Proceedings
of the Marine Safety Council

U.S. Department
of Transportation
United States
Coast Guard

Vol. 39, No. 11 **December 1982** **CG-129**

Proceedings
of the Marine Safety Council

Published monthly by the Commandant, USCG, in the interest of safety at sea under the auspices of the Marine Safety Council. Special permission for republication, either in whole or in part, with the exception of copyrighted articles or artwork, is not required provided credit is given to the *Proceedings of the Marine Safety Council*. The views expressed are those of the authors and do not represent official Coast Guard policy. All inquiries and requests for subscriptions should be addressed to Commandant (G-CMC), U.S. Coast Guard, Washington, DC 20593; (202) 426-1477. Please include mailing label when sending in a change of address. The Office of the Secretary of Transportation has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this agency. Use of funds for printing this publication has been approved by the Director of the Office of Management and Budget through March 31, 1985.

DIST. (SDL No. 116)
A: acde(2); fghklmntuv(1)
B: n(50); c(16); e(5); f(4); gj(3); r(2); bkiq(1)
C: eglmp(1)
D: adgklm(1)
E: mn(1)
F: abcdehjkloqst(1)
List TCG-06

When you have finished reading this issue, please pass it on.

Contents

features

Training Facilities with Coast Guard-approved Radar Observer Courses 322

Emergency Care for Hypothermia
by Richard C. Hiscock 327

Sinbad of the Coast Guard
by Paul Powers 329

"Hello. This is a computer talking to you . . ."
by LT Ed McKenzie 332

Safety Films from England 336

A Clean Slate for Safe Entry 338

New Reports Available from Ship Structure Committee 340

departments

Maritime Sidelights 319
Keynotes 324
Annual Index 341
Lessons from Casualties 342
Chemical of the Month 343
Marine Safety Council Membership 345
Nautical Queries 346

cover

This month marks the 30th anniversary of the death of Sinbad, mascot of the U.S. Coast Guard Cutter CAMPBELL. Here, CDR Gilbert Lynch reads the little dog his retirement orders at ceremonies held aboard the CAMPBELL September 21, 1948. *"Sinbad of the Coast Guard" begins on page 329.*

The Marine Safety Council and its staff would like to wish you and your family a happy and safe holiday season. We would also like to take this opportunity to introduce ourselves and to familiarize you with the functions of the Marine Safety Council staff so that we may better serve you.

Captain Christopher M. Holland, Executive Secretary, is our office chief. As Executive Secretary, he has oversight responsibility* for the Coast Guard regulatory system and ongoing regulatory projects. Any comments or concerns dealing with Coast Guard regulatory actions should be directed to him. Captain Holland also serves as Executive Secretary for the Towing Safety Advisory Committee and the Chemical Transportation Advisory Committee and oversees the administration of these committees.

Bruce P. Novak is Deputy Executive Secretary and acts for the Executive Secretary in his absence.

Lieutenant (j.g.) David R. Schoorens, Regulations Coordinator, maintains all files relating to Coast Guard regulations. Any questions dealing with the status of regulations or the availability of information on Coast Guard regulations should be directed to him.

Ensign Frederick Kenney is our Publications Officer and Committee Officer. Questions concerning Coast Guard marine safety publications, the Code of Federal Regulations, or the FEDERAL REGISTER should be directed to him. Inquiries about the activities or records of the Towing Safety Advisory Committee or the Chemical Transportation Advisory Committee should also be directed to him.

Chief Petty Officer John E. Forbes takes care of administrative matters for the office and helps the Regulations Coordinator and Publications Officer answer requests from the public.

Geraldine Brown is secretary to the Executive Secretary.

Mary Abraham, our clerk/typist, maintains and updates the mailing list for the *Proceedings of the Marine Safety Council.* She also handles requests for reprints of the daily FEDERAL REGISTER.

Julie Strickler is editor of the magazine you are reading. Questions and comments about the magazine or submissions should be directed to her.

The office of the Marine Safety Council staff is located in room 4402 at Coast Guard Headquarters (2100 Second Street SW, Washington, DC). Our telephone number is (202) 426-1477. Correspondence should be directed to:

Commandant (G-CMC)
U.S. Coast Guard
Washington, DC 20593

* This means he is responsible for all oversights—Ed.

Maritime Sidelights

Comprehensive List of NVCs to Be Printed

An update on Navigation and Vessel Inspection Circulars was printed in the July 1982 issue of the *Proceedings,* and a comprehensive list was promised for the December 1982 issue. The officials responsible for the NVCs have since decided that a separately printed comprehensive list would better serve the needs of the maritime community.

The new list, "O-83," will be published in January 1983 and mailed to all NVC subscribers. It will also be available from local OCMIs (Officers in Charge of Marine Inspection) or from Commandant (G-MP-4/14), U.S. Coast Guard Headquarters, Washington, DC 20593; (202) 426-2163.

A July update of the NVC list will continue to appear in the *Proceedings.*

Coast Guard Looking for Engineers and Naval Architects

The Coast Guard is interested in filling several engineering and naval architect positions in its Marine Technical and Hazardous Materials Division (Office of Merchant Marine Safety). Responsibilities include vessel plan review, research administration, policy-making, and interaction with other government agencies

and other national administrations. The salary for these positions ranges from $16,000 (GS 7) to $45,000 (GS 13), depending on the applicant's experience.

Interested persons should fill out an SF-171, the standard application form for employment with the Federal government. Such forms are available from any government agency. The completed SF-171 should be submitted to:

Civilian Personnel Branch
(C-CAS-5)
U.S. Coast Guard
Washington, DC 20593
Tel.: (202) 426-2330

TSAC Appoints New Members

Secretary of Transportation Drew Lewis has anounced the appointment of nine members to the Towing Safety Advisory Committee (TSAC).

TSAC advises the Secretary on matters concerning shallow-draft inland and coastal waterway navigation and towing safety. The members of the committee represent various interested parties and geographical areas. The new members began serving on the committee at the TSAC meeting held October 6 - 7, 1982.

The new appointments are: William Creelman, President, National Marine Service, Inc., St. Louis, Missouri, David S. Field, Lake Providence Marine Terminal Co., Lake Providence, Louisiana, Paul Giordáno, P & F Giordano Market, Philadelphia, Pennsylvania, Captain John G. Graham, General Manager, Gulfcoast Transit Company, Tampa, Florida, Charles F. Lehman, Vice President, American Commercial Barge Line, Jeffersonville, Indiana (reappointment), Austin P. Olney, Lebouef, Lamb, Leiby and MacRae, Washington, DC, Robert W. Sanders, President, Turecamo Coastal & Harbor Towing Corp., New York, New York, Steven Scalzo, Vice President, Foss Launch and Tug Co., Seattle, Washington (reappointment), and Captain William F. Tuttle, Local 333, United Marine Division, New York, New York.

HHS Declares Grace Period for Medicare Sign-up

The Department of Health and Human Services has announced that merchant seamen eligible for Medicare who have not enrolled in Medicare Part B medical insurance may sign up without having to pay a surcharge for late enrollment during a grace period ending December 31, 1982.

Until last year, merchant seamen who became eligible for Medicare by reason of age, disability, or kidney failure could still receive their health care through U.S. Public Health Service hospitals. In March 1981 the department announced that, effective the following October, PHS hospitals would be transferred to communities. Most Medicare-eligible seamen subsequently signed up for Part B insurance. Some, however, chose not to enroll in Part B, which requires the beneficiary to pay a monthly premium as well as a premium surcharge for late enrollment.

Under a new law, merchant seamen may now enroll in Part B without having to pay a surcharge if they do so before December 31 of this year. The surcharge will be imposed on enrollments after that date. The new law also provides that, during the same period, seamen may pick up Part A hospital insurance according to regular Social Security provisions. In addition, merchant seamen who enrolled in Medicare after March 1981 at a higher premium rate can, under the new law, have their premium rolled back to the standard rate.

Full details on the provisions of the new law are available from local Social Security offices.

MarAd Releases Report on Alaskan Gas Option

The Maritime Administration has released a technical report on the potential development and use of Alaskan natural gas. The study concludes that gas produced in the Prudhoe Bay area, currently the major source of the state's oil, could be piped to South Alaska, liquefied, and moved to potential markets by ship at costs that would be competitive with those of pipeline systems.

The two-volume report, "Alaska Natural Gas Development: An Economic Assessment of Marine Systems," analyzes and combines information on Alaskan gas supplies, processing and transportation options, and markets for gas-based fuels and fertilizers. It was prepared under contract by ICF Inc., of Washington, DC.

ICF found that, although major resource deposits are anticipated throughout Alaska, only Prudhoe Bay gas could provide significant new gas supplies during the next decade. It also noted that Alaska North Slope gas lends itself more to liquefied natural gas (LNG) than to methanol.

ICF concludes in its report

that the most economically attractive system for developing Prudhoe Bay natural gas would be to pipe it to South Alaska, liquefy it at barge-mounted plants, and ship it as LNG to Japan. Further, if development options are limited to supplying the lower 48 states, which is not the case under current law, then a marine LNG system would be economically competitive with other pipeline systems.

Copies of the report are available from the National Technical Information Service (NTIS), Springfield, Virginia 22161. Ordering information is as follows:

Volume I, Final Report: PB82-260399, $9.00.

Volume II, Appendix: PB82-260407, $18.00.

New Courier Service Introduced

A new worldwide courier service to ships has been inaugurated by World Courier, Inc., to serve the special needs of the maritime industry.

Literature is available detailing the service, which provides for the delivery of documents, parts, or equipment from any major city in the world to ships in port or at major sea route points, including Panama, Singapore, Suez, Malta, and Capetown. James R. Berger, World Courier President, said that the desk-to-ship service is particularly critical when electronic parts, sea-safety equipment, clearance documents, or manifests are involved.

The new service, he added, is designed to appeal to a broad range of marine interests such as suppliers, charter brokers, electronic equipment manufacturers, agents, and shipping companies.

Details are available from World Courier, Inc., 19 Rector Street, New York, New York; tel.: (212) 267-1770.

(Reprinted from the September 1, 1982, issue of Maritime Reporter and Engineering News)

Ship-to-Shore Satellite Data Link Successfully Demonstrated

Research co-sponsored by the Maritime Administration and the Council of American-flag Steamship Operators (CASO) has led to a major breakthrough in the medium-to-high-speed transmission of digital data to and from ships using commercial satellite voice channels and comercially available hardware and software.

The key feature in the experiment, successfully demonstrated in August, was an unusual technique adapted from microwave radio technology by Maritel Technology, Inc., under subcontract to Arinc Research Corp. of Annapolis, Maryland. It uses compatible two-wire and four-wire Racal/Vadic modems, thereby surmounting one of the common problems in connecting the two-wire public-switched network with the four-wire satellite link. The compatible off-the-shelf modems, together with a full duplex feature operating on a split channel, avoid echo and other technical problems normally encountered in such data communications.

