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of the Marine Safety Council

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United States
Coast Guard



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Cover

The International Maritime Organization (IMO), whose London headquarters is pictured on our cover, is a specialized agency of the United Nations. To learn more about the Coast Guard's role in IMO's work, see page 83. (Photo by the Department of Industry (U.K.); Crown copyright reserved.)

The International Maritime Organization

(and what the Coast Guard does there)

D. F. Sheehan and G.P. Yoest

The International Maritime Organization (IMO), formerly called the Intergovernmental Maritime Consultative Organization (IMCO), is a specialized agency of the United Nations whose main objectives are the development of internationally agreed standards to improve safety at sea and to prevent pollution of the oceans. The United Nations Maritime Conference of 1948 adopted the Convention establishing IMO as the first international body devoted exclusively to maritime matters.

The governing body of IMO is the Assembly, which meets once every 2 years and is open to all 130 member states. The Commandant of the Coast Guard heads the U.S. delegation to the Assembly. In the period between the sessions of the Assembly, the IMO Council exercises the functions of the Assembly in running the affairs of the Organization. The Council consists of 32 member governments, including the United States, elected for 2-year terms by the Assembly.

IMO has five Committees: the Maritime Safety Committee, the Marine Environment Protection Committee, the Legal Committee, the Committee on Technical Cooperation, and the Facilitation Committee. The Maritime Safety Committee has 10 Subcommittees. U.S. Coast Guard personnel currently chair three of these Subcommittees. The Committees and IMO hosted diplomatic conferences are responsible for the organization's development of

internationally agreed standards, technical codes, and recommendations.

The United States participates at all levels of IMO. To ensure private sector participation in the development of U.S. positions for IMO, the Shipping Coordinating Committee (SHC), a Federal Advisory Committee, was formed by the Department of State in 1958. The Coast Guard chairs 3 Technical Subcommittees and 12 Working Groups of the SHC.

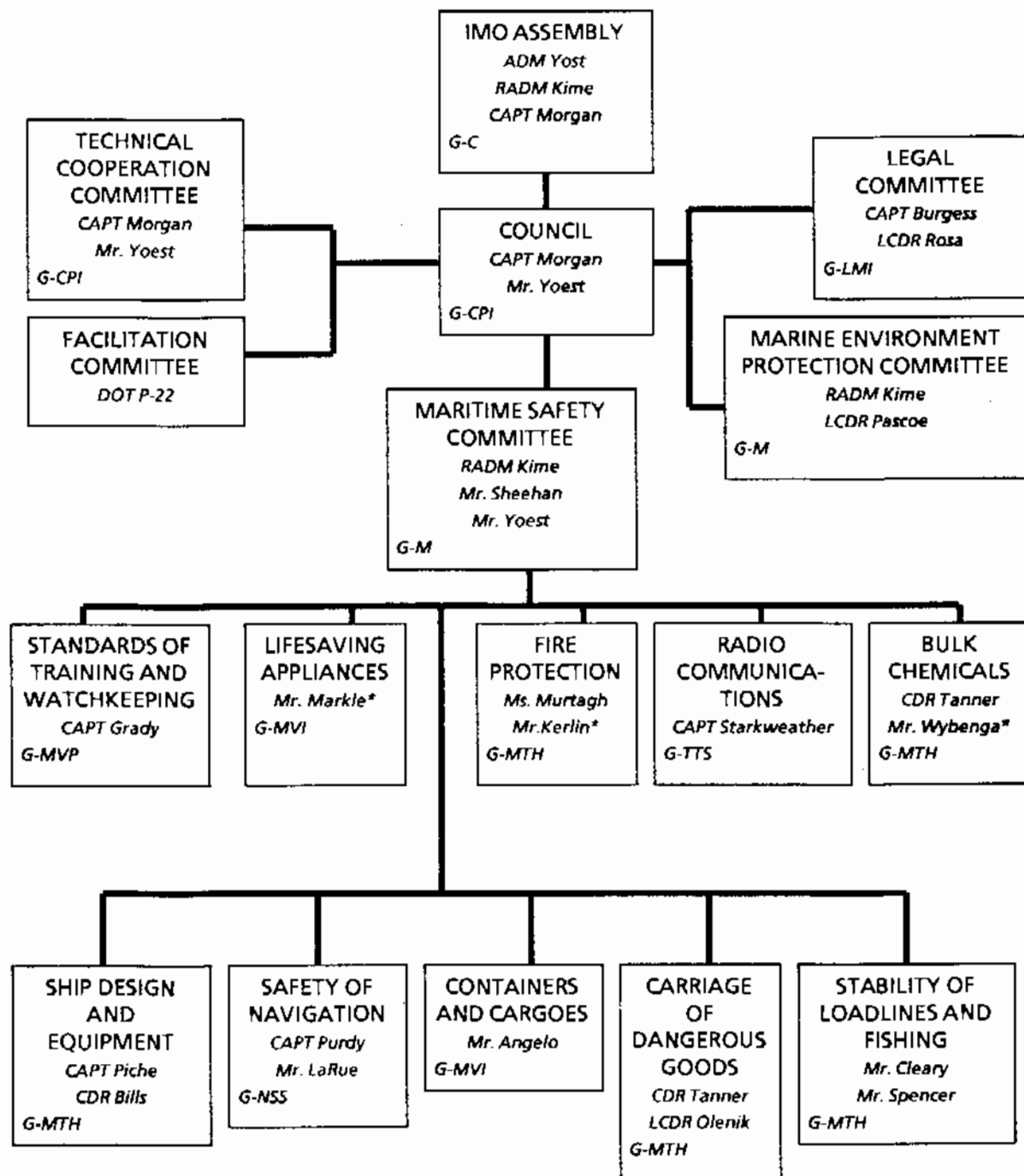
Normally, before U.S. participation in any of the IMO Committees or Subcommittees, public meetings of the SHC are held to formulate U.S. positions. Announcements of these meetings are printed in the Federal Register in advance of the meeting date, and invitations are sent directly to interested industries, labor organizations, government agencies, and other groups. Private sector participation in these meetings is welcomed and encouraged. In addition to this process for fathering public input, the delegations of the United States to the various IMO meetings often contain members from varied segments of the private sector.

