ Inv. No. 337-TA-90, USITC Pub. 1199 (May 1981) at 18.

²¹ See also Certain Battery Powered Ride-On Toy Vehicles and Components Thereof, Inv. No. 337-TA-314, USITC Pub. (April 9, 1991) at 5-6.

²² Spray Pumps at 18-19.

²³ Complainants' Brief on Remedy at 9; Brief of the IA on Remedy at 7-8.

²⁴ Complainants' Brief on Remedy at 9-10.

²⁵ See, e.g., Complainants' Reply Brief, Ex. A; Complainants' Motion to Reopen the Record, as supplemented.

brief. In their motion to reopen the record to admit newly-discovered evidence, complainants named a third firm, Shintad, as one that "may be manufacturing the infringing products."²⁶ The IA stated that there is no evidence of foreign manufacturers of infringing diver alarms other than foreign respondent Duton.²⁷

We find that the evidence does not demonstrate that Nemrod, Paima, and Shintad are indeed manufacturing diver alarms. On several occasions complainants themselves refer to Nemrod and Paima as distributors of Duton's infringing diver alarms, rather than as manufacturers of diver alarms. For example, complainants refer to Nemrod as a "new distributor" of Duton, and state that representatives of both Nemrod and Paima attended the Dive Equipment Manufacturing Association ("DEMA") trade show, held in January 1995 in San Francisco, where they offered Duton's diver alarms for sale. Complainants also state that Nemrod and Paima have advertised Duton's diver alarms in their 1995 product catalogues.²⁸ With respect to Shintad, as noted above, complainants allege only that Shintad "may be manufacturing the infringing products."²⁹

The mere possibility that additional foreign manufacturers of infringing products exist is not sufficient to warrant issuance of a general exclusion order. The evidence that complainants have presented regarding the potential additional three foreign manufacturers indicates only that those firms are selling, distributing, or acting as agents for Duton's infringing diver alarms.

We also find that a limited exclusion order is an effective remedy in this investigation. Documentation presented to Customs upon importation of infringing diver alarms will include the identity of the manufacturer, in this case Duton, even if the diver alarms are exported by another foreign company.³⁰ Thus, we do not find that a failure to issue a general exclusion order in this investigation would allow non-respondent companies to infringe complainants' patent claims.³¹

B. Cease and Desist Order

We have also determined that it is appropriate to issue a cease and desist order directing IHK to cease and desist from any unlicensed importing, selling for importation, marketing, distributing, offering for sale, selling, or otherwise transferring (except for exportation) in the United States imported diver alarms which have been determined to be infringing.

We find that there is sufficient evidence to establish that respondent IHK maintains a "commercially significant" amount of infringing imported alarm devices which it can sell, which would undercut the effect of the limited exclusion order issued against Duton. Because IHK failed to answer discovery requests or appear at its deposition, information on the exact amount of inventories IHK actually holds is unknown. IHK, however, has recently offered to sell 500 infringing diver alarms for "immediate delivery" to at least one U.S. distributor of scuba diving equipment.³² Given the relatively small U.S. market for diver alarms, the IA argues, and we agree, that even a single shipment of 500 infringing alarm devices constitutes a commercially significant amount.

²⁶ Complainants' Motion to Reopen the Record at 1 and 3 (supplemented on May 17, 1995).

²⁷ Response of the IA to Complainants' Motion to Reopen the Record at 3.

²⁸ See Complainants' Brief on Remedy at 7, 14 and 19.

²⁹ Complainants' Motion to Reopen the Record at 1 and 3 (supplemented on May 17, 1995).

³⁰ See Brief of the IA on Remedy at 7.

³¹ We note that if, subsequent to the issuance of a limited exclusion order, complainants are able to obtain evidence indicating that there are indeed additional foreign manufacturers of infringing diver alarms, then complainants can petition the Commission to add new foreign respondents to the limited exclusion order or to convert the limited exclusion order into a general exclusion order pursuant to final rule 210.76 which governs the modification or rescission of exclusion orders.

³² Complainants' Brief on Remedy at 20; Brief of the IA on Remedy at 12 and Attachment C.

Complainants also provided evidence that IHK is advertising its infringing alarm devices in U.S. scuba diving magazines and is distributing a 1995 catalog in the United States which offers infringing diver alarms.³³ In our view, these factors taken together provide adequate support to warrant issuance of a cease and desist order against respondent IHK.

We have decided against also issuing a cease and desist order to foreign respondent Duton, as complainants have requested. Complainants assert that there is indirect evidence that Duton has stockpiled infringing imported alarms in the United States. Complainants rely on the fact that Duton is increasing its efforts to sell diver alarms in the United States. Complainants' reliance on increased sales efforts by Duton, however, does not amount to evidence of stockpiles of inventories.

We find that the exclusion order directed against any importation of Duton's infringing product will be sufficiently effective and renders a cease and desist order unnecessary. There is no question that the Commission has personal jurisdiction over respondent Duton and has the power to issue a cease and desist order directed to Duton's U.S. activities. However, under the terms of the limited exclusion order, Duton is prohibited from exporting any more infringing alarms to the U.S. The record indicates that the only significant quantity of Duton's infringing alarms that would otherwise be available in the United States are those held in inventory by IHK, who is specifically prohibited from selling them pursuant to a cease and desist order. It has not been shown therefore that any activities by Duton in the United States would have any effect on complainant. A cease and desist order directed to such activities is therefore unnecessary.

IV. THE PUBLIC INTEREST

Section 337 instructs the Commission to consider the effect of any remedy "upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers."³⁴ The legislative history of this provision, added to section 337 by the Trade Act of 1974, indicates that the Commission should decline to issue relief when the adverse effect on the public interest would be greater than the interest in protecting the patent holder.³⁵

Complainants and the IA argue that the issuance of relief would have no adverse impact on the public interest in this case. We agree. Diver alarms are not the type of product that have in the past raised public interest concerns (such as, for example, drugs or medical devices), and the public interest favors the protection of U.S. intellectual property rights.³⁶

³³ See Complainants' Brief on Remedy at 12, 19-20 and Ex. 10.

³⁴ 19 U.S.C. § 1337(d) and (f).

³⁵ See S. Rep. 1298, 93rd Cong., 2d Sess. 197 (1974).

³⁶ We note that the Commission has declined to grant relief on public interest grounds in only three cases. In Certain Automatic Crankpin Grinders, Inv. No. 337-TA-60, U.S.P.Q. 71 (ITC 1979), the Commission denied relief because of an overriding national policy in maintaining and increasing the supply of fuel efficient automobiles, coupled with the domestic industry's inability to supply domestic demand. In Certain Inclined Field Acceleration Tubes, Inv. No. 337-TA-67, USITC Pub. 1119 (1980), the Commission denied relief because there was an overriding public interest in continuing basic atomic research using the imported acceleration tubes, which were of a higher quality than the domestic product. Finally, in Certain Fluidized Supporting Apparatus, Inv. No. 337-TA-182/188, USITC Pub. No. 1667 (1984), the Commission denied relief because the domestic producer could not supply demand for hospital beds for burn patients within a commercially reasonable time, and no therapeutically comparable substitute for care of burn patients was available.

The evidence also indicates that complainants can supply enough diver alarms to serve the U.S. market. In any event, an adequate supply of diver alarms is not necessary to ensure public health, safety, or welfare in the United States. Finally, the patented diver alarms compete with other devices that perform the same function. Consequently, we conclude that the public interest does not preclude issuance of a general exclusion order.

V. BONDING

Section 337(j)(3) provides for the entry of infringing articles upon the payment of a bond during the 60-day Presidential review period.³⁷ The bond is to be set at a level sufficient to "offset any competitive advantage resulting from the unfair method of competition or unfair act enjoyed by persons benefitting from the importation."³⁸

Complainants recommended that the bond during the 60-day Presidential review period be set at 286 percent of entered value.³⁹ They arrive at this percentage by calculating the difference in cost between complainants' goods and respondents' goods, using a simple averaging method.⁴⁰ The IA recommended that the bond be calculated based on a comparison of complainants' price to distributors with the entered value of respondent Duton's infringing alarm device. The IA proposes a weighted-average comparison of the different models of alarm devices available, instead of the simple averaging comparison proposed by complainants, and arrives at a bond of 152 percent of entered value.⁴¹

We believe that the bond proposed by the IA reasonably approximates the competitive advantage enjoyed by respondents. The IA proposed a weighted-average calculation because there are a disproportionate number of sales between the different models and therefore simple averaging leads to an inaccurate figure. Since the weighted averaging methodology applied by the IA appears to be more accurate than the simple averaging methodology proposed by complainants, we have established a bonding rate equal to 152 percent of the entered value of infringing diver alarms.

³⁷ 19 U.S.C. § 1337(j)(3).

³⁸ S. Rep. No. 1298, 93rd Cong., 2d Sess. 198 (1974).

³⁹ Complainants' Brief on Remedy at 22.

⁴⁰ Complainants averaged the costs of its three models of diver alarms and Duton's three models of diver alarms. Complainants' Brief on Remedy at 21-22.

⁴¹ See generally Brief of the IA on Remedy at 15-18.

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

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In the Matter of

**CERTAIN AUDIBLE ALARM
DEVICES FOR DIVERS**

Investigation No. 337-TA-365

**NOTICE OF DECISION NOT TO REVIEW AN INITIAL DETERMINATION
FINDING A VIOLATION OF SECTION 337 AND SCHEDULE
FOR THE FILING OF WRITTEN SUBMISSIONS ON
REMEDY, THE PUBLIC INTEREST, AND BONDING**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined not to review the initial determination (ID) issued on February 2, 1995, by the presiding administrative law judge (ALJ) in the above-captioned investigation finding a violation of section 337 in the importation and sale of certain audible alarm devices for divers.

FOR FURTHER INFORMATION CONTACT: Rhonda M. Hughes, Esq., Office of the General Counsel, U.S. International Trade Commission, telephone 202-205-3083. Copies of the nonconfidential version of the ID and all other nonconfidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street S.W., Washington, D.C. 20436, telephone 202-205-3000. Hearing-impaired persons are advised that information on the matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810.

SUPPLEMENTARY INFORMATION: On June 8, 1994, the Commission instituted an investigation of a complaint filed by David A. Hancock and Ideations Design Inc. under section 337 of the Tariff Act of 1930. The complaint alleged that Duton Industry Co., Ltd. (Duton) of Taipei, Taiwan and IHK International Corp. (IHK) of Torrance, California had imported, sold for importation, and sold within the United States after importation certain audible alarm devices for divers by reason of infringement of claim 6 of U.S. Letters Patent 4,950,107 (the '107 patent) and claim 1 of U.S. Letters Patent 5,106,236 (the '236 patent). The Commission's notice of investigation named as respondents Duton and IHK, each of which was alleged to have committed one or more unfair acts in the importation or sale of audible alarm devices for divers that infringe the asserted patent claims.