The communications software used is Digital Equipment Corp.'s Decnet-Rt, version 1.1, outfitted with a high-level data link control called DDCMP. It provides end-to-end assurance, accounting control, password security, limited recovery, and diagnostic capability as well as some performance-monitoring features.

In the August demonstration, data were transmitted at 1,200 bits per second from a simulated shipboard minicomputer to a shoreside minicomputer using the INMARSAT MARECS-A satellite and dial telephone lines.

Plans are now being made to test the system in actual marine operations.

MMA CAMS Announces Courses for 1983

The Maine Maritime Academy Center for Advanced Maritime Studies has announced the following courses for 1983:

Petroleum Tanker Safety Course, commencing the weeks of March 7, May 16, August 1, and October 10;

Inert Gas Systems/Crude Oil Washing, commencing the weeks of March 14, May 23, August 8, and October 17;

Chemical Tanker Safety Course, commencing the week of August 15; and

Ship's Medicine Course, January 10 - 14, March 21 - 25, May 9 - 13, July 25 - 29, September 12 - 16, and November 14 - 18.

For further details and registration information, contact Mrs. Doris Richardson, CAMS Registrar, Maine Maritime Academy, Castine, Maine 04421; tel.: (207) 326-4311, ext. 210 or 211. ‡

Training Facilities
with Coast Guard-approved Radar Observer Courses

On November 15, 1982, the final rule regarding "Radar Observer Endorsement—Demonstration of Skills," Parts 10 and 157 of Title 46 of the Code of Federal Regulations, went into effect. Deck officers will henceforth be required to demonstrate important skills, such as radar operation and interpretation, rather than simply prove their knowledge in a written test.

Each applicant for a radar observer endorsement or for renewal of an endorsement must complete an approved course for the endorsement desired and receive the appropriate certificate of training from a radar training facility. The only exceptions to this rule are persons currently possessing radar observer endorsements who reside in remote locations. They may renew their endorsements through a written examination administered by the Regional Examination Center.

There are presently 15 training facilities with Coast Guard-approved radar observer courses. The Coast Guard recommends that individuals interested in attending a course at one of these facilities contact the facility for information on course availability and duration and to ensure that the program offered fulfills the requirements for the Radar Observer endorsement desired. A list of approved schools and specific courses can be obtained by writing Commandant (G-MVP-3/14), U.S. Coast Guard, Washington, DC 20593 or calling (202) 426-2240. At present, the following schools are on the list:

Seaman's Church Institute—Merchant Marine School
Radar School
15 State Street
New York, NY 10004
(212) 269-2710

State University of New York
Maritime College
Ft. Schuyler, Bronx, NY 10465
(212) 892-3000

U.S. Merchant Marine Academy
Kings Point, NY 11024
(516) 482-8200

M.M.&P. Maritime Advancement Training, Education, and Safety Program
(Radar School)
2228 Elliott Avenue
Seattle, WA 98121
(206) 628-0419

Delgado Community College Radar School
6th Floor, Unit 1, Section A
4400 Dauphine Street
New Orleans, LA 70146
(504) 568-6246

MEBA D#2-AMO Great Lakes Radar School
933-35 Summit Street
Toledo, OH 43604
(419) 255-3940

Great Lakes Maritime Academy
Northwestern Michigan College
Traverse City, MI 49684
(616) 946-5650

Texas Maritime Academy
Galveston, TX 77550
(713) 766-3265

U.S. Army Transportation School
Ft. Eustis, VA 23604
(for Government personnel only;
no telephone number available)

California Maritime Academy
P.O. Box 1392
Vallejo, CA 94590
(707) 644-5601

California Maritime Academy Radar School
Pier 1, Bldg. 317
Ft. Mason, San Francisco, CA 94111
(707) 644-5601

Maine Maritime Academy
Castine, ME 04421
(207) 326-4311

Maritime Institute of Technology and
Graduate Studies
5700 Hammonds Ferry Road
Linthicum Heights, MD 21090
(301) 859-5700

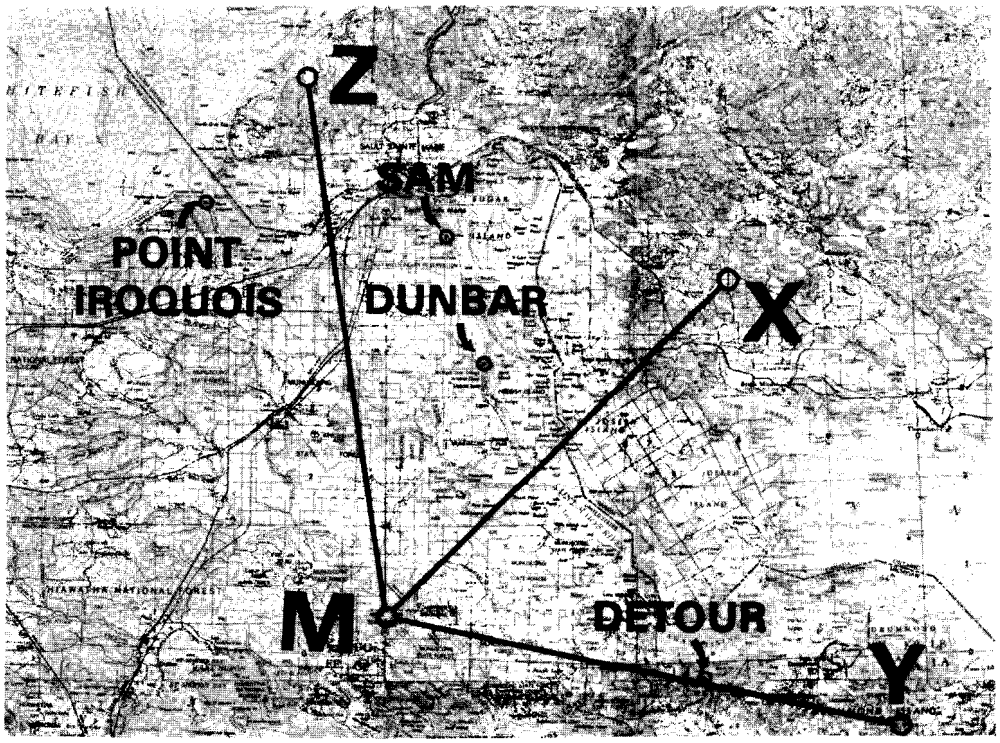
Marine Safety International
Marine Air Terminal
LaGuardia Airport
New York, NY 11371
(212) 565-4125

Massachusetts Maritime Academy
Buzzards Bay, MA 02532
(617) 759-5761

St. Marys River "Mini-Chain" Project is Wrapped Up

In 1976, an experimental "mini-Loran-C chain" was installed to cover the Saint Marys River in Upper Michigan. This location was selected as a test bed because of considerable local demand for an aid in transiting the particularly narrow channels there under all weather conditions. The goal of the mini-chain project was to demonstrate the value of precision Loran-C for commercial ships transiting the river.

The mini-chain project has been summarized in a final report just released by the Coast Guard's Office of Research and Development. The report reviews the highlights of the 5-year effort to provide all-weather navigation for the region between Whitefish Bay in Lake Superior and DeTour Passage in Lake Huron. The development of precision guidance equipment and Loran-C survey techniques is described.



Monitor sites within the St. Marys River mini-chain are shown on this map as circles with dots (the clear circles are the mini-chain transmitters).

The results indicate that if relatively infrequent error corrections are made, position information accurate to within 20 meters can be obtained. No special communications link is needed. The study clearly has demonstrated that the mini-chain concept is indeed effective for passage through areas requiring precise navigation.

Copies of the report, "St. Marys River Loran-C Mini-Chain," can be obtained from the National Technical Information Service (NTIS), Springfield, Virginia 22161, by specifying the following information: Report No. CG-D-11-82, Accession No. PB82 255-183.

The following items of general interest were published in the FEDERAL REGISTER between September 23, 1982, and October 18, 1982:

Final rules: CGD 08-82-10 Safety Zone, Calcasieu Channel, Louisiana, September 23, 1982. CGD 03-82-27 Special Local Regulation, Head of the Connecticut River Regatta in Middletown, Connecticut, October 7, 1982. CGD 82-013 Drawbridge Operation Regulations; West Bay, Osterville, Massachusetts, October 7, 1982. CGD 82-024 Drawbridge Operation Regulations; Lagoon Pond, Martha's Vineyard, Massachusetts, October 7, 1982. CGD 82-091 Special Anchorage Areas, October 14, 1982. CGD 82-034 Joint U.S. Coast Guard and National Transportation Safety Board Regulations for Marine Casualty Investigation, October 14, 1982.

Interim final rule: CGD 03-80-03(A) Anchorage Grounds, Delaware Bay, September 27, 1982.

Notices of proposed rulemaking (NPRMs): CGD 07-82-02 Special Anchorage Area, Biscayne Bay, Florida, September 27, 1982. CGD 80-024 Lifesaving Equipment for the Great Lakes, October 4, 1982. CGD 10-82-09 Drawbridge Operation Regulations; South Fork of Willapa River, Washington, October 7, 1982. CGD 08-82-018 Mantua Creek, New Jersey, October 7, 1982.

Notices: CGD 82-093 U.S. Coast Guard Academy Advisory Committee, Notice of Meeting, October 4, 1982. CGD 82-094 Towing Safety Advisory Committee, Notice of Meeting, October 4, 1982. CGD 82-095 Houston/Galveston Navigation Safety Advisory Committee, Notice of Meeting, October 7, 1982. CGD 82-097 National Boating Safety Advisory Council, Notice of Meeting, October 14, 1982. CGD 82-071 Port Access Route Study, Notice of Study Results, October 14, 1982. CGD 82-098 Committee on Maritime Hazardous Materials, Notice of Meeting, October 18, 1982.

Questions concerning regulatory dockets should be directed to Commandant (G-CMC), U.S. Coast Guard, Washington, DC 20593; tel.: (202) 426-1477.

* * *

Required Tests and Inspections for Thermal Fluid Heaters (CGD 80-064)

On October 18, 1982, the Coast Guard published a proposal to modify the rules regarding the required inspections of fired thermal fluid heaters. This proposal would bring the inspections into line with this type of heater's construction and operation. Fired thermal fluid heaters are presently inspected as if they were boilers. This proposal would define fired thermal fluid heaters as a new and separate machinery category. While the construction of boilers and the heaters is similar, their operation is not. CGD 80-064 would minimize hydrostatic and mechanical material tests and require operational safety and control tests. The revised standards should result in a savings of time and money for industry and improve the quality of inspections.