Although the State Department is responsible for U.S. participation in international organizations, it has delegated a large part of the responsibility for the International Maritime Organization to the Coast Guard. The Coast Guard leads the U.S. delegations to the Assembly, the Maritime Safety Committee, the Marine Environment Protection Committee, the Legal Committee, and to all Subcommittees. In this role, we also coordinate all preparatory work for IMO meetings.

The standards developed by IMO have substantial impact on the seafarer, the shipowner, flag states, coastal states, and port

Mr. Sheehan is Technical Adviser for safety, security, and pollution prevention in the Coast Guard's Office of Marine Safety, Security, and Environmental Protection. Mr. Yoest is an International Affairs Adviser in the Office of the Commandant, U.S. Coast Guard.

Primary Coast Guard Participants, IMO



* Chairman of IMO Body



RADM J.W. Kime, Chief of the Coast Guard's Office of Marine Safety, Security, and Environmental Protection, confers with U.S. delegation members.

states. All are potentially at risk from the operation of ships and all benefit from the existence of standards, be they design or operational in nature.

The United States clearly benefits from its active participation in IMO. More than 95 percent of U.S. foreign shipping trade is carried in foreign vessels. Due to the large number of foreign vessels trading at U.S. ports, it is essential that the United States actively participate in the development of international safety and environmental standards. Our position has been that it is far more effective to influence the development of such standards than merely to react to standards developed by others.

Compliance with these internationally agreed global safety and pollution prevention standards by the great number of foreign ships engaged in U.S. trade is providing a significant

degree of protection to our ports, waterways, environmental resources, population, and property. The adherence of these ships to global standards -- satisfactory to the United States -- has provided us with a high level of assurance that the ships are safe and operate in accordance with sound environmental procedures.

An important advantage that the United States derives from the nearly universal compliance with IMO standards has been the virtual elimination of the need to develop and enforce unilateral domestic requirements. Ensuring compliance with U.S. unilateral standards would be extremely resource-intensive. The adoption of global standards has permitted us to rely on a lower level of foreign vessel boardings to examine for compliance.

There are now 28 assorted IMO conventions and associated protocols, as well as 16 different, voluntary sets of "Codes." Twenty-one of the 28 treaty instruments are now in force.

In summation, the broad scope of International Maritime Organization Activities affects many Coast Guard mission areas. The United States has been able to ensure that the standards developed and adopted by the IMO to date are largely compatible with our domestic goals and policy. IMO is recognized by the Department of State as one of the most cost effective, well run and efficient of the U.N. specialized agencies. The cost of U.S. and Coast Guard participation in IMO is readily justified when compared to both the economic impact of IMO treaties and guidelines, and to the value of the benefits to the United States which have been secured by our delegations.



Central meeting room in the IMO Headquarters. (Photo copyright John Rose Associates)

SOLAS Working Group on the Carriage of Dangerous Goods and the IMDG Code

LCDR P. C. Olenik

Input from industry and other concerned parties to the SOLAS Working Group on the Carriage of Dangerous Goods can ultimately affect the requirements in the International Maritime Dangerous Goods (IMDG) Code. The IMDG Code and its detailed provisions are designed to assist compliance with legal requirements of the International Convention for Safety of Life at Sea (SOLAS), currently in force, regarding the carriage of dangerous goods (called "hazardous materials" in the United States) by sea. Many nations have adopted the IMDG Code through their national legislative process making its provisions mandatory for the transportation of dangerous goods by vessels within their jurisdiction.

Since the Code was first published in 1965, various supplements followed, and the present 5-volume edition incorporates all changes and amendments in force effective July 1, 1986, including Amendment 22. In order to understand the importance of the SOLAS Working Group, it is imperative that the IMDG Code amendment process be reviewed.

The International Maritime Organization (IMO) is a specialized agency of the United Nations concerned with maritime affairs. Through its Maritime Safety Committee (MSC) and Carriage of Dangerous Goods (CDG) Subcommittee, recommendations for the provisions of the IMDG Code are reviewed and implemented. Delegations from participating nations bring written and oral comments to the CDG Subcommittee. Their positions are formulated based upon national experience and modern technology. Some proposals are

mundane, while others are controversial and require years of debate.

While various countries have differing organizations representing their national interests, in the United States this function is accomplished through the Department of State Shipping Coordinating Committee (SHC) under which the various SOLAS working groups operate.

The SOLAS Working Group on the Carriage of Dangerous Goods provides the forum by which U.S. positions on the current and proposed IMDG Code changes are formulated. The Working Group provides input to the delegates who represent the United States at the IMO meetings held in London at IMO Headquarters. Proposals made to the CDG Subcommittee are negotiated by delegates from all participating nations, and decisions are reached. All recommended changes to the IMDG Code are then forwarded to the MSC for approval. The United States also participates in the Editorial and Technical Group which reviews the reports from the CDG Subcommittee and makes editorial corrections prior to their presentation to the MSC.