The ALJ conducted an evidentiary hearing commencing on October 11, 1994, and issued her final ID on February 2, 1995. She found that: (1) claim 6 of the '107 patent and claim 1 of the '236 patent are valid and enforceable; (2) there is a domestic industry manufacturing and selling products protected by these two claims; (3) respondent IHK has imported products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent, and respondent Duton has exported to the United States products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent. Based upon

her findings of validity, infringement, and domestic industry, the ALJ concluded that there was a violation of section 337.

No petitions for review of the ID were filed and, consequently, no responses thereto were filed. No government comments on the ID were received by the Commission.

In connection with final disposition of this investigation, the Commission may issue (1) an order that could result in the exclusion of the subject articles from entry into the United States, and/or (2) cease and desist orders that could result in respondents being required to cease and desist from engaging in unfair acts in the importation and sale of such articles. Accordingly, the Commission is interested in receiving written submissions that address the form of remedy, if any, that should be ordered. If a party seeks exclusion of an article from entry into the United States for purposes other than entry for consumption, the party should so indicate and provide information establishing that activities involving other types of entry either are adversely affecting it or are likely to do so. For background, see the Commission Opinion, In the Matter of Certain Devices for Connecting Computers via Telephone Lines, Inv. No. 337-TA-360.

If the Commission contemplates some form of remedy, it must consider the effects of that remedy upon the public interest. The factors the Commission will consider include the effect that an exclusion order and/or cease and desist orders would have on (1) the public health and welfare, (2) competitive conditions in the U.S. economy, (3) U.S. production of articles that are like or directly competitive with those that are subject to investigation, and (4) U.S. consumers. The Commission is therefore interested in receiving written submissions that address the aforementioned public interest factors in the context of this investigation.


If the Commission orders some form of remedy, the President has 60 days to approve or disapprove the Commission's action. During this period, the subject articles would be entitled to enter the United States under a bond, in an amount determined by the Commission and prescribed by the Secretary of the Treasury. The Commission is therefore interested in receiving submissions concerning the amount of the bond that should be imposed, if remedial orders are issued.

WRITTEN SUBMISSIONS: The parties to the investigation, interested government agencies, and any other interested persons are encouraged to file written submissions on the issues of remedy, the public interest, and bonding. Complainants and the Commission investigative attorney are also requested to submit proposed remedial orders for the Commission's consideration. The written submissions and proposed remedial orders must be filed no later than the close of business on April 3, 1995. Reply submissions must be filed no later than the close of business on April 10, 1995. No further submissions will be permitted unless otherwise ordered by the Commission.

Persons filing written submissions must file the original document and 14 true copies thereof with the Office of the Secretary on or before the deadlines stated above. Any person desiring to submit a document (or portion thereof) to the Commission in confidence must request confidential treatment unless the information has already been granted such treatment during the proceedings. All such requests should be directed to the Secretary of the Commission and must include a full statement of the reasons why the Commission should grant such treatment. See 19 C.F.R. § 201.6. Documents for which confidential treatment is granted by the Commission will be treated accordingly. All nonconfidential written submissions will be available for public inspection at the Office of the Secretary.

This action is taken under the authority of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and sections 210.53 and 210.58 of the Commission's Interim Rules of Practice and Procedure (19 C.F.R. §§ 210.53 and 210.58).

By order of the Commission.


Donna R. Koehnke
Secretary

Issued: March 13, 1995

PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of)
CERTAIN AUDIBLE ALARM DEVICES)
FOR DIVERS)

Investigation No. 337-TA-365

11-10-94

INITIAL DETERMINATION

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File Rec'd	
Conf.	2-2-95
Public	2-10-95
IP Rec'd	
Petition due	
Resp to pet. due	
Gov's comments due	
Public comments due	
Comm. decision due	3-20-95

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PROCEDURAL HISTORY

On April 28, 1994, complainants, David A. Hancock and Ideations Design Inc., filed a complaint alleging that the importation of certain audible alarm devices that infringed U.S. Letters Patent Nos. 4,950,107 and 5,106,236 was an unfair act violating Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337). On May 31, 1994, the Commission issued a notice of investigation of the facts alleged in the complaint. The notice was published in the Federal Register on June 8, 1994.

The complainants are David A. Hancock and Ideations Design Inc., of Seattle, Washington. Mr. Hancock is the sole owner of the '107 and '236 patents, and of Ideations Design Inc. Hancock, Tr. 235, 882-883. The respondents named in the notice of investigation are IHK International Corp., of Torrance, California (IHK), and Duton Industry Co., Ltd., of Taipei, Taiwan (Duton). The Commission Investigative attorney, also a party in this case, supports complainants on all issues.

IHK responded to the complaint and notice of investigation on July 5, 1994, and amended its response on September 12, 1994. Duton did not respond to the complaint or the notice of investigation, and has not participated in this case in any way.

A hearing under the Administrative Procedure Act was held from October 11, 1994 through October 14, 1994. All of the active parties filed post-hearing briefs. After consideration of the evidentiary record made at the hearing and the post-hearing briefs filed by the parties, the following findings of fact and conclusions of fact and law are made:

FINDINGS

JURISDICTION

Section 337 of the Tariff Act of 1930 gives the Commission jurisdiction to determine whether a Section 337 violation exists in connection with the importation of products into the United States. The Commission has jurisdiction over the subject matter of this investigation because its notice of investigation instituted an investigation to determine:

whether there is a violation of section 337(a)(1)(B)(i) in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain audible alarm devices for divers, by reason of infringement of claim 6 of U.S. Letters Patent 4,950,107 or claim 1 of U.S. Letters Patent 5,106,236, and whether there exists an industry in the United States as required by subsection (a)(2) of section 337.

The Commission has personal jurisdiction over respondent IHK because IHK participated fully in discovery and the hearing.

The Commission has personal jurisdiction over respondent Duton. Duton has received adequate notice of this investigation and has "minimum contacts" with the United States. Evidence offered at the hearing established that Duton had been served personally with the complaint and notice of investigation in this case, and had adequate notice of the Commission's proceedings against Duton.

In Order No. 6 Duton was ordered to answer discovery requests that had been personally served on Duton. These discovery requests sought information limited to the issue of personal jurisdiction. Duton failed to respond to this order. In Order No. 23, Duton was found to be in default for failing to comply with Order No. 6. In Order No. 23 (an unreviewed initial determination) it was also found, based on evidence offered at the hearing (see Hancock Ex. 11), that Duton had exported to the United States a number of

the accused Supra Horn alarms in 1993, after the issuance of the '107 patent and the '236 patent. Order No. 23 imposed evidentiary sanctions on Duton. As an evidentiary sanction, it was found that Duton had intentionally exported the Supra Horn to the United States.

Although IHK has not admitted importing the Supra Horn from Duton, IHK has admitted that it imports the Supra Horn into the United States and that it advertises and sells this product within the United States. Staff Ex. 6 and Staff Phys. Ex. F.

THE PATENTS IN ISSUE

U.S. Letters Patent 4,950,107, entitled "Audible Alarm Device For Divers," was issued on August 21, 1990 to David A. Hancock and Barry A. Kornett. Staff Ex. 2. The '107 patent resulted from an application filed on October 12, 1988 (Serial No. 256,606). U.S. Letters Patent 5,106,236, entitled "Audible Alarm Devices For Divers And Others", was issued on April 21, 1992 to the same inventors. Staff Ex. 3. The '236 patent resulted from an application filed on August 17, 1990 as a continuation-in-part (or "CIP") of the '606 application (Serial No. 568,833). On August 23, 1993, Mr. Kornett assigned all of his interest in both the '107 and '236 patents to Mr. Hancock. Hancock Ex. 4.

Both the '236 and '107 patents disclose identical audible alarm devices. Figures 1 through 5 of both patents are identical, and the text describing what is shown in those figures is substantially the same. There are only minor differences between the two specifications. See Staff Exs. 2 and 3. The '107 patent is "embodied" in the '236 patent. Hardy, Tr. 992.

Claim 1 of the '236 patent uses different words to claim more broadly what already was disclosed in the earlier-issued '107 patent. The '236 patent

does not limit the use of the alarm device to divers. The only claim limitations that appear in claim 1 of the '236 patent that are not in claim 6 of the '107 patent are the means for receiving air from a tank source, and the bypass function. These features are disclosed in the specification of the '107 patent. See Figure 5, Staff Ex. 2.

When matter in a CIP application such as the one that resulted in the '236 patent is inherent in the disclosure in the original parent application (in this case, the application for the '107 patent), that matter is entitled to the filing date of the parent application. Litton Systems, Inc. v. Whirlpool Corporation, 728 F.2d 1423, 1438 (Fed. Cir. 1984). Claim 1 of the '236 patent is entitled to the filing date of the application for the '107 patent (October 12, 1988) because every element of claim 1 is disclosed in the original parent application for the '107 patent.

The invention described in both patents is a small air-operated signalling device designed to be used with self-contained breathing apparatus such as scuba equipment. Staff Ex. 3, Col. 1, lines 11-14. Pressurized air from the diver's tank is in the alarm device when the alarm is not being used. The alarm is activated when the diver presses a button that depresses a valve stem in the interior of the alarm device. When the valve stem is depressed, the head of the valve moves away from an axial opening. The pressurized air that is in the interior of the alarm device then enters the axial opening and goes through small passageways until it enters the horn of the alarm device. The pressurized air interacting with the horn creates pulsations of air pressure that are sensed as sound. Strasberg, Tr. 691-692, 698-700; Staff Phys. Ex. K; Staff Ex. 3, Col. 5, lines 21-29 and Figure 5.

When the alarm is being used (i.e., when the diver depresses the button while he is on the surface of the water), the part of the alarm device containing the horn receives compressed air from the diver's breathing apparatus (a tank that contains air under pressure). When the alarm is not being used, the pressurized air from the diver's tank passes through the rest of the alarm device, bypassing the part of the alarm where the horn is. This allows the diver's breathing apparatus to operate normally. Strasberg, Tr. 690; Staff Ex. 3, Col. 2, line 67 through Col. 3, line 16.

The alarm device is designed not to interfere with the breathing apparatus of the diver. Staff Ex. 3, Col. 2, lines 61-66.

CLAIM CONSTRUCTION

The two claims in issue (claim 6 of the '107 patent and claim 1 of the '236 patent) must be construed in the same way for the purposes of validity and infringement. The claims will be construed in light of the claim language, other claims in the patent, the patent specification, the prosecution history, and the prior art. The words in a claim will be given their ordinary meaning unless the inventor expressly stated in the patent or the prosecution history that the words have a different meaning.