For further information, contact CDR David Strasser, U.S. Coast Guard (G-MVI), Washington, DC 20593; tel.: (202) 426-2190.

General Bridge Permits (CGD 81-057)

The Coast Guard has proposed that a new program for the issuance of General Bridge Permits be established. Permits for the construction, reconstruction, or modification of bridges are now issued on an individual basis after a detailed review of the bridge's impact on navigation and the environment. The proposed new rules would allow bridges having common characteristics to be evaluated as a group. Authorization to proceed with construction under the General Bridge Permit would be granted if a bridge met the criteria of a General Bridge Permit. This would in many instances eliminate significant delay, thereby reducing costs for the public and the government. A notice of the proposal was published on September 20, 1982.

For further information, contact Jerome D. Schwartz, U.S. Coast Guard (G-NBR), Washington, DC 20593; tel. (202) 755-7620. Comments should be mailed to Commandant (G-CMC), U.S. Coast Guard, Washington, DC 20593.

Electrical and Fuel System Standards (CGD 81-092)

The Coast Guard has proposed that miscellaneous sections of the Electrical and Fuel Sys-

tems Standards found in Subparts I and J of Part 187 of Title 46 of the Code of Federal Regulations be amended. The sections to be amended, which apply to boats having gasoline-powered engines for propulsion or the generation of electricity, are detailed in a notice published in the FEDERAL REGISTER on September 20, 1982. The proposal would make the regulations clearer, easier to comply with, and more cost-beneficial. Unnecessary provisions would be eliminated.

For further information, contact Alston Colihan, U.S. Coast Guard (B-BBS), Washington, DC; tel.: (202) 426-4027.

Visual Distress Signal Equipment Requirements (CGD 82-073)

In a notice published in the FEDERAL REGISTER on September 22, 1982, the Coast Guard proposed that the regulations governing the carriage of visual disgress signals be rewritten to define more clearly where (on what bodies of water) the signals are required. There appears to be some confusion surrounding this question.

For further information, contact William Sobeck, U.S. Coast Guard (G-BBS), Washington, DC 20593; tel.: (202) 426-1080.

Documentation of Vessels (CGD 82-085)

The Coast Guard published a final rule on documentation of vessels on June 24, 1982. In the rule, it identified a potential problem area: the question of how to determine whether or not a vessel had been built in the United States. On October 14, 1982, the Coast Guard published an advance notice of proposed rulemaking (ANPRM) explaining this problem and asking for comments from the public. The Coast Guard is interested in suggestions and comments on the following:

- Is there a need for clarifying amendments to the recently published Part 67.09-3 of Title 46 of the Code of Federal Regulations? If so, what form should the amendments take?

- Is the "fifty (50) percent of cost" rule contained in 46 CFR 67.09-3(c) a valid basis for evaluating whether a vessel should be considered "built in the United States"?

- Should definitions of the terms "components" and "procured" be added to the regulations? If so, what are suggested definitions?

- Are there any industry standards which the Coast Guard should adopt or use to help determine whether a vessel should be considered "built in the United States"?

- What evidence should Coast Guard documentation officers accept when deciding whether something was "procured in the United States"?

Comments or questions should be directed to Phyllis D. Carnilla or LT Robert Meeks, U.S. Coast Guard (G-MVD-1), Washington, DC 20593; tel.: (202) 426-1492.

Optional Table Amended

On October 2, 1982, the Department of Transportation's Research and Special Programs Administration published a final rule updating the Optional Hazardous Materials Table (Optional Table) which appears in Part 172.102 of Title 49 of the Code of Federal Regulations. The purpose of the Optional Table is to enable shippers to be in compliance with both Department of Transportation and International Maritime Organization regulations when describing, classifying, labeling, and stowing hazardous materials on a vessel. The final rule contains changes made in IMO's International Maritime Dangerous Goods Code.

For further information on this final rule, contact E. A. Altemos, Office of Hazardous Materials Regulation, U.S. Department of Transportation, 400 Seventh Street SW, Washington, DC 20590; tel.: (202) 426-0656.

Actions of the Marine Safety Council

The Council approved the following work plans at its October meeting:

CGD 78-035 MARPOL 73/78 Waste Reception Facilities

This regulatory project is directed at U.S. implementation of requirements set forth in the International Convention for the Prevention of Pollution from Ships, 1973 and the Protocol of 1978 (known collectively as MARPOL 73/78). The United States will meet

these requirements, which are aimed at reducing open ocean discharge of pollutants, by ensuring that shoreside facilities are provided for disposal of pollutants retained aboard seagoing vessels. The regulations, which are mandated by the Act to Prevent Pollution from Ships, 1980, will cover the criteria the facilities will have to meet and the administrative procedures for issuing a Certificate of Adequacy.

MARPOL has been ratified and will go into effect on October 1, 1983. The U.S. must implement its provisions before October 1, 1984.

An ANPRM is scheduled for January 1983.

CGD 77-069 Construction and Equipment for Existing Self-Propelled Vessels Carrying Bulk Liquefied Gases

Self-propelled vessels authorized to carry bulk liquefied gases in U.S. waters constructed before October 1976 were designed and built in accordance with the applicable U.S. Coast Guard standards in effect at the time of their construction. IMO, the International Maritime Organization, designates such vessels "existing ships." The IMO "Code for Existing Ships Carrying Liquefied Gases in Bulk," an international standard developed with U.S. cooperation, establishes baseline criteria for these vessels and includes requirements which, in certain areas, exceed the current U.S. standards. Adoption of the international requirements would do the following:

- upgrade U.S. regulations in certain areas to achieve consistency with the baseline international criteria,
- increase the international mobility of U.S.-flag vessels because they would be able to obtain IMO Certificates of Fitness, and
- reduce the Coast Guard work load, since, if it accepts the IMO certificate, the Coast Guard would not have to perform as many individual plan reviews.

This proposal would directly affect 16 U.S. vessels, 13 of which are already largely in compliance, and 150 foreign vessels. The U.S. is not alone in planning to impose these requirements. Nine foreign countries have adopted the IMO requirements, and any vessels trading in these countries must comply whether or not the U.S. adopts the standards.

An NPRM is scheduled for this month .

CGD 82-092 Nautical Schools: Implementing the Maritime Education and Training Act, 1980

The Maritime Education and Training Act, 1980 (META 1980), which became effective October 1, 1981, consolidated the authority of the Coast Guard to issue regulations governing vessels operated by public and private nautical schools. (Such authority was previously spread among various statutes.) The Act also brought under Coast Guard inspection jurisdiction some vessels which were not previously inspected. The impact of CGD 82-092 is limited to about 15 vessels, only 1 of which would be newly inspected. No controversy is expected. For the most part, inspection requirements would be unchanged.

An NPRM is scheduled for March 1983.

Please enclose your mailing label when sending in a change of address. Allow eight weeks for change to take effect.

The Council also voted to approve a "continuing docket":

Subchapter "O" Chemical Lists and Compatibility Chart

The intent of this proposal is to allow the Office of Merchant Marine Safety (G-M) to issue changes to the chemical lists and compatibility chart in Subchapter O of Title 46 of the Code of Federal Regulations. Approximately 40 to 60 new chemicals are added to the lists each year. The proposal would grant G-M a "continuing docket," or blanket work plan exemption, so that notices could be processed without referral to the Marine Safety Council. This procedure would relieve the project managers from the burden of preparing repetitive and lengthy work plans.

Most changes to the chart are not controversial. The decisions about compatibility are made on the basis of compatibility testing, and there are no policy issues. In order to safeguard the system, though, G-M would first issue all proposed changes as NPRMs, so that any adverse public reaction could be brought to the attention of the Council and the Commandant by G-M or the Executive Secretary. ⚓

Emergency Care for Hypothermia

by Richard C. Hiscock

Hypothermia—lower than normal core body temperature--is a life-threatening medical emergency. Anyone who has been immersed in cold water, even for a brief time, and anyone rescued from a life raft should be considered a probable hypothermia victim.

The first consideration in dealing with a hypothermia victim is to rescue the victim as gently as possible. Rough handling of victims of hypothermia can aggravate their condition. It may be necessary to put a rescuer into the water--wearing a survival suit and tending line, please!—to assist the victim.

Once the victim is out of the water, treatment will depend on both the condition of the survivor and the facilities available. Generally speaking, survivors who are rational and capable of recounting their experience, although shivering dramatically, merely require the removal of all wet clothes, replacement with dry clothes or blankets, and rest in a warm environment. If a victim can manage his airway (that is, if he is conscious and capable of keeping his throat clear), he may be given warm, sweet liquids, preferably not coffee or tea and definitely **not alcohol.** These survivors will generally rewarm themselves.

In more serious cases, where the victim is semiconscious, unconscious, or apparently dead, you should immediately contact the nearest Coast Guard unit to arrange for prompt medical evacuation. While awaiting further medical instructions and evacuation, you should administer the following first-aid care:

1. After removing the victim from the cold and gently transferring him to a warm environment (being sure to avoid rough handling, as this can cause further harm), check **A**irway, **B**reathing, and **C**irculation. If, after **careful** examination of the victim, you determine that there is no breathing and no heartbeat, immediately begin CPR (cardiopulmonary resuscitation).

2. Remove wet clothes, keeping movement of victim's body to a minimum; cut the clothes away with scissors or knife, if necessary. Do not massage victim.

3. Lay the unconscious or semiconscious victim in a level, face-up position. If vomiting occurs, turn the victim's head to one side. Be sure to check the victim's breathing and heartbeat frequently. You must be prepared to begin CPR if breathing and heartbeat stop.

4. Insulate the victim from further heat loss by wrapping him in blankets. Do not attempt to aggressively rewarm the unconscious victim. Severe hypothermia is a true medical emergency, but rewarming a victim can lead to complications. Definitive rewarming should be accomplished in a hospital. Your main goal in providing first aid is to prevent the victim from getting colder.

5. If there will be a long delay in getting the victim to a hospital, gentle rewarming techniques may be used:

   - apply heating pads or hot water bottles under the blankets to the victim's head, neck, chest, and groin. Keep the victim wrapped in blankets.

   - apply your own body warmth by direct body-to-body contact with the victim. Blankets should be wrapped around you and the victim to conserve the heat you are supplying.

Richard C. Hiscock is a consultant on fishing vessel safety and emergency rescue/survival equipment. This article is reprinted from the August 1982 issue of his Safety Notes for Fishermen.

6. Prepare the victim for evacuation: wrap securely in several blankets, cover with two large plastic bags (one pulled up over the legs and one pulled down from the top with a hole for the head—tape securely at the waist), cover the head with blanket or heavy wool cap.

To Sum Up

RESUSCITATE - If victim is not breathing, begin mouth-to-mouth ventilations. If victim has no pulse, begin cardiac compression.