The United States is an extremely active participant at the International Maritime Organization. Issues raised by the United States are heard and often have a direct impact on the future of the IMDG Code. Furthermore, domestic hazardous materials regulations (Title 49, Code of Federal Regulations, Parts 171-179) may also be affected by decisions at the international level and IMDG Code amendments.

While safety is always the prime consideration in the movement of dangerous goods, advances in technology are constantly changing the way products are transported. The IMDG Code is a fluid document, and

LCDR Olenik is a Chemist Engineer in the Hazardous Materials Branch, Office of Marine Safety, Security, and Environmental Protection.

recommended changes will be given due consideration.

Input on particular issues, areas where the IMDG Code may be deficient or otherwise in need of change, is always welcome whether by Working Group members or any others. Some issues currently under consideration are the inclusion of marine pollutants in the IMDG Code, authorization of commodities in intermediate bulk containers, complete revision of the explosives and radioactive materials recommendations, and carriage of solid bulk materials in freight containers and motor vehicles.

The SOLAS Working Group meetings are open to the public and are held twice a year in Washington, DC, usually in October and in March just before the spring CDG session. Participation is welcome, and it is through the Working Group that industry and other interested parties can make positions known and can solicit changes to the IMDG Code.

Persons interested in the Working Group on the Carriage of Dangerous Goods should contact Commander R.W. Tanner or Lieutenant Commander P.C. Olenik at U.S. Coast Guard Headquarters (G-MTH-1), 2100 Second Street, SW, Washington, DC 20593-0001, or by telephone at (202) 267-1577.

Read the Instructions!

Weight of Replacement Batteries Affects Performance of Waterlights

The Defense General Supply Center recently performed a quality control inspection on a floating electric waterlight. They dropped the light into the water and it floated properly, however, it did not light. The batteries were replaced, and the light was dropped back into the water. The light illuminated, but it was floating sideways.

Coast Guard investigation into this deficiency revealed that the manufacturer's directions had not been followed. The batteries were replaced with off-the-shelf carbon-zinc "C" cells. This waterlight required alkaline "C" cell batteries (this requirement is inscribed on the battery pack). Carbon-zinc batteries are lighter than alkaline batteries and do not provide proper buoyancy. Additionally, they may not even supply enough power to keep the

light illuminated at the proper intensity for the required duration.

The manufacturer of this floating electric waterlight has informed the Navy that he is investigating procedures for modifying his light so that it will float properly without being dependent upon the battery weight. The Coast Guard is promulgating changes to Title 46 of the Code of Federal Regulations, Part 161.010, to ensure that all of the Coast Guard-approved floating electric waterlights have the proper buoyancy and will not be subject to the above deficiency.

Read the instructions! It is a frequent practice to replace batteries with batteries of the same size, regardless of type. If a piece of equipment requires a specific type of battery -- *only* that type of battery should be used.

Is Your Firm "Faking" a Safety Commitment?

Ron Bohn

That's a biting question, isn't it? Could your firm, as a shipper/exporter of hazardous materials/dangerous goods, be accused of "faking" its commitment to safety? Could anyone claim, or even suggest, that your company was less than honest and sincere in its total effort to safely ship its regulated commodities?

I recently noticed a T-shirt message that read, in large, bold print, "Honesty and Sincerity Are the Secrets of Success"....followed, in much smaller print, by, "when you can fake that, you've got it made!"

A cynical philosophy, indeed. Could it be applicable to any firms you know? Are there cases, perhaps, when even you shippers of hazardous materials who have a hazmat specialist or regulations compliance administrator are not honestly interested in or concerned about the safety commitment of the others involved with your shipments? Is the regulatory compliance credibility of your freight forwarders/brokers, NVOCCs, carriers and terminals and piers dismissed as being "their problem?"

That's another way of asking if your firm's safety commitment, in effect, stays "in house." Some may consider that an indelicate question. Some may consider it impertinent. Then again, I know there are readers among you who are saying, as I am, that it's about time the question was asked.

Interest in the answer is as pertinent as the details of DOT dockets, IMDG Code

amendments, UN packaging, and such technical concerns. Those technical details are of concern, indeed, but they should not be insulated from concern for the regulatory competence of the others who are documenting, transporting, or in any way handling your shipments. That concern -- with full management support -- will be a significant help in achieving a meaningful integration of safety into an overall effectiveness of the system. (My frank opinion is that we do not yet have an overall effectiveness. It would be naive to think that we do.)

Why would anyone suspect that some hazardous materials shippers are not especially conscious of -- or concerned about -- the regulatory competence of the others who become involved in the movement of their regulated commodities? I'll give you some examples... not by citing reports of the Office of Technology Assessment or DOT, but by using illustrations you are likely to have seen.

In an interview article in the July 1986 issue of *American Shipper*, a senior international transportation executive of a major chemical manufacturer/exporter described and detailed in chart form his firm's criteria for evaluating ocean carriers. Of the numerous, valid criteria applied -- all with an assigned point-value range -- there was not a single word about the regulatory competence of the prospective carrier... not even a footnote to the chart to suggest that there was any interest in the safety awareness of the carrier being considered. Not one word!

True, I happen to know that that shipper/exporter's safety-related concerns had been expressed in another way -- by other departments and in one specific application for one product involving one carrier.

So tell me: Am I unreasonable in expecting such a chemical shipper/exporter's international traffic department to have an acknowledged and openly expressed

Mr. Bohn is Hazardous Materials Coordinator for the National Cargo Bureau, Inc.

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requirement for regulatory competence included in their carrier selection criteria? Is that really expecting too much?