Both claims in issue include means-plus-function language, as provided in 35 U.S.C. § 112, ¶ 6. Under paragraph 6 of Section 112, an applicant for a patent may express an element in a claim as a means for performing a specified function without reciting the structure, material, or acts in the claim itself. Paragraph 6 provides that a means-plus-function claim shall be construed to cover only the specific means disclosed in the patent specification for performing the claimed function, and "equivalents thereof". The patentee is entitled to the "fair scope" of the embodiment of the

invention disclosed in the specification, without having to list a catalogue of alternative embodiments. Texas Instruments, Inc. v. United States International Trade Commission, 805 F.2d 1558, 1563 (Fed. Cir. 1986).

An "equivalent" of the means disclosed in the patent specification under Section 112, paragraph 6 results from an insubstantial change "which adds nothing of significance to the structure, material or acts disclosed in the patent specification." Valmont Industries, Inc. v. Reinke Manufacturing Company, Inc., 983 F.2d 1039, 1043 (Fed. Cir. 1993).

IHK identifies certain portions of the structure described in the specifications, including for example, the button stem guide (68), lateral opening (74), and peripheral groove (76), and argues that these portions or subparts of the disclosed structure "must all be present in equivalent form because that is the only structure disclosed." IHK posthearing brief at 14. This interprets the claims too narrowly.

Under paragraph 6 of Section 112, an infringement analysis must focus on the structures that perform each claimed function, not subparts of these structures. As stated by the Federal Circuit in D.M.I., Inc. v. Deere & Co., 755 F.2d 1570 (Fed. Cir. 1985):

In applying the "means plus function" paragraph of § 112, however, the sole question is whether the single means in the accused device which performs the function stated in the claim is the same as or an equivalent of the corresponding structure described in the patentee's specification as performing that function.

755 F.2d at 1575. See also Valmont Industries, Inc. v. Reinke Manufacturing Company, Inc., supra, 983 F.2d at 1043 (Fed. Cir. 1993). The focus is on the structures that perform the claimed function, not on subparts of those structures that may perform an unclaimed subsidiary function. A finding that a structure is "equivalent" under Section 112, paragraph 6 does not require

the presence of subparts of the structures that perform the claimed function.
Interspiro USA, Inc. v. Figgie International, Inc., 815 F.Supp. 1488 (D.Del.
1993), aff'd, 18 F.3d 927 (Fed. Cir. 1994).

Claim 6 of the '107 patent

Claim 6 of the '107 patent is as follows:

An apparatus for use with diving equipment to produce an audible alarm, comprising:

means responsive to air under pressure to produce an audible alarm, said audible alarm means being adapted to be carried on or about the person of the diver during diving operations, without interfering therewith; and means for selectively providing air under pressure from a diving tank source thereof to said audible alarm.

Staff Ex. 2, Col. 6, lines 43-52.

Claim 6 of the '107 patent contains three limitations. The first and third limitations are written in means-plus-function language. The claim covers only devices that perform those functions utilizing the corresponding structures disclosed in the patent specification or "equivalents" thereof.

means responsive to air under pressure to produce an audible alarm

The structure disclosed in the specification of the '107 patent for producing an alarm through the use of air under pressure is an air horn, shown in Figure 5 of the '107 patent. Strasberg, Tr. 698-700. Air under pressure enters a cavity in the horn where it comes into contact with the horn's diaphragm (94). Strasberg, Tr. 698. The air pressure builds up in the cavity until the diaphragm is pushed down and away from the wall of the horn bell. This creates an opening between the diaphragm and the wall of the horn bell, allowing some of the air under pressure to escape into the environment. The escaping air relieves the air pressure in the cavity, causing the diaphragm to return to its original position and closing the opening between the diaphragm

and the horn bell. Air pressure builds up again inside the space and the process continues. Strasberg, Tr. 683, 698-699; Staff Exs. A and K. The fluctuations in air pressure generated by this process are sensed as sound. Strasberg, Tr. 679.

Claim 6 of the '107 patent is construed to cover the specific air horn structure disclosed in the specification of the '107 patent, as well as equivalents thereof (air horns that contain differences that are not important to the function of the horn).

said audible alarm means being adapted to be carried on or about the person of the diver during diving operations, without interfering therewith;

The invention described in the specification and claimed in claim 6 has connectors at the inlet and outlet of the air passageway in the body of the device. Staff Ex. 2, Fig. 3. These connectors are designed to connect to and disconnect from a low pressure hose attached to an air tank. This allows the alarm device to use the diver's air tank without modifying the equipment or interfering with the diver's use of the air tank. Staff Ex. 2, Col. 2, lines 46-59; Hancock, Tr. 414-415. The disclosed alarm device is designed to be small and lightweight. Hancock, Tr. 414-415.

means for selectively providing air under pressure from a diving tank source thereof to said audible alarm.

The alarm device claimed in claim 6 is designed so that air under pressure can pass through the body of the device by a passageway (42) when the device is not in operation. Staff Ex. 2, Col. 5, lines 6-13, Fig. 5; Strasberg, Tr. 690-691. When the alarm is not in use, air can pass into a volume (50) below the head (78) of the button stem (79). Strasberg, Tr. 691. When the alarm is not being used, the pressurized air from the air tank cannot get past the head of the button stem, so that the air under pressure does not

come into contact with the noise-generating structure and no sound is made.
Staff Ex. 2, Col. 4, lines 32-39.

The claimed invention performs the function of "selectively providing" air under pressure to the air horn by giving the diver the option of providing air to the horn or not providing air to the horn. Strasberg, Tr. 697. The user operates a valve by pressing a button (80). When the user presses the button, it depresses the button stem moving the head of the stem down and away from the part referred to as a "button stem guide" (68). This allows pressurized air to flow upwards past the stem head into an axial opening (72). From there, the pressurized air passes through a lateral opening (74), or cross-cut hole, in the button stem guide into a groove (76) on the outside of the guide. The air then passes a diagonally drilled bore (64) into the air horn portion of the device. Strasberg, Tr. 691-693; Staff Exs. A and G; Staff Ex. 2, Col. 5, lines 15-26. When air under pressure reaches the horn, it produces an audible alarm.

Claim 1 of the '236 Patent

Claim 1 of the '236 patent is as follows:

An apparatus for use with a self-contained breathing apparatus to produce an audible alarm, comprising:

means responsive to air under pressure to produce an audible alarm, said audible alarm means including an audible alarm element, said alarm means being adapted to be carried on or about the person of the user of the apparatus during use thereof, without interfering with the use of the apparatus; and

means for receiving air under pressure from a tank source thereof which is carried on or about the person of the user and selectively providing said air to said audible alarm element, said air receiving means including means for bypassing said audible alarm element with said air when said air is not to be provided to said audible alarm element.

Staff Ex. 3, Col. 6, line 56 - Col. 7, line 2.

Claim 1 contains five limitations, four of which are written in means-plus-function language. Because limitations 1, 3, 4 and 5 are written in means-plus-function language, the claim covers only devices that perform the functions set out in these limitations utilizing the corresponding structures disclosed in the specification or "equivalents" thereof.

means responsive to air under pressure to produce an audible alarm, said audible alarm means including an audible alarm element

This limitation is like the first limitation of claim 6 of the '107 patent. The additional language ("said audible alarm means including an audible alarm element") refers to the fluctuations of air pressure in the horn bell and the thin diaphragm that are sensed as sound. Hancock, Tr. 417.

said alarm means being adapted to be carried on or about the person of the user of the apparatus during use thereof, without interfering with the use of the apparatus

The language of this limitation is like the second limitation of claim 6 of the '107 patent. It differs only in that it does not refer specifically to "diving" apparatus. The claimed invention is designed to connect and disconnect from a low pressure hose leading from a user's air tank. The alarm device can be used with the air tank without modifying the equipment and without interfering with the regular use of the air tank. Staff Ex. 3, Col. 2, lines 50-56; Hancock, Tr. 418. The claimed device is designed to be small and lightweight, and neither the weight nor size of the alarm device interferes with the use of the apparatus. Hancock, Tr. 418.

means for receiving air under pressure from a tank source thereof which is carried on or about the person of the user

The specification of the '236 patent discloses a structure for receiving air under pressure from the user's tank of compressed air. A male connector attached to the alarm device is adapted for connection to an air hose which

leads from the air tank. Staff Ex. 3, Fig. 5; Hancock, Tr. 413. An air passageway leads from this male connector into the interior of the alarm device and extends through the alarm device, allowing air to enter one side and leave on the other side. Hancock, Tr. 418. This interior passageway is configured so that air under pressure, while passing through the passageway, comes into contact with the structure that selectively provides air to the noise generating structure. Staff Ex. 3, Fig. 5.

[means for] selectively providing said air to said audible alarm element

This limitation is like the third limitation of claim 6 the '107 patent. It describes a structure that allows the user to select whether to provide air under pressure to the air horn. Strasberg, Tr. 697. The user can provide air to the horn by depressing a button that opens a pathway in the body of the device through which the air can pass to the air horn. Strasberg, Tr. 690-693; Staff Phys. Exs. A and G; Staff Ex. 3, Col. 5, lines 21-31 and Fig. 5.

means for bypassing said audible alarm element with said air when said air is not to be provided to said audible alarm element

Claim 1 also claims that the structure for receiving air performs the function of allowing the air to "bypass" the air horn when no noise is being generated. The prosecution history of the '236 patent indicates that the inventors used this term to mean that when the button is not depressed, air is not provided to the alarm. During the prosecution of the '833 continuation-in-part application (which resulted in the '236 patent), the inventors stated that in their invention:

...the air under pressure is selectively provided to the alarm (sound producing) element. Otherwise, the air bypasses the alarm element... . Only when the alarm button on applicant's device is operated, is air provided to the alarm element.

IHK Phys. Ex. H, p. 56 (letter dated August 8, 1991).

A structure performs the function of "bypassing" the alarm element when the alarm is not being operated if the air passes through the alarm device without coming into contact with the alarm element. Hancock, Tr. 420; Strasberg, Tr. 697-698. Figure 5 of the '236 patent shows that when the alarm element is not being used, the air under pressure passes through passageway 42 without coming into contact with the audible alarm element. Figure 6 shows another application or use for the alarm in which the same alarm device as shown in Figure 5 is attached at the end of a "pigtail" hose, so that the air under pressure would normally not pass through passageway 42 but would simply stop unless another apparatus were coupled to the outlet for "buddy breathing". Staff Ex. 3, Col. 6, lines 19-35. In either event, the air would not come into contact with the alarm element when the alarm was not being used.

VALIDITY OF THE PATENTS AT ISSUE

The '107 and '236 patents are presumed to be valid. 35 U.S.C. § 282. IHK has the burden of overcoming this presumption by clear and convincing evidence.

ANTICIPATION

If every limitation of a claimed invention is shown in a single prior art reference, that reference anticipates the claim under 35 U.S.C. § 102. Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 677 (Fed. Cir. 1988). There must be "identity of invention" between the claimed invention and the allegedly anticipating reference. Minnesota Mining and Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1565 (Fed. Cir. 1992).