INSULATE - To prevent further heat loss

EVACUATE - To medical facility as soon as possible

REMEMBER - "No one is dead until he is warm and dead." Victims have successfully recovered after reaching core temperatures as low as $64^{\circ}F$.

Near Drowning

If, in addition to being cold, the victim has had his face under water, you should immediately begin CPR. Don't stop. Insulate to prevent further cooling. Do not rewarm. Transport ASAP. Don't give up! ⚓

"Unsafe act:

(ŭn' sāf' ăkt) n. 1. A departure from an accepted, normal, or correct procedure or practice which has in the past actually produced injury or property damage or has the potential for producing such loss in the future. 2. An unnecessary exposure to a hazard. 3. Conduct reducing the degree of safety normally present."

Not every unsafe act produces an injury or loss, but, by definition, all unsafe acts have the potential for producing future accident injuries or losses. An unsafe act may be an act of commission (doing something which is unsafe) or an act of omission (failing to do something that should have been done).

By cracking down on acts like the following, you can make this month Unsafe Act Crackdown Month:

- jumping over the ship's rail to get ashore. (Use the gangway or accommodation ladder.)
- stepping over the ship's mooring wires. (Go around and up the catwalk.)
- working aloft or over the ship's rail without a safety harness.
- going on deck without the proper safety apparel.

These are just a few unsafe acts that could cause injury. Now let us look at another unsafe act. This act is never intentional (at least we hope it isn't) but rather the result of a mistake or lack of knowledge. We are talking about the occasional opening of a wrong cargo valve on a tank and the failure to report that act to a superior.

The original error—the opening of the wrong valve—is usually an honest and human one and, if reported at once, can usually be corrected with minimal cost. But the second one—the attempt to cover up the mistake by not reporting it—always leads to much more serious consequences. A major contamination follows, and high-cost penalties are incurred.

So, when you're handling cargo, stay alert and be sure you're working the right valve. But if you make that simple, honest mistake and move the wrong one, tell the senior cargo handler and shut the operation down at once! Chances are that the incident can be kept a very minor one and corrected at a little cost.

Don't make the second mistake—the big one—of trying to cover up the small one. In cargo handling, two wrongs can never make one right.

(Reprinted from the April 1982 issue of Imperial Oil Limited's Marine Division Safety Bulletin) ⚓

Sinbad of the Coast Guard

by Photojournalist Paul Powers, Headquarters Photo Team

He was a runty, barrel-chested little mongrel with plenty of bad habits as well as some endearing ones. His name was Sinbad, and he was the mascot of the Coast Guard Cutter CAMPBELL.

It's been 30 years since Sinbad ambled around the decks of the CAMPBELL. The much-loved little fellow passed away December 31, 1952, at the age of 15. However, stories about the sea exploits and the shoreside antics of the lively dog are still told and retold around the Coast Guard. The escapades of this four-footed sailor are as colorful as those of the most wayward old salt.

At sea, Sinbad could hold his own on a pitching deck, scurry up and down the ladders, and swim with the best. While on shore leave or liberty, he relaxed from the rigors of the ocean's strenuous life by drinking and chasing lady dogs.

Sinbad's shoreside shenanigans are legendary. When the CAMPBELL tied up, he would dash off the ship ahead of the crew and make a beeline for one of his favorite watering holes.

Braving the glaring bar lights and blaring juke boxes, Sinbad would swagger through the rowdy crowds that frequent seaport town bars and head for an empty stool.

He was known by bartenders in ports around the world. They knew what he drank, and they also knew that the CAMPBELL's crew would take care of his tab.

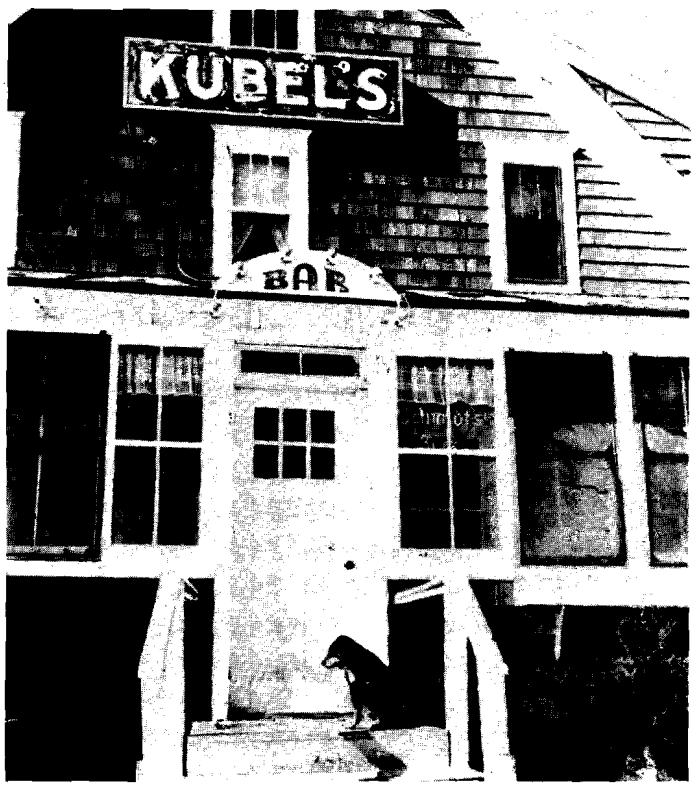
His favorite tipple was a beer followed by a whiskey chaser.

Sinbad would greedily lap it up, woof a farewell, and repeat the ritual in the next waterfront tavern. When he had had his fill, Sinbad would either prowl the alleys in pursuit of more lusty adventures or stagger back to the ship to sleep off his drinking spree.

Next to drinking, Sinbad loved other dogs, as long as they were female. He had a string of admirers in every port and would visit his lady friends after satisfying his gigantic thirst. His romantic exploits were as outrageous as his legendary drinking bouts.

Generally the ship's smallest crewmember managed to make it back to the CAMPBELL before it was time to pull out. There was, however, one notable exception. It was in Iceland during World War II. Sinbad had just finished a particularly heavy drinking bout, and, instead of going back to the ship, he decided to sleep it off behind one of the taverns.

Sinbad awoke with a start to the shrill of the CAMPBELL's siren. The ship was about to depart on emergency orders, and Sinbad was going to be left behind. Struggling to his feet,



Sinbad relaxes on the front steps of his favorite bar in Barnegat Light, New Jersey.

he dashed madly to the dock, just in time to see his ship steaming out of the harbor.

Sailors are often a superstitious lot, and the CAMPBELL's crew was no exception. The crewmembers felt that as long as the dog was on board, the ship was safe. They pleaded with the captain to turn around and pick up their mascot. However, the captain said he couldn't and the dog would have to stay behind.

Sinbad knew he was going to be stranded in Iceland and decided to take matters into his own hands (paws?). The little dog plunged into the icy water and began swimming toward his shipboard home. As the crewmen cheered him on, Sinbad plowed his way through freezing water and heavy swells.

The CAMPBELL was now steaming away at seven knots, and there was no chance of the dog's catching up. The captain, realizing that the dog's life was in danger, had a change of heart. He turned the ship around and picked up Sinbad.

Sinbad's career on the CAMPBELL began one winter night in 1937 when the ship was docked in New York. He was smuggled on board and adopted by the crew. By the time he retired, he had traveled over half a million miles and had countless adventures.

Sinbad's main job was keeping up morale. He loved everyone on the CAMPBELL, and in all the years he was on board, he never attached himself to any one person. He was at his best in a crowd and cheerfully played with any sailor who was interested.

Sinbad, proudly wearing his World War II campaign ribbons on his collar, plays tourist while visiting Japan during the CAMPBELL's goodwill visit in the late 1940s.

Sinbad became a favorite of the press after the CAMPBELL's sinking of a German submarine in World War II.

During his long career, Sinbad was on board the Coast Guard cutter during good times and bad. Sinbad went to war on the CAMPBELL and had his most dangerous adventures during World War II. It was also during the war that Sinbad was most helpful to the crew.

The cutter was assigned to protect convoys as they crossed the North Atlantic with men and supplies for the European war. German submarines preyed upon the ships, and the CAMPBELL's job was to protect them.

One Washington's birthday, the CAMPBELL was making a return trip from Europe. The seas were rough, and a cold northeaster winds drove against the ships as the sun set on the convoy. The convoy was midway between the two continents, where the possibility of submarine attack was the greatest.

The men on board the CAMPBELL were tense as they waited for the Germans to make an appearance. The Germans didn't disappoint them. An explosion and flash erupted from the rear of the convoy. A freighter had been hit and the CAMPBELL wheeled around to save the crewmen of the disabled ship.

Death often stalked a rescue ship. The boats would wait near a sinking ship and attack the rescue vessel as it lay dead in the water plucking survivors from the sea. The CAMPBELL's crew knew this as it went about its mission of mercy.

Sinbad sensed the tension in the air and knew that, at a time like this, the best thing he could do was stay out of the way. Crouched in his favorite spot under one of the ship's ladders he patiently watched the CAMPBELL's crew rescue the men from the sinking freighter.

Halfway through the rescue operation

another explosion echoed over the scene. A German sub had fired a torpedo at the CAMPBELL; fortunately, it exploded before reaching the cutter.

With the stricken mariners on board, the cutter went into action. The CAMPBELL attacked six submarines that night, and oil slicks were spotted from all six. The cutter also rammed one sub, sending it to the bottom. The CAMPBELL was credited with one sure sinking, but the ramming incident put a huge hole in the CAMPBELL's bow.

The danger of sinking was so great that half the crew was shifted to another vessel. Sinbad stayed on board. The captain and crew felt that as long as the dog was on the CAMPBELL, it would stay afloat.

The crippled cutter limped its way into port, where reporters who had learned of the crew's faith in the little dog waited to capture the story of his bravery during the submarine attacks.

Throughout that long night, Sinbad had growled and barked defiantly at the submarines each time the CAMPBELL had launched its depth charges. It was a life-and-death situation, and Sinbad wanted to do what he could to help his crew.

It was on the mess deck that Sinbad helped out the most. He couldn't bear to see depressed sailors, and the downhearted crew from the sunken freighter was in desperate need of cheering up.

Sinbad swaggered up to the men and began his antics. Soon, frowns turned into smiles as the sailors began playing with the little dog.

Sinbad's reputation began to spread after the sinking of the submarine. He became famous in ports on both sides of the Atlantic. In Londonderry, Ireland, whenever the CAMPBELL pulled in, the papers announced that Sinbad was back in town. His adventures were not limited to the war. The dog was known from Casablanca, Morocco, to Tokyo, Japan.

The CAMPBELL became the envy of the fleet. A crew from another ship attempted to kidnap the little mutt, but, fortunately, Sinbad's loyal crew recovered its mascot moments before the cutter had to leave the harbor.