Similarly, the the August 1986 *Distribution* article, "Profiles in Conformance," top transportation executives of three major chemical firms (for whom I also have great respect) were interviewed concerning their carrier selection criteria. Emphasis was on performance factors, stressing valid *but non-safety* related considerations like on-time deliveries and billing errors. Only one of the three apparently mentioned to the interviewer that a carrier's rating would suffer from, for example, equipment deficiencies like leaky valves or improper tank cleaning.

Again, am I unreasonable in expecting all people with transportation-related responsibilities of chemical shippers to at least include (even if they don't stress) safety and compliance concerns in their carrier evaluations? Their failure to do so is disappointing, particularly since each of those three have top-notch "regs people."

The August 1986 *American Shipper* includes an article, "Service Is More Important than Rates," in which the National Maritime Council (NMC) recaps the opinions of 320 shippers surveyed early in 1986. The recap's categories, it grieves me to say, cover service, sales reps, rates, documentation/information service, type of vessel and equipment/intermodal related scores. Why am I unhappy with it? You guessed it: not one reference to safety related concerns. Apparently no one considered such survey categories as the carrier's competence in regulatory matters to be worth bringing up.

That publication's September 1986 issue reprinted an article from the August 1986 *Seafarer* magazine, entitled "A Breakdown in the System." Publishing it under the title "Hazardous Documents," *American Shipper* added a "major shipper's" response to *Seafarer's* editorial concerning the serious problem in Jacksonville recently with an NVOCCs apparently undocumented shipment of hydrochloric acid.

I commend it to your reading, especially if you offer LCL shipments of regulated commodities to anyone to containerize, placard, document, and deliver to an ocean carrier.

Based on conversations with numerous hazmat people, I have good reason to believe that the following is *not* an unusual scenario:

A chemicals shipper/exporter that has a regs compliance administrator or hazmat specialist on its staff develops credible and effective internal procedures, controls, and training to achieve in-house effectiveness in regulatory compliance.

That hazmat staff member, however, all too often is not included in the traffic department's discussions with prospective carriers, forwarders/brokers and NVOs. The result: packaged regulated commodities that the shipper has made a point of preparing properly and fully in accordance with the DOT and IMO (and, if by air, IATA/ICAO) requirements may easily be turned over for subsequent documentation, handling, and movement to firms with little or no awareness of, for example, the segregation and securing requirements of 49 CFR, Part 176.

Without checking the competence of the others involved with such shipments, there is a frightening range of possibilities that the original shipper may not know about: portable tanks on illegal chassis, declaring the regulated commodities as general cargo to the line, incorrect and/or deceptive documentation, stuffing the shipper's "stow away from foodstuffs" cargo with... you guessed it... foodstuffs, turning DOT-regulated materials over to truckers who have not submitted a Bureau of Motor Carrier Safety *Safety Review* form, etc.

One of the hazmat pros I spoke to recently commented that he finds out which carriers his firm's traffic department had selected by reading their names on the DOT Incident Reports.

I think of the situation as being comparable to the surgery patient. That patient (like your hazardous materials shipment) requires the application of special skills in a carefully controlled environment: the operating room. After surgery, the "post op" patient moves on to a recovery room -- again with the attendance of skilled people in a carefully controlled environment -- to effect safe and proper recovery during a crucial period. I ask you: would it make sense to move that "post op" patient to the hospital *garage* for recovery?

No, of course not. The notion is absurd. It defeats the whole point of the vital control of the patient's environment and the access to the special skills and equipment that must be at hand.

Now I ask you: Are *your* shipments like the surgery patient that everything was done right for in the operating room... and was then turned over to "garage attendants" for further "handling?"

Think about that. It's the crucial question in determining if your firm has any credibility in its approach to transporting regulated commodities.

Reminding you that the views I express are not necessarily those of any firm or organization I'm affiliated with, or publication I write for, I leave these thoughts with you:

Don't let the concerns for rates and service scuttle the priority of safety through regulatory compliance.

Don't let a "that's their problem" philosophy replace the bottom-line truth that you, the hazardous materials shipper, must be concerned with the safety competence of *all* those who are involved in the documentation, handling, and movement of your regulated cargoes. It's your material. It's your concern. If your safety commitment ends at your property line, frankly, I don't think you have a commitment. You're faking one. ■

Maritime Notes

USMMA Continuing Education

The U.S. Merchant Marine Academy's Continuing Education Program has announced its schedule of marine engineering courses for 1987.

The courses, which deal with marine diesel operations and other topics of shipboard engineering interest, are open to any U.S. citizens possessing Coast Guard maritime licenses or documents. The program is given at the Academy in Kings Point, NY, where lodging and meals for participants are available during a course.

The course offerings this year include the following:

- *Fundamentals of Marine Diesel Systems.* A 1-week course for managers, ship superintendents, port engineers, and others who require a basic overview of marine diesel operations. Basic theory on medium- and slow-speed diesel engines is examined. Courses begin March 2 and September 14. Cost: \$350 with lodging and meals; \$240 without.
- *Diesel Propulsion Systems for Marine Engineers.* A 5-week course, developed with the seagoing steam engineer in mind, which blends steam experience with modern diesel engine practices. The course is also intended for those desiring to upgrade their motor licenses to first and chief, and has U.S. Coast Guard approval as equivalent to 7 weeks of

service. Courses begin July 20 and October 19. Cost: \$2,400 with lodging and meals; \$1,700 without.

- *Diesel Ship Operation and Control for Chief Mates and Masters.* A 1-week course intended to give deck personnel the necessary engineering information -- including diesel theory, fuel and lubricants, operating speed ranges, and more -- to successfully operate a diesel-powered vessel. Courses begin April 6 and December 14. Cost: \$350 with lodging and meals; \$240 without.