In a means-plus-function claim, the requirement that the invention disclosed in the prior art and the claimed invention be identical is modified. Because a claim containing means-plus-function language covers equivalents of the structure disclosed in the specification for performing the claimed function, the structure disclosed in the prior art need not be identical to the structure in the patent specification in issue. To anticipate, the prior art reference must disclose a structure that performs the claimed function and that is the equivalent (as that term is used in 35 U.S.C. § 112, ¶ 6) of the corresponding structure in the specification of the patent. In re Bond, 910 F.2d 831, 833 (Fed. Cir. 1990).

IHK asserts that three references constitute anticipating prior art: U.S. Patent 4,095,667 (the Mahig patent, IHK Ex. 7); U.S. Patent 4,852,510 (the Joseph patent, IHK Ex. 8); and U.K. Patent Application GB2059660 (the Kimura reference, IHK Ex. 25).

The date of complainants' invention

For the purposes of anticipation, the date of the patentee's invention is presumed to be the filing date of the application resulting in the patent, unless an earlier date of invention is proved. No earlier date of invention was proved. The filing date of the application for the first patent, the '107 patent, was October 12, 1988.

The second patent, the '236 patent, resulted from a continuation-in-part ("CIP") application. Claim 1 of the '236 patent is entitled to the same filing date as the parent application (October 12, 1988), if the parent application discloses the invention in the manner required by the first paragraph of Section 112. 35 U.S.C. § 120.

Both patents disclose identical audible alarm devices. Figures 1 through 5 of both patents are identical, and the text describing what is shown in those figures is identical except for some insignificant differences. Staff Exs. 2 and 3. The '107 patent is embodied in the '236 patent. Hardy, Tr. 992. The only new matter added by the CIP application disclosed the use of the audible alarm device for non-diving uses. Staff Ex. 3, Col. 5, line 39-Col. 6, line 45, and Figure 6. For the most part, claim 1 of the '236 patent uses different words to describe what is covered by claim 6 of the '107 patent. The only claim limitations that appear in claim 1 that are not recited in claim 6 are the means for receiving air from a tank source, and the "bypass" function. These features are disclosed in the specification of the '107 patent, particularly Figure 5, and are inherent to that disclosure. Staff Ex. 2, Figure 5. No function is claimed in claim 1 that is not disclosed in the '107 patent specification. When matter in a CIP application is inherent to what the original parent application discloses, that matter is entitled to the filing date of the parent application. Litton Systems, Inc. v. Whirlpool Corporation, 728 F.2d 1423, 1438 (Fed. Cir. 1984). Claim 1 is entitled to the October 12, 1988 filing date for purposes of anticipation.

THE MAHIG PATENT

The Mahig patent (U.S. Patent 4,095,667) was issued on January 20, 1978, and it is prior art to both of the patents in issue under 35 U.S.C. § 102(a). Section 102(a) provides that a person shall be entitled to a patent unless--

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, ...

Mahig does not disclose or teach every limitation in claim 6 of the '107 patent. It does not disclose or teach a structure for generating sound that

is the structural equivalent of the air horn disclosed in the '107 patent, nor does it disclose or teach a structure that can be carried by a diver without interfering with diving operations. It does not disclose a structure capable of selectively providing air to the audible alarm.

The Mahig patent describes two slightly different embodiments of a device that produces sound by striking a plate with a hammer. Striking the plate creates vibrations that act on the surrounding air molecules to produce sound. IHK Ex. 7, Col. 1, lines 48-52, Figures 1 and 5; Hardy, Tr. 956-957. The Mahig device creates sound in the way a drum does when struck. The motion of the plate after impact creates fluctuations in pressure by acting on the surrounding medium. Strasberg, Tr. 682. This type of diaphragm is a different type of sound generator than the diaphragm in an air horn which acts to control a flow of air, releasing it in pulses to create fluctuations in pressure. Strasberg, Tr. 683-685; Staff Exhibit K. The drum-like structure in Mahig is structurally different from the air horn in the '107 patent. Hardy, Tr. 954, 985. The Mahig patent does not teach or disclose a "means responsive to air under pressure to produce an audible alarm" similar to that disclosed in the '107 patent.

The Mahig device would interfere with the diver during diving operations. Hardy, Tr. 843, 851. It taught the use of high pressure air to operate the device. This high pressure air would create a dangerous situation with respect to a downstream device such as a buoyancy control device. Hardy, Tr. 960.

The Mahig patent does not disclose a "means for selectively providing air under pressure" to the alarm element. The Mahig patent discloses an air inlet 39 in one embodiment, and 95 in the second embodiment. This inlet has no

internal valve structure. IHK Ex. 7, Figures 1 and 5. Air under pressure can enter the device and come into contact with the hammer portion of the alarm element without passing through a selective valve. Hardy, Tr. 1027. The air under pressure is always provided to the audible alarm element of the device.

Claim 6 of the '107 patent is not invalid as anticipated by Mahig.

The Mahig alarm device also does not contain all the limitations of claim 1 of the '236 patent. As in claim 6 of the '107 patent, Mahig does not disclose an audible alarm element that is the structural equivalent of the air horn disclosed in the '236 patent, it is not adapted to be carried by the user without interfering with the user's breathing apparatus, and it is not capable of selectively providing air under pressure to the audible alarm element. Mahig does not disclose a structure that performs the "bypass" function called for in claim 1, allowing the air under pressure to enter one end of the device and continue to the other end without coming into contact with the audible alarm element. Hardy, Tr. 936, 941, 1027.

Claim 1 of the '236 patent is not invalid as anticipated by Mahig.

THE JOSEPH PATENT

The Joseph patent (U.S. Patent 4,852,510) is prior art to the '107 patent and the '236 patent under 35 U.S.C. § 102(e). The application for the Joseph patent was filed on April 20, 1987, well before the date of invention claimed by the inventors named in the '236 and '107 patents. The Joseph patent issued on August 1, 1989. IHK Ex. 8.

Section 102(e) provides that a person shall be entitled to a patent unless-

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

has fulfilled the requirements of paragraphs (1), (2) and (4) of section 371 (c) of this title before the invention thereof by the applicant for patent...

Complainants and the Commission investigative attorney argued that IHK did not assert an affirmative defense against claim 6 of the '107 patent based upon § 102(e) in its amended response. Paragraph 33(n) of IHK's original response to the complaint clearly did assert this defense, but the amended response is not clear on this point. IHK alleged generally that Joseph constituted prior art to both patents and Joseph is mentioned several times throughout the amended response. In paragraph 33(b), IHK asserts that claim 1 of the '236 patent (as filed) was rejected by the PTO under § 102(e), and that claim 6 of the earlier '107 patent was identical to the rejected claim 1. In IHK's "Statement of Issues To Be Tried", filed on September 12, 1994, IHK clearly asserts that Claim 6 of the '107 patent is invalid over Joseph under § 102, because it is identical to the '236 claim that was rejected by the PTO [under § 102(e)]. Under these circumstances, it is not unfair to complainants to allow IHK to argue that Joseph is prior art to both patents under § 102(e).

Joseph qualifies as prior art under § 102(g) as well.

Section 102(g) provides that a person shall be entitled to a patent unless--

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

The invention of Joseph was made at least by the filing date of that patent on April 20, 1987. In this context, "made" refers to the invention.

It is not necessary to prove that a device embodying the invention had been manufactured.

There are significant differences between the structure of the alarm device disclosed in the specifications of the two patents in issue here and the two structures disclosed in the Joseph patent. The first structure disclosed in the Joseph patent specification is a scuba whistle that uses the compressed air in a diver's tank. The pressurized air passes through a sound generator located in the resonant tube. IHK Ex. 8, Col. 2, lines 31-41. Pressurized air passes through small orifices in a sound generation disk located in a resonant tube to create the sound. This sound generation disk produces sound in the same way that a person whistles, i.e., generating sound by moving air through an orifice in a resonant cavity. (The sound of whistling is created by fluctuations of pressure caused by the air resonating with the mouth cavity.) Strasberg, Tr. 681. The Joseph device creates a whistling sound (described as "bird tone vibrations") when air moves through the orifices in the sound generation disk located in the resonant tube. IHK Ex. 8, Col 3, lines 16-24.

The structure for producing sound in the Joseph device does not use a vibrating diaphragm to release air in pulses, as does the air horn. The Joseph device is referred to as a Helmholtz resonator, and this has a structure unlike that of an air horn for producing sound. Strasberg, Tr. 681, 685. Joseph's sound generation disk structure is not the structural equivalent of the air horn disclosed in the '107 patent. Hardy, Tr. 985.

In the second structure disclosed in Joseph, the sound is generated by the air passing across a knife-edge located in a resonant tube. IHK Ex. 8, Col. 5, lines 5-13 and Col. 6, lines 41-49. In this structure, forcing air

across a knife edge produces sound in the same manner as an organ pipe. A jet of air strikes the knife edge, causing fluctuations in pressure that are amplified by the pipe acting as a resonant tube. Strasberg, Tr. 680. Because this structure does not use a vibrating diaphragm to create fluctuations in air pressure, it is different from the air horn in the way it creates sound. Strasberg, Tr. 685. The knife edge structure is not the equivalent of the air horn disclosed in the '107 patent. Hardy, Tr. 985-986.

The two structures that produce the sound in Joseph are not the equivalent of the structure disclosed in the patents in issue here. The invention described and disclosed in the Joseph patent is not the same as, or the equivalent of, the invention described and disclosed in claim 6 of the '107 patent or claim 1 of the '236 patent, and the Joseph patent does not anticipate either claim under § 102(e) or § 102(g).

During the prosecution of the CIP application that resulted in the '236 patent, the PTO examiner held that Joseph anticipated the original wording of claim 1 under 35 U.S.C. § 102(e). Claim 1 as originally worded in that application was identical to Claim 6 of the '107 patent. The examiner apparently compared original claim 1 to the Joseph patent without restricting the scope of the claim to the structure disclosed in the '236 specification and equivalents of that structure. The Federal Circuit later rejected the PTO's "long-standing practice of not applying paragraph six [of Section 112] during examination." In re Donaldson, 16 F.3d 1189, 1193 (Fed. Cir. 1994).

Respondents argue that the Donaldson case is not retroactive in its effect. But the Donaldson case did not change the law, but only the practice of the PTO at that time. The court in Donaldson criticized the PTO for failing to apply paragraph 6 of Section 112 to the prior art when considering

prior art in patent prosecutions. Donaldson did not rewrite Section 112, but only stated that paragraph 6 should be used by the PTO to limit the scope of the prior art that is considered in prosecutions of new patent applications.

Claim 6 of the '107 patent still is presumed to be valid. The validity of claim 6 must be determined in light of current Federal Circuit precedent, including Donaldson.