It was on board the CAMPBELL that Sinbad was most at home. He was completely part of the crew. He had a medical record, personnel file, and a uniform, and he also held a rank.

He even worked his way up to chief petty officer. However, Sinbad was busted the day after his promotion. During the ceremony, he had had enough of the press and stalked off the ship before the photographers had finished taking pictures. After all the press people had left, he returned. The captain didn't like the idea of the dog going "over the hill," so he busted the miscreant back to dog first class.

Sinbad spent a total of 11 years on board the cutter CAMPBELL. Eleven years is a long time at sea, even for two-legged sailors. So, on September 21, 1948, the CAMPBELL's skipper read Sinbad's retirement orders at muster. The faithful mascot was retired to Barnegat Lifeboat Station in New Jersey. His final years were spent on land, a very peaceful change from his rigorous life at sea.

The exploits of this small Coast Guardsman were not only covered by the press, they were also chronicled in a book entitled *Sinbad of the Coast Guard* by George Foley, Jr., published by Dodd, Mead & Company in 1946. The book was later made into a movie.

A true friend of the Coast Guard and mankind, Sinbad and his exploits are forever etched in the memories of those who served with him. ⚓

Sinbad is pawprinted for his service record. He spent a total of 15 years in the U.S. Coast Guard.

"Hello. This is a computer talking to you..."

by LT Ed McKenzie
Assistant Chief
Command, Control, Communications, and Intelligence Staff
Eleventh Coast Guard District

The following article is not intended to reflect current practice. The technology for the type of system described by the author exists, but the Coast Guard has not implemented such a system for merchant vessel personnel.

The scene is the Seaman's Documentation and Licensing section of the regional Marine Safety Office. The documentation clerk at the service counter thinks to himself how different things could be if applicants for documents and licenses were filling out their own forms, using a computer. He imagines a conversation between the computer and an applicant as it would appear on the video display terminal:

Computer: Hello. This is a computer talking to you. I am going to assist you in completing the application you need to get your seaman's document. You will notice that there is a button on the left of the keyboard labeled "YES" and one on the right labeled "NO." Do you see them? If you do, press the button labeled "YES."

Applicant: YES.

Computer: Thanks. Now for the time being, I will be able to continue to talk to you only if you talk to me by pressing either the YES button or the NO button. Do you understand? Press YES or NO button.

Applicant: YES.

Computer: Good. There is another button you can press anytime that you do not understand what it is I am saying or you don't know what to do next. It is the "?" key on the keyboard. It is labeled in red. Do you see it? Press the YES or NO button.

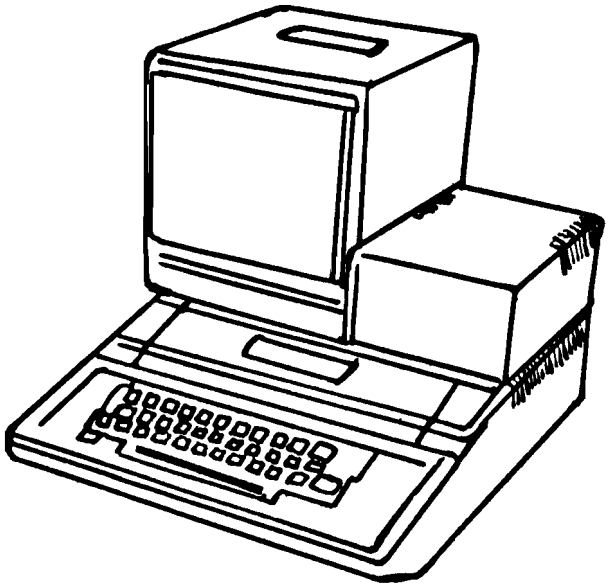
Applicant: YES.

The computer doing the interviewing in this scenario is a microcomputer. Under such a system, the documentation clerk would briefly interview each applicant to determine what application form he needed and then load it into the printer, which would be located at the clerk's position. After this, the applicant would be directed to the computer console to provide the information needed for his application.

The computer would store this information in its internal memory. When the applicant indicated which form he was filling out, the

correct interview program would be automatically called up from a floppy magnetic disc. The computer would direct the applicant, at the end of the session, to press the YES button. This would cause the APPLE to commence printing the correct information on the application form already loaded into the printer. By the time the applicant had returned to the clerk's position, the form would be printed. The APPLE screen would then return to the "HELLO" message and be ready to conduct another interview. The documentation clerk, whose involvement up to this point would have been minimal, would take care of the rest of the procedure (creating the paper file, laminating the document, etc.).

One of the nice things about a computer is its infinite patience. A computer can and will answer the same question day after day. Few documentation clerks, working with applicants for eight hours a day, week after week, can be that consistent. Computers don't take coffee breaks, go out to lunch, take vacations, or call in sick, either.



Computer: We will start a new application for you. The following is a list of the items that are required before a Merchant Mariner's Document can be issued:

Three (3) flat-finish wallet-size pictures with the face (chin to forehead) no smaller than 2 x 1½ inches

Original Social Security card

Do you have these things with you now? Press a button.

Applicant: ?

Computer: I am trying to determine if you have the proper things for a Merchant Mariner's Document to be issued.

Pictures:

We need three pictures, one for our files, one for your temporary certificate, and one for your document.

The face needs to be large enough to identify you so no one else can use your document.

The finish needs to be flat so that the edge of the picture can be written on and the Coast Guard seal applied to it.

Social Security card:

Your original Social Security card (or a duplicate issued by the Social Security Administration) is needed in order to make sure that the Social Security Number is the proper one and that no mistake has been made.

I will ask you in a moment if you have the things I talked about. But first, do you understand all that I have said? Press YES or NO.

Applicant: YES.

Computer: Fine. Do you have all the things that I have explained to you?

Applicant: NO.

Computer: Do you have the three flat-finish wallet photos of yourself, as described?

Applicant: NO.

Computer: Do you have the Social Security card, as described?

Applicant: YES.

Computer: OK. Before we can proceed any further, you will have to have the proper photographs. You will need to go get them and bring them back here. If you need to have them taken, the documentation clerk will tell you where that can be done in the local area. Before you leave, please press the reset button. It is located in the upper right-hand corner of the keyboard. It will allow me to help the next applicant with his application. Go now and see the documentation clerk about your pictures. Please press reset.

A computer could be programmed to respond with explanations at any point in this process. If the applicant kept pressing the "?" button, he would get more and more detailed explanations or an explanation from a different point of view.

After the preliminary information had been obtained through YES/NO responses, the computer could teach the applicant how to type in his answers.

Computer: OK. You are being most helpful. Before we can go much further, we'll have to talk about the keyboard in front of you. Do you know how to type? Press yes or no.

Applicant: NO.

Computer: That's no problem. We will take our time going through the information I need in order to complete the application form. You will need to type some things, like your name, address, and other information. Do you understand? Press a button.

Applicant: ?

Computer: So far, I've been able to determine what I needed to know by having you answer YES or NO. In order to complete the application, I need more information, and I need you to give it to me. You will have lots of time to type the information, and it will be easy to correct if you should make a mistake. Do you understand? Press YES or NO.

Applicant: YES.

Computer: Good. Take as much time as you like—speed is not important. What is important is that the information is correct to the best of your knowledge. What I would like for you to do is read each of the questions I will ask carefully before typing your answer. Do you understand? Press YES or NO.

Applicant: YES.

Computer: OK. You are doing very well. After you type in each answer, please read it over very carefully to make sure that it is correctly typed. When you are satisfied that it is correct, press the key marked "RETURN." Pressing the key marked "RETURN" will send the information you have typed on the keyboard into my internal memory. When we are finished, I will tell the printer to print the correct form with the information you have given me on it. Do you understand so far? Press YES or NO.

Applicant: YES.

Computer: If you should make a mistake when you are typing, we can fix it easily. There are two keys with horizontal arrows on them near the RETURN key. Pressing the key with the arrow pointing to the left on it will cause the blinking cursor to backspace over the letters you have typed. As it backspaces, it will remove the letters it goes over. Just back up

the cursor until the mistake is removed and type in the correct entry. Don't worry, all the entries will be very short. Do you understand?

Applicant: ?

Computer: If you should find a mistake, it will need to be corrected before the information goes into my memory. If it is not corrected, your application will not be valid. When you press the left-pointing arrow once, the blinking cursor will back up one space and remove the letter to its left. Press it again to back up additional spaces. When all the errors are eliminated, complete the entry with correct letters. Do you understand?

Applicant: YES.

Computer: Fine. After you have corrected the mistake, look over the new information you have typed to make sure it is correct. If it isn't, just backspace again to fix it. If it is correct, then press "RETURN," and it will go into my memory and we will move on to the next item. Do you understand? Press YES or NO.

Applicant: YES.

This method of streamlining the application process would involve an admittedly low level of automation. The documentation clerk, after all, would still have to load the proper form into the printer. It would, however, also be low-cost. All the hardware, software, and furniture could be had for less than $10,000. Economies of scale would prevail where a common printer could be used for multiple applications. Except for maintenance of the hardware, this would be a one-time cost.

Other features could be added to reduce the documentation clerks' work load further. The computer could be loaded with the proper questioning sequence to determine what form the applicant needed. It could then ask the questions which would result in the appropriate answers for that form. The printer would be loaded with blank paper, and the computer would direct the printer to print the correct form and then insert the appropriate information in it. This more elaborate system would probably require several floppy disc drives (or a hard disc) to house the necessary memory. Alternatively, the system used Coast Guard-wide, the Standard Terminal, with its larger memory capability, could be used.

Even this system would still require the documentation clerk to process the application, i.e., create the appropriate paper file and make up the laminated document. As long as fingerprints are necessary, we will probably always need a clerk to make up the document. However, there is no real need for the physical file itself. What is needed, if anything, is a means of looking at the information contained in a file.

This information could be made available in at least two different ways. The easy way would be to have the computer produce a micrographic representation (microfilm, microfiche) of the filled-out form at the end of the interview. The location of this form in the film library could be indexed for future use. Or the computer could file away the information in a data base, extracting the information it needed to fill out the application requested. Information could later be retrieved as necessary.

The data entered by the applicant could be stored and made available each time he returned to upgrade his document. Rather than entering the data all over again, he would simply have to verify that the data on file had not changed.

Computer: OK, Mr. _____, our records show that you applied for a document in June of 1981. In order to speed up the renewal process, I am going to display the information in your file that is needed for this application. As I display it, please indicate if it is still correct or if it has changed. If it is correct, just press the YES button. If it is no longer correct, press the NO button, and we will enter the correct information. Do you understand?

Applicant: YES.

On another level, if the Coast Guard wished to collect various data about each applicant, it could turn to a sophisticated system such as the Standard Terminal. A local data base could be established on all the applicants from the area and maintained in the computer's memory. The computer could produce periodic reports on such matters as how many mistakes were made in answering a particular question or how long it took to answer a specific question. The Coast Guard could use this information to improve the interview program.