- *Practical Analysis of Shipboard Vibration.* A 1-week course for ship's engineering officers and shoreside management personnel interested in implementing vibration-monitoring programs for shipboard machinery as a means to detect machinery deterioration and avoid machinery failure. Courses begin April 27 and September 28. Cost: \$520 with lodging and meals; \$410 without.

Courses are generally limited to 12 participants each, and fees include lecture and laboratory costs, notebook, textbooks, program handouts, and lodging and meals if desired. Instruction is provided by Academy faculty and industry specialists. Emphasis is on "hands on" practice, using the wide range of equipment in the Academy's marine engineering laboratories, including a Colt-Pielstick PC-2 Medium-Speed Training Engine and a Sulzer RND 68-M Slow-Speed

Training Engine.

The Marine Engineering Continuing Education Program was initiated at the Academy in 1978 in response to the maritime industry's increasing interest in diesel propulsion. Since then, other engineering topics of a timely nature have been included in the course offerings.

A full descriptive brochure of the program's 1987 courses can be obtained from the Continuing Education Coordinator, U.S. Merchant Marine Academy, Kings Point, NY 11024-1699. The Academy is operated by the Maritime Administration of the U.S. Department of Transportation.

Coast Guard Rules To Cut Alcohol and Drug Related Marine Accidents

Early in February, Secretary of Transportation Elizabeth Hanford Dole announced the Coast Guard is proposing rules intended to reduce commercial marine and recreational boating accidents related to alcohol and drug use.

"While the general trend of boating deaths has been going down, there are still far too many people who use drugs and alcohol when they operate their boats. My goal is to reduce the tragic number of boating accidents that result from these abuses," the Secretary said. Coast Guard officials believe alcohol or drugs may be a factor in as many as half of the 1,100 average recreational boating fatalities that occur annually.

A Notice of Proposed Rulemaking (NPRM) outlining standards to determine intoxication of recreational boaters was published February 9 in the Federal Register. The proposed rules are based on comments received in response to questions posed in an Advance Notice of Proposed Rulemaking published on May 23, 1986. They also supplement an NPRM published the same day by amending proposed rules that generally apply to commercial vessels.

Operating a vessel while intoxicated is a federal offense. When the final rules are issued, violators will be subject to civil and criminal penalties. The statute will apply to all vessels, including foreign-flag vessels operating in navigable waters of the United States, whether for recreational or commercial purposes, and to

U.S.-owned vessels operating outside U.S. waters.

The current notice proposes that operators of recreational boats and some commercial vessels be subject to the federal blood alcohol concentration (BAC) standard of .10 percent. It would allow the federal BAC standard to conform to a statutory state BAC standard on waters within the geographical boundaries of that state.

A stricter standard of .04 percent BAC is proposed for vessels with personnel requirements regulated by the Coast Guard. A stricter standard is justified because these vessels include most passenger carrying vessels as well as those carrying oil or hazardous cargoes.

Comments on the current notice may be mailed to Commandant (G-CMC/21), (CGD 84-099/CGD 84-099A) U.S. Coast Guard Headquarters, 2100 Second Street, SW, Washington, DC 20593-0001. Further information may be obtained from Mr. Carlton Perry, Office of Boating, Public, and Consumer Affairs at (202) 267-0979.

In Congress

House Merchant Marine and Fisheries Committee Chairman Walter B. Jones (D-NC) recently introduced legislation requiring U.S. government ships to be repaired in American shipyards. The Jones initiative follows a recent General Accounting Office (GAO) report on foreign contracting for the repair of naval and Military Sealift Command (MSC) ships. This report states that since fiscal year 1980, the MSC has awarded eight contracts to Canadian yards; five of the eight occurred in 1985.

"The GAO figures demonstrate that foreign contracting is becoming a more frequent practice and for bigger ticket items. Even though the five 1985 contracts represented 6 percent of total contracts, the dollar value of the contracts was over \$7.8 million or 15 percent of total expenditures," stated Chairman Jones.

"The parade of unfortunate statistics is a long and dismal one. It should be quite clear that relief for this vitally important industry must be made a top priority," Chairman Jones continued.

The Jones bill would allow two exceptions to the requirement for U.S. repair: in an emergency or if the repairs were undertaken in a

U.S. government overseas yard, such as Subic Bay in the Philippines.

The Jones bill is cosponsored by Mario Biaggi (D-NY), Robert Davis (R-MI), and Norman Lent (R-NY).

Merchant Marine Memorial

Chairman Jones also recently introduced a joint resolution authorizing the establishment of a memorial to wartime veterans of the U.S. Merchant Marine. "Over the past several years I have received countless letters from individuals who served aboard U.S. merchant vessels in wartime -- a service which was absolutely critical to our success in most, if not all, conflicts," Chairman Jones stated.

The Jones resolution provided authority for the privately funded construction of a memorial on federal land in the District of Columbia. The site would be selected by the Secretary of the Interior with the approval of the Commission of Fine Arts and the National Capital Planning Commission.

Amended MARAD Regulation

The Maritime Administration is amending its regulation that imposes fees for processing applications for MARAD approval of the sale, transfer, or charter of vessels to noncitizens of vessels owned by U.S. citizens and documented vessels under U.S. law, or the transfer of such vessels to foreign registry. This amendment will allow MARAD to reduce any fee or waive the fee entirely, in appropriate circumstances.

Section 9 of the Shipping Act, 1916, as amended (46 CFR 221.14) requires the payment of fees for processing such applications under sections 9 and 37 of the act. This portion of the rule is being amended to read:

The Maritime Administration, in appropriate circumstances, and upon a written finding, may reduce any fee imposed by this section to conform the fee charged more closely with administrative costs or may waive the fee entirely if it is not in the best interest of the Government to charge the fee.