Following the examiner's rejection of original claim 1 over Joseph, the applicants filed an amendment distinguishing the claim from Joseph. IHK argues that because the applicants distinguished Joseph from their claim 1 to get their claim allowed, they cannot recapture the same subject matter in another claim. But the applicants did not concede that the examiner was correct in finding that claim 1 of the '236 application as originally worded was anticipated by Joseph. The inventors' attorney argued:

While it is believed that the use of the word "selectively" in original claims 1 and 6 does in fact distinguish applicant's invention from Joseph in accordance with the above analysis, Claims 1 and 6 have been amended to clarify the structural feature of pressurized air bypassing the alarm element when air is not to be provided to the alarm element.

IHK Phys. Ex. H, Amendment at 4.

Complainants are not estopped from arguing that Joseph does not anticipate claim 6 of the '107 patent.

THE KIMURA REFERENCE

U.K. Patent Application GB2059660 (IHK Ex. 25) was filed on September 25, 1979, and published on April 23, 1981. It constitutes prior art under 35 U.S.C. § 102(a). The inventor named in this patent application is Kimura.

The Kimura reference (IHK Ex. 25) discloses a hand-held alarm which produces sound when head 10 is depressed to open check valve 14 and allow high

pressure gas from cylinder 12 to flow to diaphragm 22. A similar device is disclosed in U.S. Patent No. 3,785,335 to Wagner (IHK Ex. 21), which was considered by the PTO during prosecution of the '107 and '236 patents. There was no testimony relating to this reference at the hearing, and IHK has offered no analysis showing how each element in the claims at issue is disclosed in Kimura. IHK has not proved that the structure shown in the Kimura reference and the structure disclosed in the patents-in-suit are equivalent under 35 U.S.C. § 112, ¶ 6.

On its face, the structure of the hand-held alarm in the Kimura reference is different from the structure of the audible alarm device disclosed in the patents-in-suit. The disclosed alarm is not an apparatus for use with diving equipment or self-contained breathing apparatus because it does not include any means such as connectors for integrating the alarm into such equipment.

With respect to the "means for selectively providing air" specified in the asserted claims, the alarm disclosed in the Kimura reference does not identically perform the function of selectively providing air to the diaphragm as the term "selectively providing" is used in the context of the patents-in-suit. The claimed invention performs the function of "selectively providing" air by allowing pressurized air to flow through the body of the device when the air horn is not in operation, thereby allowing the user to choose whether or not to provide air to the horn. Strasberg, Tr. 697. In the alarm disclosed in the Kimura reference, the only way high pressure gas in cylinder 12 can exit the alarm is by deflecting diaphragm 22 and producing a sound. While a user can selectively activate the horn, the alarm disclosed in the Kimura reference does not give the user the option of using high pressure gas in cylinder 12 for other purposes without producing a sound. The alarm

disclosed in the Kimura reference does not identically perform the function of selectively providing air as specified in the asserted claims.

The structure in the Kimura reference for providing high pressure gas to diaphragm 22 is not identical to or the equivalent of the button, valve, and passageway disclosed in the patents-in-suit. In the Kimura alarm, check valve 14 is opened by depressing head 10, which is not a button but the entire horn. There is no evidence that the structure of head 10 and check valve 14 is equivalent to the structure of the button and valve disclosed in the patents-in-suit. IHK has not carried its burden of proving by clear and convincing evidence that the Kimura reference satisfies the "means for selectively providing air" element specified in the claims.

With respect to the "means for bypassing the audible alarm" in claim 1 of the '236 patent, the alarm disclosed in the Kimura reference does not include any structure that allows high pressure gas to flow by check valve 14 without contacting diaphragm 22. The Kimura device does not perform the bypassing function because pressurized air cannot flow into and out of the device without producing a sound. IHK has not proved by clear and convincing evidence that the Kimura reference satisfies the "means for selectively bypassing the audible alarm" element in claim 1 of the '236 patent.

IHK has not shown by clear and convincing evidence that the Kimura reference anticipates the invention of the two patents in issue.

STATUTORY BARS TO PATENTABILITY: SECTIONS 102(b) AND 102(c)

Section 102(b) provides that a person shall be entitled to a patent unless--

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to

the date of the application for patent in the United States, ...

35 U.S.C. § 102(b).

IHK's allegations under § 102(b) are contained in paragraph 33(m) of its amended response. IHK alleged that Mahig, Joseph, and perhaps other unnamed prior art disclosed the inventions of the claims in issue. For the reasons given above, Mahig and Joseph do not anticipate. IHK failed to allege or prove any other specific facts that would invalidate the claims under § 102(b), such as on-sale bar or prior use or publication by complainants. The '107 and '236 patents are not invalid under Section 102(b).

Section 102(c) provides that a person shall be entitled to a patent unless he has abandoned the invention. 35 U.S.C. § 102(c). IHK failed to prove that the inventors abandoned their invention.

Abandonment under § 102(c) refers to an abandonment of the right to a patent, not an abandonment of the thing invented. In re Gibbs, 437 F.2d 486 (C.C.P.A. 1971). To prove abandonment under Section 102(c), there must be proof that the inventor intended to abandon his right to a patent. This intent may be implied from the inventor's conduct. Ex parte Dunne, 20 U.S.P.Q.2d 1479, 1480 (Bd. of Patent App. and Int. 1991).

IHK argues that in the spring of 1988, before they filed their first patent application, the inventors had decided not to use the structure disclosed in Figure 5 of the patents. But the inventors' engineering drawings, dated September 13, 1988, are for an audible alarm of the design depicted in Figure 5. Hancock Ex. 30. On October 4, 1988, the design engineering firm retained by the inventors submitted a quotation for injection mold tooling to produce parts in accordance with the September 13 drawings. Hancock Ex. 29. The inventors received parts built from these drawings in

November 1988. Hancock, Tr. 386. The inventors filed their application for a patent on October 12, 1988, between the quotation for tooling and the delivery of parts. Staff Ex. 2.

There is no evidence that the inventors intended to abandon their right to a patent. IHK has failed to prove that the two patents in issue are invalid under Section 102(c).

OBVIOUSNESS

A patent claim will be found invalid if the invention claimed, as a whole, would have been obvious to one of ordinary skill in the art at the time it was made. 35 U.S.C. § 103. The Supreme Court, in Graham v. John Deere Co., 383 U.S. 1 (1966) defined the basic factual inquiry that must be undertaken as part of an obviousness analysis:

[T]he scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined....Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origins of the subject matter sought to be patented.

383 U.S. at 17-18.

In determining whether a patent claim would have been obvious, hindsight appraisals based on combinations of the prior art cannot be used where there is no teaching or suggestion of the combination, or any incentive to use the combinations. Uniroval, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051 (Fed. Cir.), cert. denied, 109 S.Ct. 75 (1988).

1. Scope and content of the prior art

The scope and content of the prior art is considered to consist of references that are either within the inventor's field of endeavor, or are

reasonably pertinent to the particular problem facing the inventor at the time of the invention. Wang Laboratories, Inc. v. Toshiba Corporation, 993 F.2d 858 (Fed. Cir. 1993); In re Deminski, 796 F.2d 436 (Fed. Cir. 1986).

Mr. Hancock identified the problem he sought to solve as the creation of a device that would produce a loud noise by using the compressed air in a diver's tank. At the same time, the device had to be small and compact, and capable of being integrated with existing diving equipment. Hancock, Tr. 374. With respect to both claims at issue, the prior art consists of references disclosing air-operated acoustical devices, and equipment for divers (including devices for use with self-contained breathing apparatus), that were in existence prior to October 12, 1988.

2. Level of ordinary skill in the art in 1988

In 1988, persons who designed acoustical devices were either engineers with an undergraduate degree in engineering, or machinists with several years experience working with engineers in the design and construction of acoustical devices. Strasberg, Tr. 695-696. The ordinary level of skill in this art was quite high in terms of understanding the mechanical operation of an alarm device to be used by a diver on the surface of the water when surfacing at a distance from his boat, and in understanding the needs of such a diver to use his diving equipment and his air supply when the alarm was not needed.

3. Differences between the prior art and the claims

The most pertinent pieces of prior art are the Mahig patent, as well as the patents cited by the examiner during the prosecution of the applications for the '107 and '236 patents. The prior art cited by the examiner includes the following:

self-contained breathing apparatus (IHK Ex. 18, Vestrem patent);

devices that operate by utilizing compressed air from a diver's tank (IHK Ex. 20, Levine patent; and IHK Ex. 22, Flam patent)

devices that utilize the air under pressure to produce an audible alarm when the user presses a button (IHK Ex. 21, Wagner patent, IHK Ex. 8, Joseph patent, and IHK Ex. 7, Mahig patent),

devices that utilize the air under pressure to produce an alarm when the air pressure drops to a certain level (IHK Ex. 19, Gagman patent), and

visual signalling devices for divers (IHK Ex. 23, Shieh patent, and IHK Ex. 24, Johnson patent).

Several of these prior art references disclose devices that contain some of the elements of the audible alarm device disclosed in the patents in issue. Wagner discloses a type of air horn. Levine and Flam disclose devices which use the air in a diver's air tank. None discloses or suggests to one of ordinary skill in the art that he should combine them into a single device. IHK has found no suggestion in the prior art that one should combine these elements. IHK has identified in the prior art elements such as an air horn, devices that use a diver's air tank, and signalling devices, and concludes that the invention of the patents in issue would have been obvious at the time it was made to one of ordinary skill in the art without showing why someone with ordinary skill would have wanted to combine these elements. A prima facie case of obviousness requires:

... some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself.

In re Oetiker, 977 F.2d 1443, 1447 (Fed. Cir. 1992).

The identification of elements of the claims in issue in the prior art is not enough to prove that the patents are invalid for obviousness. IHK has not proved that there was any "reason, suggestion, or motivation" in the prior art

that would lead a person of ordinary skill to combine the prior art air horns, diving equipment, and pressure valves to create the claimed invention.

IHK argues that either Joseph or Mahig would make claim 1 obvious if a conventional "T" fitting were used in combination with either one. Although the addition of a conventional "T" fitting to the Joseph or Mahig device allows the device to perform the bypass function, there is no evidence that one with ordinary skill in the art would have thought of using a conventional "T" fitting with Joseph or Mahig, and there is no evidence that this was taught, suggested or described as desirable by some prior art teaching.

SECONDARY CONSIDERATIONS

Secondary considerations that can support findings of nonobviousness include commercial success, long-felt but unsolved need, failure of others, copying of the claimed invention, and unexpected results. For secondary considerations to preclude a finding of obviousness, the patentee must show a sufficient relationship between the allegedly infringing features of the claimed invention and its commercial success. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1539 (Fed. Cir. 1983).

The inventions claimed in the '107 and '236 patents are sold by complainants under the name "Dive-Alert." The Dive-Alert has been well-received by the trade press since the first one was sold in 1990. Hancock Exs. 14A-14C, 14E-14J, and 14L-14M; Hancock, Tr. 397-401. The trade press considered the device to be a small, reliable, loud-signalling device a diver could use in an emergency.