The ultimate applicaton of computerized interviewing would be to tie all Regional Examination Center (REC) Standard Terminals into a common, Coast Guard-wide personnel data base. This, which would be similar to the system being instituted for vessels, would eliminate the redundancy of having files on a seaman at every office where he has had action taken on his document. Such a system could be updated daily, during off-hours, completely without operator intervention. The computer terminals could communicate with each other automatically over the telephone.

The system I have sketched above could be used for licenses as well as documents. Although the array of licenses, documents, and endorsements may be intimidating, it can nevertheless be reduced to a step-by-step presentation on a video screen. All that is needed is correct input of the necessary material by the person who benefits most from having his documents filled out properly.

Is this part of the Marine Safety Office of the future? Will the merchant mariner accept the idea of talking to a computer instead of a real person? Can the use of automated application procedures produce sufficient savings to justify the initial cost? Computers are now doing word processing, running robots that make automobiles, and providing precise positioning information to navigate Very Large Crude Carriers. Are automated documentation and licensing next? ⚓

Safety Films from England

England's Merchant Navy Training Board has produced a number of films for its Safety at Sea series. Among the films, which are available to the general public, are:

"The Use of Compressed Air Breathing Apparatus"

Self-contained breathing apparatus is equipment that is easy to use. It is, however, vitally important that anyone who may be called upon to use it understand in simple terms how it works and how to don and wear it. Getting across that information is the purpose of this film.

There are a number of manufacturers of breathing apparatus, and, consequently, there are differences between sets. Instructions for use may vary according to what purpose the set is intended to serve. In the film, a familiar type of compressed air breathing apparatus is used for demonstration purposes. The basic principles of operation and wearing are the same for similar types made by different manufacturers.

Color: 11 minutes

"Enclosed Spaces"

At the start of this film, a crewmember sets out to do a simple job--open a valve to ballast a tank. The valve is jammed, so he enters the tank to find out what is wrong. He goes in without telling anyone, however, and without taking any precautions; he dies, overcome by the lethal atmosphere. This tragedy could have been avoided--if only he had followed the rules.

The film shows what actions a person should take before entering an enclosed space.

Color: 19 minutes

A booklet, "Recommendations on Entering Enclosed Spaces," and a laminated safety

check-list card *(see following article)* prepared by the General Council of British Shipping are available to accompany this film.

"The New Rules"

1972 COLLISION REGULATIONS - MAIN CHANGES

This is a training/information film for serving masters and officers who are already familiar with the 1960 Regulations for the Prevention of Collisions at Sea. The film illustrates some of the more significant changes in the 1972 Regulations, which entered into force on July 15, 1977. The film is of value to serving masters and watchkeepers aboard ship but can also be used to teach the 1972 Regulations to trainees.

Color: 17 minutes

DANGEROUS GOODS AT SEA TRAINING PACKAGE

This package consists of two films on the carriage of packaged dangerous goods at sea together with some background training notes.

Part 1 "Dangerous Goods at Sea"

The carriage of dangerous goods on board ships has increased dramatically in recent years, as the world has become more heavily dependent on chemicals and other hazardous products. Nearly all ships, worldwide, whether ferries, RoRo, container, or conventional cargo carriers, are likely to carry some dangerous cargo at some time. But what are the dangers? How can they be recognized? What precautions can be taken?

These are some of the questions that "Dangerous Goods at Sea" sets out to answer. This training film explains the key principles and procedures underlying the safe carriage of dangerous goods. The foundation of the film is the International Maritime Dangerous Goods (IMDG) Code produced by the International Maritime Organization (IMO). The film demonstrates what the Code means in practice.

"Dangerous Goods at Sea" covers each of the main stages in the safe transport of this kind of cargo and will be of value to both seafarers and associated shore personnel.

Color: 20 minutes

Part 2 "Expecting the Unexpected"

The potential hazards associated with the carriage of packaged dangerous goods are controlled by following the advice and procedures in the IMDG Code and the various national codes which exist. Occasionally, however, the unexpected will occur, and the consequences can be far-reaching: fire, stranding, and possible pollution of the marine environment. "Expecting the Unexpected" shows how good planning and management can minimize the effects of incidents. Whatever the substance involved, the same general principles can be followed. Response is based on a pre-determined plan of action that is activated as soon as the problem has been discovered and the alarm raised.

Throughout the film the value of the IMO Emergency Schedules for Ships Carrying Dangerous Goods and the need for training and "good housekeeping" are emphasized.

Color: 20 minutes

SURVIVAL TRAINING PACKAGE

Survival training has assumed increasing importance in recent years, and two films have been produced on personal survival and good life raft practice.

Part 1 "This is Your Life (Raft)"

This film covers the action to be taken prior to abandonment, shows how to launch a life raft, and explains the raft's construction and contents. It provides sound background information in a logical, easy-to-understand manner and can serve either as an introduction for pre-sea trainees or as a refresher for the experienced seafarer.

Color: 15 minutes

Part 2 "Survival at Sea"

One of six people cast into the cold sea helps the other five pull themselves together, carry out vital initial actions, and settle down to await the rescue they are sure will come.

The basic message of this film is simple:

- Prepare yourself—know your job in an emergency.
- Keep as warm and dry as possible.

- Know your raft and its contents.
- Establish the current survival priorities.
- Follow the basic rules of survival.

Color: 28 minutes.

A Survival Instructors Manual and a set of slides are also available.

OTHER TITLES

The following films are also available through the Board:

"To Hell With Accidents"

This is a film about accidents on board a ship. An unwanted passenger, invisible to the crew, joins for the voyage. Through his eyes, the events leading to accidents are portrayed. As the story unfolds, the results of carelessness, neglect, and the unsafe practices of the ship's personnel are shown. The climax is a fatal accident caused by the folly of the victim, and the evil passenger is seen leaving to seek his next ship. The film draws attention to the need for common sense and good housekeeping in routine shipboard duties. It shows dramatically what can happen if care is not taken.

Color: 23 minutes

"Fire Below"

"Fire Below" is about the total loss of a ship at sea because of fire. The events on board are recalled as a court of inquiry relentlessly examines every circumstance and questions each witness. The court is concerned only with finding out why and how the ship was lost. Existing regulations may be amended or new ones formulated on the basis of the findings. New procedures for fire prevention, fire drills, maintenance of equipment, or training of personnel may be devised—everything will be done to safeguard ships and crews from the hazards of fire at sea.

Color: 26 minutes (video only)

All inquiries concerning the purchase or renting of films should be addressed to

Merchant Navy Training Board (Films)
30/32 St. Mary Axe
London EC3A 8ET
ENGLAND
Tel.: 01-283 2922
Telex: 884008

All titles, unless otherwise noted, are available on either 16mm film or Sony U-Matic Videocassette (PAL). Details on other video systems, foreign-language versions, etc., will be supplied on request. ↕

A Clean Slate for Safe Entry

The General Council of British Shipping has recently published a handy laminated safety check-list card which should be used by shipboard personnel before entering enclosed spaces such as cargo tanks, pumprooms, cofferdams, ballast tanks, etc.

Personnel entering a tank or other enclosed space may encounter unusual and frequently unexpected acute hazards. Certain fundamental precautions and simple procedures can prevent accidents. The hazards and combinations of hazards encountered will differ in their nature and seriousness. The following guidelines for use of the safety card offer practical advice for dealing with enclosed spaces.

Responsibility

Responsibility for safety, both at the time of entry and during the entire operation, rests with the master or designated officer. This responsibility covers conditions of work for shore-based employees as well as for members of the ship's crew. The responsible person must make sure adequate steps have been taken to eliminate or control hazards. He must also

make sure that all personnel understand the nature of the hazards which remain and the precautions which must be taken.

Enclosed Spaces

Enclosed spaces include any tank, cargo space, or compartment in which toxic, inert, asphyxiating, flammable, or other dangerous gases may accumulate or oxygen may be deficient, such as:

- any space containing or having last contained combustible or flammable cargo or gases in bulk,
- any space containing or having last contained cargoes of a poisonous, corrosive, or irritant nature,
- spaces in tankers immediately adjacent to the two types of spaces just described,
- cargo spaces or other spaces that have been closed and/or unventilated for some time,
- storerooms or spaces containing noxious or harmful materials, and
- spaces that have been fumigated.

Hazards

The hazards commonly encountered in an enclosed space are:

- toxic vapors in fatal concentrations. These may result from known material in the space, be gradually released from sludge or scale, or be introduced by leakage from interconnected systems.
- flammable gases with the potential for fire or explosion.
- lack of oxygen. This, which may result in asphyxiation, can be caused by chemicals which absorb or replace oxygen in the atmosphere or by inert gas often used to exclude oxygen to reduce the possibility of explosions. The atmosphere in a space that has remained closed for some time may become deficient in oxygen because of rusting steelwork. Improper or inadequate ventilation while work is in progress within the space may also result in a lack of oxygen.
- electric shock from portable lights, power tools, or associated electrical equipment.
- bodily injury from direct contact with corrosive or irritant substances.

Procedures

The hazards inherent in working in an enclosed space can be avoided or overcome if the following rules are observed each and every time a space is entered.

Rule 1. Establish a system of planning for enclosed space entry and a crew instruction program.

Rule 2. Prepare the space for entry by physically isolating it, cleaning it to remove contaminants, and testing to ensure absence of such contaminants.

Rule 3. Use a check list, backed up if necessary by a permit system. The check list should be given to another crewmember only after the master or responsible officer is personally satisfied with the precautions taken, the personal protective equipment to be used, and the procedures to be followed.

Marine Safety Card

The Marine Safety Card serves as a means of reminding all concerned of recommended procedures. Proper completion of its re-usable check list will ensure that all existing hazards are considered and evaluated and that, where necessary, the correct protective measures are taken. The card has been designed so that it can be used on board all types of ship, from the largest tanker to a small coastal vessel. Instructions and advice shown on the card are not intended in any way to take the place of other rules and recommendations. The card may, however, be used to support these. It may also be used in conjunction with a permit system. In order to be successful, the Marine Safety Card must be supported by senior ship's personnel; the response of other crewmembers will obviously be influenced by this.

The card is available from the General Council of British Shipping at 30/32 St. Mary Axe, London EC3A 8ET, England. ‡

New Reports Available

from Ship Structure Committee

The Ship Structure Committee recently published 11 new technical reports which are available free of charge until copies run out. From that point on, they will be available from the National Technical Information Service (NTIS), Springfield, Virginia 22161. The reports are:

SSC-303 **"Fatigue and Fracture Toughness Characterization of SAW and SMA A537 Class I Ship-Steel Weldments"**

This report assesses various notch toughness tests and criteria to determine their validity at low temperatures when applied to structures with low toughness in the heat-affected zone.