The rule is designated in Docket No. R-108 and is effective 30 days after publication in the Federal Register.

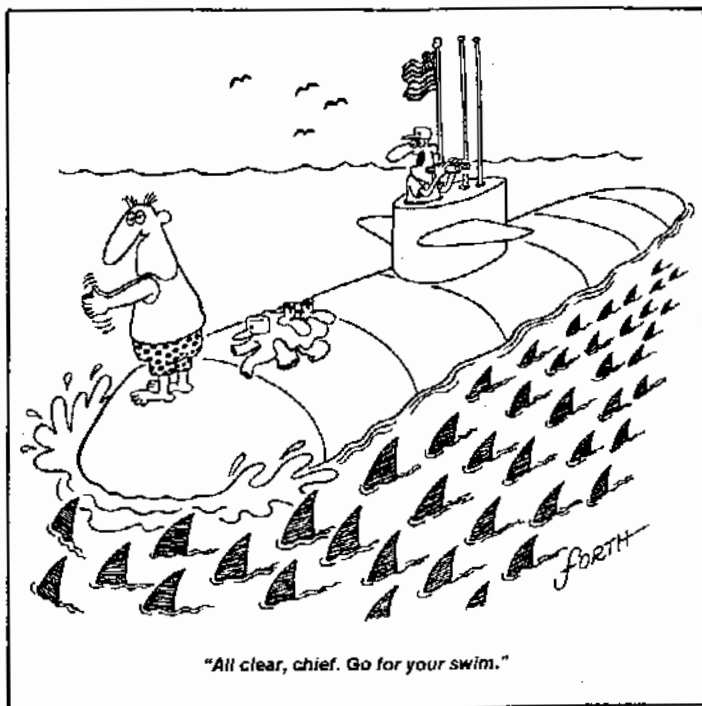
Further information is available from Jessie C. Fernanders, Chief, Ship Disposal and Foreign Transfer, Maritime Administration, 400 Seventh Street, SW, Washington DC 20590; telephone (202) 366-5111.

Seminar: Seagoing Barges and Inland/Ocean Ship Innovations

The Maritime Administration, the National Waterways Conference, and the Ports and Waterways Institute of Louisiana State University will sponsor a seminar on Seagoing Barges and Inland/Ocean Ship Innovations -- New Opportunities for U.S. Inland and Ocean Ports on May 4-6, 1987, in Washington, DC.

The seminar will use workshops to assess general cargo potential in offshore and shallow draft waterborne trades. Use of offshore barges as well as special ships capable of navigating both on the high seas and on shallow waters will be considered.

Further information is available from John Carnes, Office of Port and Intermodal Development, Maritime Administration, 400 Seventh Street, SW, Washington DC 20590; telephone (202) 366-4357.



Lessons from Casualties

Death By Overdose

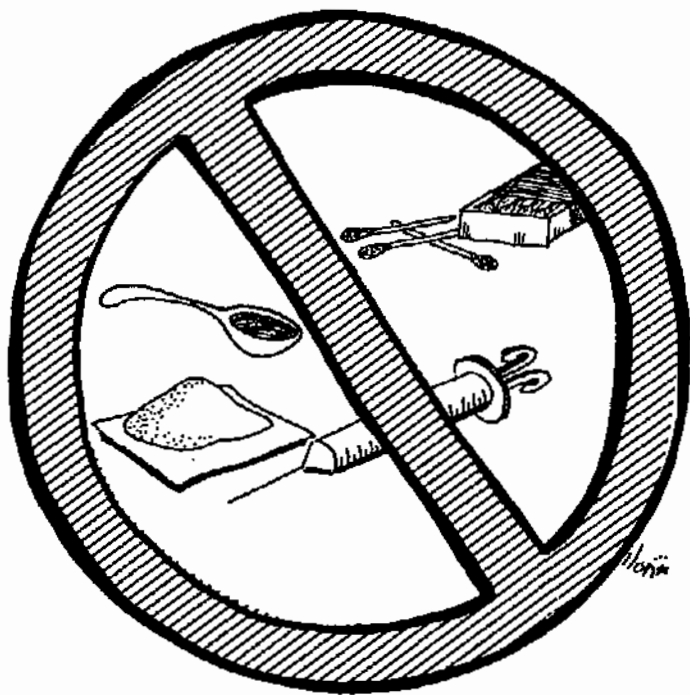
LCDR Christopher Walter

On April 14, 1985, a 36-year-old merchant seaman boarded the **M/V American North Carolina** at Staten Island to serve as a wiper. Later that morning, before he signed the ship's articles, he was found in a coma in his room and had stopped breathing by the time an ambulance arrived. He was rushed to a hospital, where he was diagnosed and treated for a heroin and cocaine overdose. Narcan, a narcotic antagonist used to counteract the effects of opiates (such as heroin), was administered, and he responded to this treatment. Later, he admitted to using heroin and cocaine. He was released from the hospital on April 17, 1985, and encouraged to obtain counseling for substance abuse.

During a search of his room, the Chief Mate and a union delegate found a hypodermic syringe and several small bags of an unknown white substance which was later analyzed by a U.S. Customs laboratory. Four bags contained 17-percent pure heroin and were labeled "Killer," a label that proved to be prophetic.

Since his address was listed as Newport News, Virginia, the Coast Guard Marine Safety Office in Hampton Roads initiated proceedings against his merchant mariner's document for use and possession of heroin. When he couldn't be found, his name was placed on the nationwide Seaman's Locator List published by Coast Guard Headquarters.