Complainants have had success in selling their Dive-Alert audible alarm devices. Hancock, Tr. 370-371; Hancock Ex. 18. The Dive-Alert's advantages of being small and light, having a loud sound, and not interfering with the

diver, contributed to these sales. Hancock, Tr. 397-401; Hancock Exs. 14A-14C, 14E-14J, and 14L-14M. Complainants' sales, while relatively small in relation to the total number of registered scuba divers in the United States, indicate that the claimed invention has some commercial success. The evidence of secondary considerations as a whole supports a conclusion of nonobviousness of the '107 and '236 patents.

IHK has failed to present clear and convincing evidence establishing that claim 6 of the '107 patent or claim 1 of the '236 patent is invalid due to obviousness.

SECTION 112

BEST MODE

Section 112 requires that the patent specification set forth "the best mode contemplated by the inventor of carrying out his invention". 35 U.S.C. § 112, ¶ 1. In the case of a continuation-in-part application, the date for evaluating a best mode disclosure is the date of the parent application with respect to common subject matter. Transco Products, Inc. v. Performance Contracting, Inc., 32 U.S.P.Q. 2d 1077 (Fed. Cir. 1994). Both claims in issue are entitled to the filing date of the application for the '107 patent for the purposes of the first paragraph of Section 112. IHK did not prove that the inventors failed to satisfy the best mode requirement at the time they filed their application for the '107 patent.

To establish invalidity based on failure to set forth the best mode, IHK must prove by clear and convincing evidence that the inventors knew of and concealed, either accidentally or intentionally, a better mode of practicing the claimed invention than was set forth in the specification. Engel Industries Inc. v. Lockformer Co., 946 F.2d 1528, 1531 (Fed. Cir. 1991).

The preferred embodiment of the alarm device at the time the patent application was filed is reflected in a set of drawings dated September 10, 1988, that the inventors gave to their patent attorney for use in preparing the application. Hancock Ex. 30, IHK Ex. 50 at 2-9; Tr. 385-387, 1046-1047, 1109. The "second prototype" of the alarm device was based on these drawings. Hancock, Tr. 385-387.

IHK argues that complainants have admitted in answer to Interrogatory No. 89 that the device depicted in Hancock Ex. 32 was conceived in the spring of 1988, before the filing date of the first patent application (October 12, 1988). The drawing in Hancock Ex. 32 is dated 3/13/89 and contains improvements over the embodiment depicted in Fig. 5 of the patents. The answer to Interrogatory No. 89 is an evidentiary admission (not a binding "judicial" admission) and must be weighed against the other evidence in the record. Specific testimony given at the hearing contradicts the more general answer to Interrogatory No. 89 with regard to the time of conception of the features shown in Hancock Ex. 32 that were not submitted to the PTO. Mr. Hancock testified that Hancock Ex. 32 "represents the direction that the Dive-Alert took after ... discussions with Mr. Ben Barrie and Mr. Jim Brown." Hancock, Tr. 391. Mr. Barrie and Mr. Brown were authorities on diving whom the inventors consulted for advice after their second prototype was finished in November 1988 (after the '107 patent application was filed). Hancock, Tr. 387-391. There is no convincing evidence that Hancock Ex. 32 discloses anything that was known to the inventors at the time they filed their patent application and that was concealed from the PTO.

IHK has not proved by clear and convincing evidence that the patent claims in issue are invalid for failure of the inventors to disclose the best mode contemplated to carry out their invention.

ENABLEMENT AND VAGUENESS

IHK has asserted that the claims at issue are invalid because of lack of enablement, and because they are vague, indefinite, and indistinct. IHK's Amended Response, First Affirmative Defense, subparts (g) - (i). IHK alleges that there are significant differences in each patent between Figure 5 and the text of the specification, and that there is no description of how the button stem guide is to be held in place.

A patent specification must contain a written description of the invention in sufficiently clear terms as to enable a person of ordinary skill in the art to make the claimed invention. 35 U.S.C. § 112, ¶ 1; In re Wright, 999 F.2d 1557 (Fed. Cir. 1993). The purpose of the enablement requirement is to assure that the inventor provides sufficient information about the claimed invention so that a person of ordinary skill in the field of the invention can make and use it without undue experimentation. Scripps Clinic & Research Foundation v. Genentech, 927 F.2d 1565, 1571 (Fed. Cir. 1991). The enablement requirement is met if the specification describes any mode of making or using the invention. Engel, supra, 946 F.2d at 1533.

The patent claims must particularly point out and claim the invention. The claims, read in the context of the complete patent, must have a clear and definite meaning when construed by one skilled in the art. 35 U.S.C. § 112, ¶ 2; Miles Laboratories Inc. v. Shandon Inc., 997 F.2d 870, 874-875 (Fed. Cir. 1993), cert. denied, 114 S.Ct. 943 (1994).

IHK alleges that:

Figure 5 does not show an opening between passageway 42 and opening 50;

In Figure 5, the lateral opening 74 does not appear in button stem guide 68;

Figure 5 does not show registry between bore 64 and peripheral groove 76; and

There is no description of how button stem guide 68 is held in place.

IHK has failed to prove that one of ordinary skill in the art would not know from reading the patent what the claims cover and how to make the claimed invention.

With respect to whether there is an opening between passageway 42 and opening 50, both patent specifications describe a "fluid continuous passage" indicating that air under pressure can pass from 42 into 50. Strasberg, Tr. 693; Staff Ex. 2, Col. 3, lines 60-63; Staff Ex. 3, Col. 3, line 67 - Col. 4, line 1.

The specification in each patent makes it clear that lateral hole 74 is located in the button stem guide 68, and this would be evident to one using the patents to construct the invention. Strasberg, Tr. 746-748. Bore 64 and peripheral groove 76, as depicted in Figure 5, are in registry. Strasberg, Tr. 752.

Although IHK asserts that the patents are invalid for lack of enablement because there is no description of how the button stem guide is held in place, the specification need not contain unnecessary manufacturing details. The button stem guide must stay in place for the invention to work, but the way in which this is accomplished does not matter. Many ways for joining parts in similar devices are known. Hardy, Tr. 969.

IHK has not proved that the patent specifications are not sufficiently clear to enable one of ordinary skill in the art to make and use the invention. Any lack of clarity in Figure 5 is clarified by the text of the specification. Section 112, paragraph 1 refers to the "specification", as well as the drawings. The specification, when read by one of ordinary skill in the art, satisfies the enablement requirement.

A determination of whether a claim particularly points out and distinctly claims the subject matter that the patentee regards as his invention (35 U.S.C. § 112, ¶ 1) is made based on the specification. If one skilled in the art, reading a means-plus-function claim, would understand the "means" set forth in the specification, the claim is sufficiently precise for purposes of the first paragraph of Section 112. In re Hayes Microcomputer Products Litigation, 982 F.2d 1527, 1533-1534 (Fed. Cir. 1992). IHK failed to prove that the specifications would not be clear enough to one of ordinary skill in the art to allow him to make the invention. The claims are not invalid based on vagueness and indefiniteness.

FOREIGN FILING

IHK asserts that the patentees failed to obtain a license to file a foreign patent application as required by 35 U.S.C. § 184. Under 35 U.S.C. § 185, failure to comply with Section 184 may invalidate the U.S. patent.

On the front page of the file wrapper for the '107 patent is the statement "Foreign Filing License Granted 12/22/88." IHK Phys. Ex. G. On the front page of the file wrapper for the '236 patent states: "Foreign Filing License Granted 10/04/90." IHK Phys. Ex. H.

The only foreign patent filing in this record is the European Patent Organisation ("EPO") application, filed April 5, 1990. IHK Ex. 6. The EPO

application corresponds to the '107 patent in that the claims and specification disclose only the use of the invention in a diving environment. The EPO application was filed after the PTO granted the license to file foreign applications corresponding to the '107 patent. IHK has failed to establish that the '107 patent is invalid under 35 U.S.C. § 185.

ENFORCEABILITY OF THE '236 PATENT

The United States Patent and Trademark Office ("PTO") imposes a duty of candor and good faith on those who file patent applications. There is a duty to disclose to the PTO all information known by the applicant to be material to patentability. 37 C.F.R. § 1.56 (1988). An applicant's failure to disclose this information to the PTO during the prosecution of the patent's application is the basis for finding a patent unenforceable due to "inequitable conduct". Kingsdown Medical Consultants, Ltd. v. Hollister, Inc., 863 F.2d 867 (Fed. Cir. 1988), cert. denied, 490 U.S. 1067 (1989).

IHK alleges that the '236 patent is unenforceable because of inequitable conduct. The basis for this argument is the fact that the applicants for the '236 patent failed to bring to the attention of the patent examiner certain patents cited in the prosecution of the EPO (European Patent Office) Application 90303676, filed by the English patent agents for the same inventors named in the '236 patent.

The party alleging inequitable conduct based on a patent applicant's failure to disclose information to the PTO must establish that the information withheld was material and that the applicant intended to mislead the PTO. Scripps Clinic & Research Foundation v. Genentech, 927 F.2d 1565 (Fed. Cir. 1991). A party asserting inequitable conduct must prove it by clear,

unequivocal, and convincing evidence. LaBounty Manufacturing, Inc. v. United States International Trade Commission, 958 F.2d 1066 (Fed. Cir. 1992).

1. Is the Kimura prior art patent material? Under the PTO regulations in force when the patent applications in issue were filed, materiality was established when there was "a substantial likelihood that a reasonable examiner would consider [the information] important in deciding whether to allow the application to issue as a patent." 37 C.F.R. § 1.56(a) (1988). A patentee has no obligation to disclose an otherwise material reference if the reference is cumulative or less material than those already before the examiner. Halliburton Company v. Schlumberger Technology Corporation, 925 F.2d 1435, 1440 (Fed. Cir. 1991).

The Kimura patent identified in the file search in the EPO application was not just cumulative or less material than other prior art before the examiner reviewing the '236 patent application. It was as material as any of the prior art references before the examiner. The EPO rejected the original claims in the EPO application citing Kimura as well as Joseph and other prior art. The applicants in response to this rejection then amended their claims to add limitations not found in the '236 patent claims as issued. IHK Ex. 6. The Kimura patent was material prior art.

2. Was there an intent to deceive? It is not necessary to have direct evidence of an intent to deceive, Merck & Co., Inc. v. Danbury Pharamcal, Inc., 873 F.2d 1418, 1422 (Fed. Cir. 1989), but gross negligence is not enough to support a finding of intent to deceive. Halliburton Co. v. Schlumberger Technology Corp., 925 F.2d 1435, 1442 (Fed. Cir. 1991). The application for the '236 patent was filed on August 17, 1990, and was issued on April 21, 1992. The prior art Kimura patent, cited along with other articles in the

European search report, was sent to Hancock's English patent agents on December 20, 1990, well before the '236 patent was issued. IHK Ex. 6 at 32. It is not clear whether the English patent agents ever sent a copy of the EPO application to complainants' attorney in the United States, although it seems likely that they would have done so. But there is no clear and convincing evidence showing that the inventors or their attorney in the United States were made aware of the EPO prior art search at any time during the prosecution of the application for the '236 patent. On April 15, 1991, the patent examiner in the United States first indicated that he knew about one of the patents found by the EPO patent examiner. IHK Phys. Ex. H at 36. IHK argues that the knowledge of complainants' patent agents in England can be imputed to complainants. Knowledge imputed to complainants falls short of proving that the complainants or their attorney in the United States intentionally misled the PTO in connection with the application for the '236 patent.