SSC-304 **"SL-7 Extreme Stress Data Collection and Reduction"**

This report tells how bending moment data aboard the SL-7 class were collected and reduced for a total of 56 statistical ship years of operation. It also describes the scratch gauges used to collect the data and gives examples of some of the data obtained.

SSC-305 **"Investigation of Steels for Improved Weldability in Ship Construction—Phase II"**

This report describes the second phase of an overall effort to develop economical high-strength ship-plate steels with improved heat-affected zone toughness for electroslag and submerged arc welding processes. In Phase II, 20 laboratory-melted steels of varying chemical composition were tested and recommendations were made for Phase III.

SSC-306 **"Experimental Program for the Determination of Hull Structural Damping Coefficients"**

This report describes one way of collecting and evaluating structural damping data (either model or full-scale) applicable to ship vibration analysis. It also tells how to relate those data to the design process.

SSC-307 **"Evaluation of Fracture Criteria for Ship Steels and Weldments"**

This report presents a state-of-the-art interpretation of the correlation of fracture toughness in ship steels and weldments to proposed criteria for adequate fracture resistance in service.

SSC-308 **"Criteria for Hull-Machinery Rigidity Compatibility"**

This report suggests a method by which a designer, when considering hull flexure, could address the problem of meeting distortion limits imposed by machinery manufacturers.

SSC-309/ SSC-310 **"A Rational Basis for the Selection of Ice Strengthening Criteria for Ships—Vols. I and II"**

This report contains the results of a survey of various classification societies and government regulations aimed at identifying similarities and differences in requirements. It recommends a procedure for selecting appropriate criteria for strengthening a vessel for operating in ice.

SSC-311 "Evaluation of SL-7 Scratch Gauge Data"

This report assesses the value and application potential of the SL-7 scratch gauge data base and statistical models to predict beyond the range of measured values.

SSC-312 "Investigation of Internal Corrosion and Corrosion-Control Alternatives in Commercial Tankships"

This report is a review and reevaluation of various corrosion-control philosophies. The report includes sensitivity studies of the relative life-cycle costs of available corrosion-control techniques.

SSC-313 "SL-7 Research Program Summary, Conclusions and Recommendations"

This report synopsizes the multi-year cooperative effort by industry, government, and the American Bureau of Shipping to acquire full-scale, model, and analytical data and to evaluate them for the large, high-speed SL-7-class containerships.

For copies of these reports or further information, contact LCDR David B. Anderson, Secretary, Ship Structure Committee, U.S. Coast Guard (G-MTH-4/13), Washington, DC 20593.

The Ship Structure Committee is an interagency advisory committee dedicated to improving the structure of ships. Its member agencies are the United States Coast Guard, the Naval Sea Systems Command, the Military Sealift Command, the Maritime Administration, the Minerals Management Service, and the American Bureau of Shipping.

Annual Index *Volume 39*

A "Burning" Issue: Ocean Incineration 143
A Clean Slate for Safe Entry 338
AMVER: Computer-assisted Search and Rescue 24
A Reader Replies to "The Wake of the TITANIC" 185
A Review of Fishing Vessel Safety—Past and Present 51
AWSC Develops Shipyard Safety Training Program 37
CIMARRON: Guardian of the River 183
Coast Guard Puts a Patrol "on Ice" 12
Don't Wake the Sleeping Giant 246
Emergency Care for Hypothermia 327
Ferreting Out the Facts Behind Tanker Casualties 293
FLIR: Turning Night into Day 146
Gracey Takes the Helm 229
Help for Human Beings—it's Instrumental 108
"Hello. This is a computer talking to you . . ." 332
How Hazardous is Harvesting the Sea? A Report on Fishing Fatalities 173
How Mobil Manages to Improve Safety 300
Human Error? 117
Marine Safety Photography Contest 69
Marine Safety Poster Contest 68
Merchant Marine License Statistics. 18
Merchant Marine Registry and Seaman Certification Statistics 88
National Safe Boating Week 169
New System Makes Lifeboat Launching Safer 16
Pairing "Schoolships" with Scholarship: SUNY Maritime College 211
Pilot Ladder Safety 201

Plotting the Course of the Rules of the Road
Part I 230
Part II. 271
Port Access Route Study Update 36
Prove that Your EPIRB is Working 191
Rescuing a Rescue Boat. 156
Safety Films from England 336
Setting Fires For Safety 150
Setting our Sites on Safety 240
Shipboard Fire: No Time for a Coffee Break. 105
Shore Duty That Keeps You "Underway". 76
Sinbad of the Coast Guard. 329
SS POET: Lost at Sea 177
Tank Coatings—Don't Hazard a Guess on Hazards. 312
The End of the Seasick Blues 263
The Fatigue Factor: the Insidious Enemy of the Mariner 71
The LNG Peril: Fact or Fiction?. 305
The Mariner is a Human Resource 124
The Maze Revisited: An Update on the Revision of the Shipping Laws. 85
The Mourning of the TITANIC 131
The Open Conference: Grounds for Agreement 66
The Rhyme and Reason of Coast Guard Mailing Addresses 180
The Wake of the TITANIC 9
There's a new source of power in the wind 207
"THINK GREEN". 265
To the Rescue: Six Agencies Join Forces to Respond to Emergencies 43
Too Many Fires in the Iron 275
Training Facilities with Coast Guard-approved Radar Observer Courses 322
Weathering the Seas 235
1982 International Ice Patrol Service 46

(January: pages 1 - 28; February: 29 - 60; March: 61 - 96; April: 97 - 132; May: 133 -160; June: 161 - 192; July: 193 - 220; August: 221 - 252; September/October: 253 - 284; November: 285 - 316; December: 317 - 348)

Lessons from Casualties

The following is taken from a letter written by LCDR T. H. Jenkins, Captain of the Port, Los Angeles-Long Beach:

Hatch cover accidents are unfortunately routine on board vessels of the United States Coast Guard, Navy, and Merchant Marine. They often result in permanent loss of several fingers or, in the case of falls, spinal injuries rather than simple fractures which would eventually heal completely. While anyone can and theoretically should take the time to find and use a piece of line or chain in the absence of an installed safety device, few will actually bother.

It is often easy to drill through a hatch support brace and the peg or socket to which it mates and install a toggle pin with a small chain or cable to prevent loss. If this is not feasible in a particular location, a latch which catches the hatch when it is opened but must be lifted to close the hatch may be installed on an adjacent bulkhead. Such a latch should also be equipped with a toggle pin.

If ships' officers and crews would routinely look for these safety devices and install or replace them as soon as they noticed them missing, the frequency of this common accident could be reduced. In a year and a half as Safety Officer and First Assistant Engineer on a Coast Guard cutter, I rarely went a month without ordering the replacement of a missing toggle pin somewhere on the ship. ⚓

Methyl Methacrylate:

$CH_2 = C(CH_3)COOCH_3$

Synonyms:	acrylic resin monomer MMA
Physical Properties	
boiling point:	101°C (214°F)
freezing point:	-48°C (-54°F)
vapor pressure at 20°C (68°F):	29 mm Hg
25.5°C (78°F):	40 mm Hg
Threshold Limit Values (TLV)	
time weighted average:	100 ppm; 410 mg/m^3
short term exposure limit:	125 ppm; 510 mg/m^3
Flammability Limits in Air	
lower flammability limit:	2.1% by vol.
upper flammability limit:	12.5% by vol.
Combustion Properties	
flash point (c.c.):	9°C (49°F)
autoignition temperature:	435°C (815°F)
Densities	
liquid (water = 1.0):	0.94
vapor (air = 1.0):	3.45
Identifiers	
U.N. Number:	1247
CHRIS Code:	MMM
Cargo Compatibility Group:	14 (Acrylates)

Methyl methacrylate (muh-THAK-ruh-late) is a clear, flammable liquid with a sharp, fruity acrylic odor. It is more readily known to the general public as the clear, hard plastic marketed under the trade names Plexiglas® (Rohm & Haas) and Lucite® (Du Pont), to name just two.

Plexiglas® and Lucite® are actually the "polymer" form of methyl methacrylate. Polymers are compounds consisting of linked "monomers," or chemical building-block molecules. In the case of methyl methacrylate, the polymer is made up simply of the chemical repeating itself over and over again. German chemist Otto Rohm, in his doctoral thesis in 1901, first described the chemical structure of the parent methacrylate compounds and the methyl and ethyl polymers. In 1909 he formed Rohm & Haas with Otto Haas, and in 1931 the company began commercial production of the methacrylates. Today, the Rohm & Haas Company is one of the world's leading producers of methacrylate monomers and polymers, not only the methyl and ethyl derivatives, but also the many other varieties available.

Methyl methacrylate needs to be inhibited during shipment and storage; in other words, a chemical must be added to keep the methyl methacrylate from reacting with itself ("self-polymerizing"). If controlled, this process gives us the valuable plastics mentioned above, but, if uncontrolled, self-polymerization can be a violent process. It can be initiated by heat, contamination by such things as acid or rust, loss of the inhibitor's effectiveness because of inert atmosphere (these particular inhibitors require oxygen), moisture (which promotes formation of a "popcorn polymer" and causes rust—a source of contamination—to form on mild steel), or aging (probably more important a consideration for long-term storage than for shipment). The need for inhibition applies to both bulk and package shipment of methyl methacrylate; the only exception is package shipment of a very high purity grade. It should be noted that the inhibitor's effects do not extend to methyl methacrylate vapors. These vapors may polymerize on flame screens or in vents and result in stoppage of a vent. Flame screens and vents should thus be checked regularly for polymer buildup.

Personnel involved in the handling or transferring of methyl methacrylate should wear chemical goggles or a face shield, impervious gloves and clothing, and protective boots. Overexposure may cause irritation of the skin and eyes. The vapor is irritating to the respiratory tract and, at high levels, may also cause drowsiness and possibly unconsciousness. If methyl methacrylate gets into a worker's eyes, they should be flushed immediately with large amounts of water and medical assistance should be obtained as soon as possible. Contact lenses should not be worn by personnel handling this

chemical. If liquid methyl methacrylate splashes on a worker, he should wash the affected skin area with soap and water and remove and launder his contaminated clothing before wearing it again. If a rash develops, he should seek medical attention. If liquid methyl methacrylate is ingested (swallowed), vomiting should be induced if the victim is conscious and medical attention should be sought immediately. Inhalation of the vapor should be treated by removal of the victim to fresh air and artificial respiration, if needed. Again, medical attention should be sought.