Drug use by merchant mariners endangers safety at sea and creates a potential for smuggling. Most mariners caught with drugs have their merchant mariner's documents



and/or licenses revoked. Occasionally, a revocation will shock a seaman into seeking help to stop using drugs. Our subject's life as a drug-using merchant mariner took a different, more tragic turn.

On January 17, 1987, he was found in an apartment in Savannah, Georgia, with a hypodermic needle in his arm. He had been dead for 4 days. The syringe contained traces of heroin. He was 38 years old.

There are many ways to stop using narcotics. This is one of them. ■

LCDR Walter is Chief of the Investigation Department, U.S. Coast Guard Marine Safety Office, Hampton Roads, Virginia.

Extinguishing Agents -- NAVEDTRA 465-05-00-83

Fire and Firefighting -- NAVEDTRA 465-02-00-83

Fire Hose and Fittings -- NAVEDTRA 465-03-00-79

Fireman -- NAVEDTRA 10520-G

Fluid Power -- NAVPERS 16193-B

Fundamentals of Diesel Engines -- NAVPERS 16178-A

Fundamentals of Petroleum -- NAVEDTRA 10883-B

Halon 1301 -- NAVEDTRA 465-15-00-83

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Information on acquiring naval publications may be obtained by contacting Naval Educational Publications, U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402; telephone (202) 783-3238 and by contacting Naval Ship Technical Manuals, NAUKSEA System Command, Code 09B2, Washington, DC 20360; telephone (202) 692-6454. Government bookstores are also located throughout the United States.

(continued on next page)

Miscellaneous

Marine Fire Prevention, Firefighting, and Fire Safety -- Maritime Administration

Occupational Safety and Health Standards for General Industry -- OSHA

The Ship's Medicine Chest and Medical Aid at Sea -- Department of Health, Education and Welfare

33 CFR Parts 151-199, Pollution

46 CFR Parts 1- End, Shipping

Auxiliaries

Basic Applied Fluid Power -- Oster

Centrifugal Pumps, Selection, Operation & Maintenance -- Karassik & Carter

Commercial and Industrial Refrigeration -- Nelson

Deck Machinery -- Smith

Handbook of Air Conditioning Systems Design -- Carrier

Industrial Hydraulics -- Pippenger and Hicks

Industrial Hydraulics Manual -- Sperry, Vickers

Marine Air Conditioning and Refrigeration -- Shulters

Marine Engineer's Guide to Fluid Flow -- Robinson

Modern Refrigeration & Air Conditioning -- Althouse, Turnquist, Bracciano

Modern Refrigeration Practice -- King

Naval Auxiliary Machinery -- U.S. Naval Institute

Principles of Refrigeration -- Dossat

Principles of Refrigeration -- Marsh, Olivo

Pumps Handbook -- Karassik, Krutzch, Fraser, Messina

Pumps Operation and Maintenance -- Hicks

Pump Questions and Answers -- Carter, Karassik & Wright

Refrigeration, Air Conditioning and Cold Storage -- Gunther

Refrigeration and Air Conditioning -- Jordan, Priester

Refrigeration Servicing -- Goliber

Refrigeration Systems Maintenance Manual -- Thermo King

Simplified Hydraulics -- McNickle

Standard Industrial Hydraulics -- Elonka, Johnson

Electrical

Basic Electricity -- Van Valkenburgh, Nooger and Neville

Basic Electronics -- Grob

Electrical Circuits -- Siskind

Electric Circuits and Machines -- Lister

Electric Motor Control Fundamentals -- McIntyre

Electric Motor Repair -- Rosenberg

Electrical Machines -- Siskind

Electrical Motor Controls & Circuits -- Fuchs, Garstang

Electricity One-Seven -- Mileaf

IEEE Standard 45-1971, Recommended Practice for Electric Installations on Shipboard -- IEEE