IHK failed to prove that complainants intended to deceive the PTO. Mr. Hancock was unaware of the details of the EPO application. Hancock, Tr. 873, 876. The inventors were not under a duty to disclose anything of which they were unaware. Tennant Co. v. Hako Minuteman, Inc., 651 F.Supp. 945, 957 (N.D. Ill. 1986).

IHK has not shown by clear and convincing evidence that the '236 patent is unenforceable based on inequitable conduct.

INFRINGEMENT

Both complainants' alarm device and the accused Supra Horn use small air horns to make a loud sound above the water's surface to signal others when the diver may have surfaced at a distance from his boat. Staff Exs. 2, 3, 14. Both alarm devices are designed to use the air contained in the diver's air

tank to produce the sound. Neither device interferes with the diver's use of the air in the tank for breathing while diving when no alarm is needed.

To establish infringement of a patent, every limitation set forth in a claim or a substantial equivalent must be found in the accused product.

Dolly, Inc. v. Spalding & Evenflo Companies, Inc., 16 F.3d 394 (Fed. Cir. 1994).

To determine whether a patent claim is infringed, one first interprets the claim to determine its scope and meaning, and then determines whether the accused device is within the scope of the claim as properly construed. Dolly, Inc., supra at 397. The claims have been construed. See p. 7 above.

Most of the claim limitations are written in means-plus-function language. Specific structures for performing the claimed functions are disclosed in the specifications. Under 35 U.S.C. § 112, ¶ 6, literal infringement may be established if the accused device contains "the corresponding structure ... disclosed in the specification and equivalents thereof." An "equivalent structure" is one which, while not identical to the disclosed structure, has only insignificant differences. Valmont, supra.

LITERAL INFRINGEMENT

Infringement may be found if the claim literally reads on the accused device. Johnston v. IVAC Corporation, 885 F.2d 1574, 1580 (Fed. Cir. 1989).

The Supra Horn literally infringes claim 1 of the '236 patent. It performs precisely the same functions as those claimed in claim 1 of the '236 patent. Any differences between the Supra Horn's structures for performing each claimed function and the corresponding structures disclosed in the patent's specification are insignificant. Each of the structures of the Supra Horn that performs the specified functions is an equivalent, as that term is

used in Section 112, paragraph 6, of the corresponding structure disclosed in the specification.

1. means responsive to air under pressure to produce an audible alarm, said audible alarm means including an audible alarm element

The Supra Horn's structure for producing an audible alarm is an equivalent of the corresponding structure disclosed in the specification of the '236 patent. The Supra Horn has a noise generating structure comprising a horn bell and diaphragm. Strasberg, Tr. 719, 728. Air under pressure enters a volume inside the structure through small holes, and comes into contact with the diaphragm. The air pressure builds up until it deforms the diaphragm, pushing it away from the wall of the horn bell, causing some of the air to escape. Strasberg, Tr. 719; Staff Exs. 16, B-1 and H. Like the diaphragm described in the specification, the diaphragm in the Supra Horn vibrates back and forth, causing the surrounding air molecules to vibrate while at the same time causing the air under pressure to escape in pulses resulting in pulsations of pressure at an audible frequency that are sensed as sound. As with the device disclosed in the specification, the horn shape of the bell amplifies the sound in a manner similar to a megaphone. Strasberg, Tr. 682-684, 719, Staff Exs. 16, B-1, H and K. The structure of the Supra Horn alarm's air horn differs from the device shown in Fig. 5 of the patent in that the air enters the cavity through two openings in a peripheral lip instead of four openings in the side of the outer wall. This difference is insignificant. Strasberg, Tr. 744. The Supra Horn's noise generating structure and the corresponding structure disclosed in the specification are substantially the same. Strasberg, Tr. 728.

2. said alarm means being adapted to be carried on or about the person of the user of the apparatus during use thereof, without interfering with the use of the apparatus

The Supra Horn is a small, lightweight device, designed to utilize male and female connectors that allow it to be hooked up to a user's self-contained breathing apparatus. Hancock, Tr. 464; Hancock Phys. Ex. F. The Supra Horn could be integrated with a diver's equipment and used. Hancock, Tr. 456-457.

3. means for receiving air under pressure from a tank source thereof which is carried on or about the person of the user

The Supra Horn performs the function of receiving air under pressure. Strasberg, Tr. 720, 724-725; IHK Phys. Ex. C. Like the structure disclosed in the specification of the '236 patent, the Supra Horn has a metal tube with couplings on each end, a passageway extending through the tube, and an opening for diverting air from the tube. Hancock, Tr. 464; Strasberg, Tr. 720. One coupling is a male connector adapted for connection to a hose leading from a user's air tank. Hancock, Tr. 438; Staff Ex. 16, p. 3. The Supra Horn receives air under pressure through the male connector, and the air passes through the metal tube. Hancock, Tr. 464; Strasberg, Tr. 718, 720. The tube has a hole into which is threaded a valve structure. IHK Phys. Ex. C; Staff Exs. 16, p. 5, and B-1. The air under pressure moving through the tube comes into contact with the head of this valve (Strasberg, Tr. 764), just as the air comes into contact with the head (78) of the valve disclosed in the specification of the '236 patent. The structure of the passageway in the metal tube in the Supra Horn alarm is equivalent to the structure of passageway 42 shown in Fig. 5 of the patents in issue. Strasberg, Tr. 779-780.

The structure for receiving air under pressure in the Supra Horn alarm is equivalent to the corresponding structure disclosed in the patent.

4. [means for] selectively providing said air to said audible alarm element

The valve structure in the Supra Horn performs the function of selectively providing air under pressure to the air horn. Strasberg, Tr. 725. When a user pushes the Supra Horn's button, a piece of plastic under the button presses down on a stem that sticks out of the top of the valve structure. Strasberg, Tr. 718-719; IHK Phys. Ex. C; Staff Exs. 16 and B-1. The valve is a common Schrader valve conventionally used in automotive tires. Strasberg, Tr. 719. The valve is threaded into the metal tube that is connected to the air under pressure. IHK Phys. Exs. C, E; Staff Phys. Ex. B-1. When the button is depressed, the valve is opened and allows air under pressure to flow out the top of the valve into a space underneath the button. Strasberg, Tr. 719; Hardy, Tr. 988-989, Staff Exs. 14, 16 and B-1; IHK Ex. 32, last page. The air under pressure then passes through small holes and enters the space between the metal tube and the body of the Supra Horn. Strasberg, Tr. 719, Staff Phys. Ex. B-1. It passes around the metal tube and through small holes that lead to the noise generating structure. Id.

The valve structure in the Supra Horn differs slightly in detail from that set forth in the specification, but the differences are not significant. Strasberg, Tr. 726. The drawings of both valves incorporate a valve head on the end of a stem which extends through a hole and is guided in place. When the button in either device is depressed, the valve head moves away from the guide and air under pressure enters the hole, surrounding the valve stem. The air under pressure then moves through a series of small apertures and passageways until it reaches the noise generating structure of the device. Staff Exs. A, B-1, G, and H.

5. means for bypassing said audible alarm element with said air when said air is not to be provided to said audible alarm element

The structure of the Supra Horn that receives air also performs the function of providing a bypass for the air when no noise is being generated. Strasberg, Tr. 726-727. The metal tube is configured so that air under pressure, while passing through the passageway, comes into contact with the valve structure. When the Supra Horn is not in use, the air under pressure passes by the valve structure without coming into contact with the Supra Horn's noise generating structure. Strasberg, Tr. 727; IHK Phys. Ex. C. Like the corresponding structure disclosed in the '236 patent, the male connector and metal tube perform the function of receiving air under pressure and also perform the function of "bypassing" the noise generating structure when the alarm is not in use.

The functions of the Supra Horn are identical to those claimed in the means-plus-function limitations of claim 1 of the '236 patent. The structures that perform these functions in the Supra Horn are the equivalent of the corresponding structures in the patent specification. Each of the means-plus-function limitations of the claim is present in the Supra Horn. One can use the Supra Horn in connection with self-contained breathing apparatus without having the Supra Horn interfere with the use of this apparatus. The Supra Horn literally infringes claim 1 of the '236 patent.

The three limitations of claim 6 of the '107 patent are also present in claim 1 of the '236 patent. The structures disclosed in the specification of the '236 patent for performing the specified functions are identical to those disclosed in the specification of the '107 patent. Any article covered by

claim 1 of the '236 patent is also covered by claim 6 of the '107 patent. The Supra Horn literally infringes claim 6 of the '107 patent.

Respondent IHK points out a number of differences between the Supra Horn and the device disclosed in claim 6 of the '107 patent and in claim 1 of the '236 patent:

1. button-stem guide 68;
2. peripheral groove 76;
3. lateral opening 74;
4. axial opening 72;
5. o-rings 71;
6. washer and o-ring beneath a spring;
7. threading of a button stem into a button;
8. central depending cylindrical portion 81;
9. outer square wall;
10. space between button and wall;
11. narrow lip of axial opening 72;
12. circular lip 52;
13. wall 54 defining a square volume 55;
14. three-step increase in diameter of opening 50;
15. angular bore 64;
16. a structure between the passageway 42 and opening 50;
17. slightly concave lower surface 62;
18. outer peripheral wall 88 terminating slightly above inner peripheral wall 86;
19. four openings 90;
20. a button stem 75 having a shank diameter slightly less than the diameter of a lower portion of axial opening 72.

These differences are not in the function but in the structure of the device. The differences in the structures disclosed in the patent specifications and the structure of the Supra Horn are not significant to the claimed functions. Although the Supra Horn lacks a number of features that are found in the structures disclosed in the '107 and '236 patents, the functions are the same and the structural differences are not significant.

INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS

Infringement may be found under the doctrine of equivalents if an accused product performs substantially the same function in substantially the same way to obtain substantially the same result. Graver Tank & Mfg. Co. v. Linde Air

Products Co., 339 U.S. 605, 608 (1950); Valmont Industries, Inc. v. Reinke Manufacturing Co. Inc., 983 F.2d 1039, 1043 (Fed. Cir. 1993).

To infringe under the doctrine of equivalents, every limitation of the claim must be found in the accused product, literally or by a substantial equivalent. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1389 (Fed. Cir. 1992). If a claim is written in means-plus-function language, the accused product must perform each claimed function or an equivalent function to infringe under the doctrine of equivalents. Pennwalt Corporation v. Durand-Wayland, Inc., 833 F.2d 931, 936 (Fed. Cir. 1987), cert. denied, 485 U.S. 961 (1988).