Methyl methacrylate is flammable. All sources of ignition should thus be eliminated, and all containers should be grounded to prevent static electricity charges. Fires involving methyl methacrylate must be fought with extreme care, preferably from a distance or a protected location. This is because of the possible violent polymerization reaction brought about by heat. Suitable extinguishing agents are alcohol foam, dry chemical, CO_2, and water fog. The water fog can be used to keep containers cool. Firefighting personnel should wear self-contained breathing apparatus, impervious protective clothing, and eye protection.

The U.S. Coast Guard regulates methyl methacrylate as a Subchapter O cargo (Title 46 of the Code of Federal Regulations; Part 151 for tank barges and Part 153 for tankships). IMO, the International Maritime Organization, regulates it for bulk shipment in Chapter 6 of the Chemical Code and includes it in the IMDG (International Maritime Dangerous Good) Code for package shipments (page 3091). The U.S. Department of Transportation classifies it as a flammable liquid, and IMO assigns it to Hazard Class 3.2. Both the U.S. Environmental Protection Agency and IMO consider methyl methacrylate a Category D Pollutant.

Cargo and Hazards Branch*
Marine Technical and
Hazardous Materials Division

* The Hazard Evaluation Branch (G-MTH-6) and the Cargo Systems Branch (G-MTH-3) have merged to form the Cargo and Hazards Branch (G-MTH-3).

Fire Hose Doubles as Ice Rescue Equipment

(Reprinted with permission from the National Safety Council's Recreational Newsletter, *January-February 1982)*

Fire hose and a pressurized air cylinder , standard pieces of firefighting equipment, have been combined to form a unique new water and ice rescue device.

The device is simple: one or more 50-foot sections of 2½-inch or 3-inch hose are charged with air from the air cylinder carried on all fire apparatus for use in breathing masks. Once filled with air, the hose becomes rigid and buoyant. Tests have shown that a 50-foot section will support 10 or more people. In one particular test, it was demonstrated that during a panic situation it was possible to rescue up to eight adults, if they were convinced they should hold on.

Any number of sections may be joined and pushed out into a river, lake, or ice-covered body of water (or even a hydraulic created by low head dams) to effect a rescue.

The hose rescue tool can be placed in service fast. It can be brought to wherever needed with a minimum of personnel. It requires approximately 6 seconds to fill a 50-foot section of hose to the recommended 100 psi from a 30-minute, 45-cubic-foot capacity air cylinder. It will drop the pressure in the air cylinder approximately 500 to 600 psi. The pressure in the hose is regulated to a maximum of 120 psi by a relief valve on the rescue device.

For more information about the fire hose rescue device, write to the International Association of Dive Rescue Specialists, 1449 Riverside Drive, Fort Collins, Colorado 80524. ‡

Rear Admiral Kenneth G. Wiman
Chief, Office of Research and Development

Rear Admiral Kenneth G. Wiman was born in Kearny, New Jersey, on October 1, 1930, and graduated from North Arlington High School, North Arlington, New Jersey, in 1948. He began his career in the Coast Guard as an Ensign following graduation from the U.S. Coast Guard Academy in New London, Connecticut, in June 1952.

He served his first assignment as Watch Officer on board the United States Coast Guard Cutter RAMSDEN, a destroyer escort operating in the Pacific out of Honolulu. This assignment, which lasted a year, included operations in the Korean campaign area. Transferred in September 1953, he next served as Student Engineer Officer on the cutter MACKINAC for a year, after which he served as Assistant Engineer on the cutter CAMPBELL for six months; both of these were cutters operating out of New York on ocean station patrol and search and rescue. From May 1955 to March 1956, he served as Engineer Officer on the cutter MENDOTA, based at Wilmington, North Carolina.

He was next assigned as a student at Rensselaer Polytechnic Institute in Troy, New York, where he earned a Bachelor of Civil Engineering Degree in September 1957. From there he reported to the Coast Guard Base in Ketchikan, Alaska, where he served as Industrial Manager and also as Executive Officer for several months. In August 1959, he was assigned as Assistant Chief, Civil Engineering Branch, at the Seventeenth Coast Guard District office in Juneau.

From March 1961 to June 1965, he served as Project Engineer in the Civil Engineering Division at Coast Guard Headquarters in Washington, DC. In May 1965, then Lieutenant Commander Wiman served as a U.S. delegate to the Seventh International Conference on Aids to Navigation in Rome, Italy. He served other temporary assignments on a Loran program in Germany, Denmark, Greenland, and the Faeroe Islands.

During the next two years, he was stationed at the Coast Guard Base in Galveston, Texas, as Deputy Group Commander and Executive Officer.

In July 1967, he returned to the Coast Guard Academy to become Chief of the Physical Plant Division. In July 1970, he returned to Headquarters to serve as Assistant Chief, Civil Engineering Division, Office of Engineering. In December 1972, he moved to the Office of Marine Environment and Systems at Headquarters, where he served as Chief, Bridge Division, until July 1974, and then as Manager, Deepwater Ports Project, for two years. For exceptionally meritorious achievement in the latter duty he was awarded the Meritorious Service Medal (1975).

In June 1976, then Captain Wiman assumed command of Coast Guard Base Gloucester in Gloucester City, New Jersey, with additional duties as Captain of the Port of Philadelphia. He was awarded a second Meritorious Service Medal in June 1979 for performance in that assignment. He subsequently returned to Headquarters as Deputy Chief of the Office of Marine Environment and Systems and was awarded a third Meritorious Service Medal upon completion of that assignment.

He assumed his present assignment in June 1981.

Following is a resume of his appointments in rank:

- Cadet, July 1948
- Ensign, June 1952
- Lieutenant (junior grade), December 1953
- Lieutenant, February 1957
- Lieutenant Commander, February 1963
- Commander, April 1967
- Captain, July 1973
- Rear Admiral, June 1981

Rear Admiral Wiman has been a registered Professional Engineer since 1961. He holds memberships in the Society of American Military Engineers, the American Society of Civil Engineers, Tau Beta Pi (the National Engineering Honor Society), and Chi Epsilon (the National Civil Engineering Honor Society).

Rear Admiral Wiman's wife is the former Virginia M. Bowling of New London, Connecticut, who attended the University of Connecticut. The Wimans have five children: Stephen, Keith, Carl, Gail, and Susan. ‡

Nautical Queries

The following items are examples of questions included in the Third Mate through Master examinations and the Third Assistant Engineer through Chief Engineer examinations.

DECK

1. According to the International/Inland Rules, which vessel is not considered a "vessel restricted in her ability to maneuver"?

A. A vessel engaged in the launching or recovery of aircraft
B. A vessel engaged in minesweeping operations
C. A vessel engaged in dredging
D. A vessel engaged in trawling

REFERENCE: International Rules of the Road

2. The two most effective generating forces of surface ocean currents are

A. temperature and salinity differences in the water.
B. wind and density differences in the water.
C. water depth and underwater topography.
D. rotation of the earth and continental interference.

REFERENCE: Bowditch

3. Latitude on the terrestrial sphere is comparable to what on the celestial sphere?

A. Altitude
B. Right ascension
C. Celestial meridians
D. Declination

REFERENCE: Crawford, Celestial Navigation

4. Before operating a fixed CO_2 system, you should

A. evacuate all personnel from the area.
B. secure appropriate remote shut-downs.
C. shut down the ventilation system.
D. do all of the above.

REFERENCE: CG 329, Sec. 3-4-13

5. The upward slope of a ship's bottom from the keel to the bilge is known as

A. camber.
B. slope.
C. dead rise.
D. keel height.

REFERENCE: Ship Construction

ENGINEER

1. The empty weight of a "100-lb." bottle in a fixed CO_2 system is 130 lbs. What is the minimum acceptable weight the cylinder may have before recharging is required?

A. 200 lbs.
B. 210 lbs.
C. 220 lbs.
D. 230 lbs.

REFERENCE: 46 CFR 91.25-20

2. Ships are less stable when water or fuel tanks are partially filled because of the

A. free-surface effect.
B. increase in buoyancy.
C. decrease in draft.
D. reduction in trim.

REFERENCE: P.N.E. NAVPERS

3. When you are wearing any type of gas mask, fresh-air hose mask, or self-contained

breathing apparatus, you should immediately return to fresh air if you feel

A. heat in the canister or hose.
B. excess air flow in the mask.
C. air leakage from the facepiece.
D. nausea, dizziness, or high breathing resistance.

REFERENCE: MarAd Firefighting & Safety

4. Why is it necessary to wear a fresh-air hose mask or self-contained breathing apparatus to safely enter a sealed tank or compartment where the atmosphere is unknown?

I. The tank or compartment may not contain enough oxygen to support life.
II. The tank or compartment may contain a toxic atmosphere.

A. I only
B. II only
C. Both I and II
D. Neither I nor II

REFERENCE: MarAd Firefighting & Safety

5. A tank which has been sealed for a long time could be dangerous because

A. steel surfaces consume oxygen by rusting.
B. a vacuum usually forms in a sealed tank.
C. moisture condenses in the tank, displacing the oxygen.
D. most tank coatings give off poisonous vapors in the presence of moisture.

REFERENCE: MarAd Firefighting & Safety

ANSWERS

1.C; 2.A; 3.D; 4.C;5.A
ENGINEER
1.D;2.B;3.D;4.D;5.C
DECK

If you have any questions about the Nautical Queries, please contact Commanding Officer, U.S. Coast Guard Institute (mvp), P.O. Substation 18, Oklahoma City, Oklahoma 73169; tel.: (405) 686-4417.

Medical Corpsmen Learn CPR While at Sea

Hospital corpsmen assigned to the USS PROTEUS recently underwent 13 hours of intensive training in cardiopulmonary resuscitation (CPR) while "at sea" during a 3-day training period.

CPR is a life-sustaining skill which combines breathing and chest compression in an attempt to save the lives of people whose heart and lungs have stopped functioning.

Chief Henry O. Grady, applying chest compression, demonstrates advanced CPR to medical corpsmen on the USS PROTEUS. Photo courtesy of the American Heart Association

Chief Hospital Corpsman Henry O. Grady, an American Heart Association-certified instructor in CPR assigned to the Naval Regional Medical Branch Clinic at Naval Station, Guam, joined the PROTEUS for the March 4 - 6 underway period to conduct the training.

"CPR is an essential skill for a shipboard environment," said PROTEUS lieutenant Harrison Kerchner, Medical Division Officer. "The hazards of shipboard duty range from drowning to electrical shock. These hazards, coupled with the natural causes of cardiac arrest, make it a matter of 'the more, the better' as far as CPR training is concerned."

This CPR training is just a first step. The next is to certify the entire staff of hospital corpsmen as American Heart Association CPR instructors who will then be able to train the ship's company in continuing a certification and recertification program.

Information on CPR training is available from the American Heart Association, National Center, 7320 Greenville Avenue, Dallas, Texas 75231. Individuals wishing materials should contact their state heart associations. ‡