The range of equivalents to which a claim is entitled is determined by the prior art, the prosecution history, and a determination as to whether the patent could be considered to be a pioneer patent. Inventions that represent a narrow improvement in a crowded field are entitled to little or no range of equivalents. Hughes Aircraft Co. v. United States, 717 F.2d 1351 (Fed. Cir. 1983).

Claim 6 of the '107 patent and claim 1 of the '236 patent are entitled to a narrow range of equivalents. The prior art cited during the examination of the patents indicates that air horns and equipment designed to operate off a diver's tank of compressed air had been known and used for some time, although audible alarm devices for divers were uncommon. Staff Exs. 2 and 3.

Even if the two claims in issue have a narrow range of equivalents, the *Supra Horn* is so close to the device claimed in the two patents that it infringes the claims in issue literally, and clearly is covered by the doctrine of equivalents.

The Supra Horn performs exactly the same functions as those claimed in the claims at issue, it achieves the same results as those set forth in the limitations of the claims at issue, and it performs each of the claimed functions in substantially the same manner as disclosed in the patent specification of each patent.

In both devices, air under pressure enters from an air hose connected to the user's tank. When the device is not in use, the air passes by the noise generating structure. A valve structure incorporating a stem, head, stem guide, air passageway around the stem, and a series of small apertures and passageways, provides air to the noise generating structure when the user presses a button that depresses the stem. Air under pressure passes through the series of small apertures and passageways until it enters a chamber adjacent to a diaphragm. The diaphragm is deformed until it allows some of the air to escape, and then snaps back, resulting in pulsations of pressure at an audible frequency. Both devices utilize a horn bell to amplify the sound that is created.

The Supra Horn therefore infringes claim 6 of the '107 patent and claim 1 of the '236 patent under the doctrine of equivalents.

DOMESTIC INDUSTRY

In an investigation based on claims of patent infringement, Section 337 requires that an industry in the United States relating to the articles protected by the patent exist or be in the process of being established. 19 U.S.C. § 1337(a)(2). Traditionally, this requirement has been satisfied by showing that a patented product is manufactured in the United States and sold here or abroad. In the 1988 amendments to Section 337, the test was broadened

to make it easier to prove the existence of a domestic industry. The statute provides:

. . . an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent . . . concerned --

- (A) significant investment in plant and equipment;
- (B) significant employment of labor or capital; or
- (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3). Only one of these three elements has to be met to establish the existence of a domestic industry.

PRACTICING THE PATENTS

The phrase "with respect to the articles protected by the patent" requires proof that complainants are practicing claim 1 of the '236 patent and claim 6 of the '107 patent. Complainants' Dive-Alert alarm device practices both claims. The Dive-Alert performs functions identical to the functions claimed in each claim. Each of the structures in the Dive-Alert that performs these functions is an equivalent, under 35 U.S.C. § 112, ¶ 6, of the corresponding structure disclosed in the specifications. The three limitations of claim 6 of the '107 patent are also present in claim 1 of the '236 patent. The Dive-Alert will be analyzed in relation to the limitations of claim 1 of the '236 patent.

1. means responsive to air under pressure to produce an audible alarm, said audible alarm means including an audible alarm element

The Dive-Alert has a noise generating structure with a horn bell and diaphragm. Hancock, Tr. 437; Strasberg, Tr. 711; Staff Phys. Ex. J-1. Air under pressure enters the tapered circumferential space around the outer part of the horn. Strasberg, Tr. 706. The air under pressure passes through small holes and passes into a larger space where it comes into contact with the

diaphragm. The air pressure builds up in the larger space until the diaphragm is deformed and pushed down and away from one of the walls of the larger space. This creates an opening between the diaphragm and the wall, allowing a portion of the air under pressure to escape into the environment. The diaphragm operates in the same way as the diaphragm depicted in Figure 5 of the patent's specification. Strasberg, Tr. 706, 711. It releases air in pulses that are sensed as sound.

2. said alarm means being adapted to be carried on or about the person of the user of the apparatus during use thereof, without interfering with the use of the apparatus

The Dive-Alert devices currently made and sold by complainants are small, lightweight devices that connect to a user's equipment. Hancock, Tr. 433; Hancock Exs. A - D. They are designed to utilize male and female connectors that allow them to be readily integrated with a user's self-contained breathing apparatus. Hancock, Tr. 338-344, 456-457. Mr. Hancock has used the Dive-Alert on "hundreds of dives" and has never experienced any interference problems with it. Tr. 1060.

3. means for receiving air under pressure from a tank source thereof which is carried on or about the person of the user

The Dive-Alert performs the function of receiving air under pressure from a user's tank. Hancock, Tr. 438; Strasberg, Tr. 707-708. Air under pressure enters a passageway in the device through a male connector. Hancock Phys. Ex. A. This air passageway leads from the male connector into the interior of the Dive-Alert and extends through to the other side of the device. Hancock, Tr. 438; Staff Phys. Ex. J-1. The interior passageway of the Dive-Alert is configured so that air under pressure, while passing through the passageway, comes into contact with the structure which selectively provides air to the noise generating structure. Staff Phys. Ex. J-1. The Dive-Alert's structure

for performing the function of receiving air under pressure is essentially identical to the corresponding structure disclosed in Figure 5 of the specification. Strasberg, Tr. 708; Hancock, Tr. 438-439.

4. means for selectively providing said air to said audible alarm element

The Dive-Alert has a valve structure that performs the function of selectively providing air to the noise generating structure. Strasberg, Tr. 708. When a user pushes the Dive-Alert's button, it presses down on a stem which passes through a "cylindrical channel" in the piece of molded plastic which serves as the body of the Dive-Alert. Strasberg, Tr. 742; Staff Phys. Ex. J-1. At the end of the stem is a head which rests against the other end of the channel. Using the button to press on the stem opens up the interior of the channel to the air in the passageway. As a result, the air under pressure enters the channel and passes part way through it (surrounding the valve stem as it does). The air under pressure exits the channel when it encounters an angular "bore" which leads to the air horn. Strasberg, Tr. 742; Staff Phys. Ex. J-1.

While the valve structure in the Dive-Alert is not identical to the valve structure disclosed in the specification, the differences between the two are insignificant. Strasberg, Tr. 742-743. Both structures incorporate a valve head on the end of a stem that extends through a hole and is guided in place. When the button in either device is depressed, the valve head moves away from the guide and air under pressure enters the hole, surrounding the valve stem. The air under pressure then moves through an angular bore until it reaches the noise generating structure of the device. Staff Exs. A and J-1.

5. means for bypassing said audible alarm element with said air when said air is not to be provided to said audible alarm element

The Dive-Alert's structure allows pressurized air to bypass the air horn area of the device when the user does not wish the alarm to sound. Strasberg, Tr. 710. When the alarm is not in use, the pressurized air goes through the device without reaching the air horn area. The Dive-Alert's structure for bypassing the air horn area is substantially the same as the corresponding structure in Figure 5 in the two specifications. Strasberg, Tr. 710-711.

The Dive-Alert's functions are identical to those claimed in the means-plus-function limitations of claim 6 of the '107 patent and claim 1 of the '236 patent. Any differences between the structures disclosed in the specifications and the structures in the Dive-Alert are insignificant. Each structure that performs a claimed function in the Dive-Alert is the equivalent of the corresponding structure in the patent specifications. A diver can use the Dive-Alert with self-contained breathing apparatus without interfering with the regular breathing apparatus. The Dive-Alert alarm device practices claim 6 of the '107 patent and claim 1 of the '236 patent.

DOMESTIC PRODUCTION OF THE ALARM DEVICES

There is a domestic industry in this case. All of Complainants' Dive-Alert alarms are manufactured, tested, stored, packaged, and shipped in the United States. Hancock, Tr. 350; Hancock Phys. Ex. E. Since 1990, Complainants have sold [confidential] Dive-Alert alarms in the United States and some[C] foreign countries. Hancock, Tr. 359, 892; Hancock Phys. Ex. E. There is no evidence that any aspect of the manufacture of the Dive-Alert is conducted outside the United States.

Ideations [C] space in Seattle, Washington, that is devoted entirely to the production and sale of the Dive-Alert. Hancock, Tr. 351-358. Ideations owns a variety of equipment utilized in the production and testing of the Dive-Alert, as well as office equipment. Hancock, Tr. 356-357. This equipment was valued in 1994 at [C] before depreciation. Hancock Ex. 18E.

Ideations obtains the component parts used in the manufacture of Dive-Alerts from companies in the United States. IHK Ex. 28. pp. 6-8. [C] of the labor used in the production of the Dive-Alert alarms is subcontracted. Hancock, Tr. 352-353; Hancock Exs. 18A-18E. Mr. Hancock himself [C] [C] by Ideations, and devotes all his time to matters relating to the Dive-Alert, which is the only product of Ideations. Hancock, Tr. 881.

IHK argues, in substance, that this industry is too small to be protected by Section 337. But there is no requirement under Section 337 that an industry be a certain size. Nor is it necessary that a plant be owned rather than leased, that labor be directly employed rather than subcontracted, that components be manufactured in-house rather than purchased, that production equipment be sophisticated, or that a sole owner of a business draw a certain minimum salary to qualify as a domestic industry. There is no requirement that a patent owner who incorporates his business formally assign or license his patent rights to the corporation in order to show that the corporation's expenditure of his money constitutes an investment in the exploitation of his patent.

CONCLUSIONS

1. The Commission has subject matter jurisdiction and personal jurisdiction over respondents IHK and Duton.

2. Claim 6 of the '107 patent and claim 1 of the '236 patent are valid and enforceable.
3. There is a domestic industry manufacturing and selling products protected by these two claims.
4. Respondent IHK has imported products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent.
5. Respondent Duton has exported to the United States products that infringe claim 6 of the '107 patent and claim 1 of the '236 patent.
6. There is a violation of Section 337 of the Tariff Act.

The evidentiary record in this proceeding consists of all exhibits identified in Staff Exhibit 1, Hancock Ex. 1 and IHK Exhibit 1. The evidentiary record also includes the transcript of the testimony at the hearing. The evidentiary record is hereby certified to the Commission. The pleadings record also includes all papers and requests properly filed with the Secretary in this proceeding.¹

Janet D. Saxon

Janet D. Saxon
Administrative Law Judge

Issued: February 2, 1995

¹ Pursuant to § 210.53(h) of the Commission's Rules, this initial determination shall become the determination of the Commission unless a party files a petition for review of the initial determination pursuant to § 210.54, or the Commission pursuant to § 210.55 orders on its own motion a review of the initial determination or certain issues therein. For computation of time in which to file a petition for review, refer to §§ 210.54, 201.14, and 201.16(d).