Marine Electrical Practice -- Watson

Modern Electricity and Electronics -- Smith

Preventive Maintenance of Electrical Equipment -- Hubert

Standard Handbook for Electrical Engineers -- Fink

Storage Batteries -- Vinal

Basic Electricity -- Marcus

Direct and Alternating Current Machinery -- Rosenblatt & Friedman

Hull and Welding

Industrial X-Ray Interpretation -- Schneeman

Introduction to Steel Shipbuilding -- Baker

Manual of Ship Construction -- Manning

Modern Ships -- LaDage

Modern Welding -- Althouse, Turnquist, Bracciano

Naval Architecture for Marine Engineers -- Muckle

Principles of Magnetic Particle Testing -- Betz

Procedure Handbook of Arc Welding -- Lincoln Electric Company

Rules for Building and Classing Steel Vessels -- ABS

Welding Engineering -- Rossi

Metals and How To Weld Them -- Jefferson and Woods

Internal Combustion Engines

Diesel and High Compression Gas Engines -- Kates and Luck

Diesel Engines -- Anderson

Diesel Engine Manual -- Black

Diesel Engine Operation & Maintenance -- Maleev

Diesel Engine Reference Book - Lilly

Diesel Engineering Handbook -- Stinson

Diesel: Fundamentals, Service and Repair -- Toboldt

Diesel Motor Ships Engines & Machinery -- Knak

Internal Combustion Engines & Air Pollution -- Obert

Marine Diesel -- Burghardt & Kingley

Marine Diesel Engines -- Pounder

Marine Diesel Standard Practices -- DEMA

Medium & High Speed Diesel Engines for Marine Use -- Henshall

Questions and Answers on the Marine Diesel Engine -- Lamb

Prime Movers -- Staniar

Safety

Accident Prevention Manual for Industrial Operations -- National Safety Council

Fire Protection Handbook -- National Fire Protection Association

Firefighting Strategy and Leadership -- Walsh

Occupational Safety and Health Standards for General Industry -- OSHA

Steam

Boilers, Types, Characteristics, and Functions -- Shield

Combustion Engineering -- Fryling

Fundamentals of Steam Generators as Applied to Marine Propulsion -- MEBA

Introduction to Marine Engineering -- Latham

Marine Steam Boilers -- Milton

Marine Steam Engines and Turbines --
McBirnie and Fox

Naval Turbines -- U.S. Naval Institute

Practical Boiler Water Treatment -- Pincus

Standard Boiler Operator Questions &
Answers -- Elonka, Kohan

Steam: Its Generation and Use -- Babcock and
Wilcox

Steam and Gas Turbines, Vols. I & II -- Stodula
& Loewenstein

Steam Turbines -- Church

Introduction to Marine Engineering -- Latham

General

Basic Thermodynamics -- Skrotzki

Control Engineers Handbook -- Truxal

Encyclopedia of Instrumentation and Control --
Considine

Engineering Handbook -- DeLavel

Engineering Technical Drafting and Graphics --
Giachino, Beukema

Handbook of Applied Instrumentation --
Considine & Ross

How To Run a Lathe -- South Bend Lathe
Lubrication -- Gunther

Machine Tool Metalworking -- Feirer

Machine Tool Operation -- Burghardt, Axlerod,
Anderson

Maintenance Engineering Handbook -- Morrow

Marine Engineering, Vols. I & II -- Seward

Marine Engineering -- Harrington

Mechanical Systems -- Emerick

Modern Marine Engineer's Manual, Vols. I &
II -- Osbourne

Principles of Penetrants -- Betz

Programmed Blue Print Reading -- Coover

Relief Engineers Training Manual for
Automated Vessels -- MEBA

Shop Theory -- Henry Ford Trade School

Stability and Trim for the Ships Officer --
LaDage

Standard Handbook for Mechanical Engineers --
Baumeister & Marks

Standard Plant Operators Manual -- Elonka

Standard Plant Operators Questions and
Answers, Vols. I & II -- Elonka and Robinson

Work Boat Engineer and Oiler -- Ward

Gear Handbook -- Dudley

Industrial Instrument Servicing Handbook --
Carroll

Marine Chemistry -- Martin

*This article was compiled for Proceedings
magazine by the staff of the U.S. Coast Guard
Institute (mvp), P.O. Substation 18, Oklahoma
City, Oklahoma; telephone (405) 686-4417.*

Methyl Bromide

Methyl bromide is a halogenated hydrocarbon that is commonly used as a fumigant. Specifically, it is used as an insect fumigant for mills, warehouses, vaults, ships, and freight cars. It is also used in extracting oil from nuts, seeds, and flowers; in fumigating the soil in agriculture; and in sterilizing food for pest control.

Methyl bromide is a nonflammable poisonous gas with virtually no odor; however, a chloroform-like odor is observed at high concentrations. Consequently, it has poor exposure warning properties because it causes no immediate irritation of the nose or respiratory tract.

Inhaling methyl bromide will cause dizziness, nausea, vomiting, abdominal pain, mental confusion, and headaches. At the extreme, long-term inhalation can cause coma and death from respiratory or circulatory collapse. Persons who have recovered from severe intoxications of methyl bromide have suffered persistent nervous system effects, including vertigo, depression, hallucinations, anxiety, and an inability to concentrate. It has been determined that severe exposure is associated with levels of 40 mg (of methyl bromide) per 100 ml of blood in the body, and estimates of concentrations which have caused human fatalities range from 8,000 ppm for a few hours to 60,000 ppm for a brief exposure.

Methyl bromide is usually contained in low-pressure receptacles and is transported above deck on cargo or passenger ships (carrying less than 25 people). It may be stowed below deck in well-ventilated spaces, provided that an

indicating substance, such as chloropicrin, is added. Methyl bromide is always stored away from foodstuffs and living quarters.

Methyl bromide forms aluminum alkyls in the presence of aluminum. These aluminum alkyls are spontaneously ignitable materials; therefore, contact with aluminum or stronger oxidizers may cause fires and explosions. Toxic gases such as carbon monoxide and hydrogen bromide may be released in fires of this type.

Care must be taken in the event of an accidental leakage of methyl bromide. It is imperative that all clean-up persons wear protective clothing. Personnel without respiratory protection must be kept upwind of the spill. The first step in cleaning up a leak is to remove all ignition sources. The second step is to ventilate the spill area, and third step is to stop the gas flow. Finally, any remaining liquid methyl bromide should be vaporized. The disposal of methyl bromide involves burning the chemical at a safe location or in a suitable combustion chamber equipped with an appropriate gas-cleaning device.

With accidental eye or skin exposure to methyl bromide, follow normal first-aid procedures. Wash eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. (Contact lenses should never be worn when working with this chemical.) Flush contaminated skin with water. If methyl bromide soaks through clothing, remove the clothing immediately and flush the skin with water. Immediate medical attention is called for if methyl bromide is swallowed, but if medical attention is not available, induce vomiting by giving the victim syrup of ipecac. If the person is unconscious, do not induce vomiting.

Methyl bromide is listed by the U.S. Coast Guard in Subchapter O of Title, 46, Code of Federal Regulations. The Department of Transportation regulations are found in Subchapter C of Title 49, CFR. Methyl bromide

Charles B. Ryan was a Fourth-Class Cadet at the Coast Guard Academy at the time this article was written. It was written under the direction of LCDR J. J. Kichner for a class in hazardous materials transportation.

is listed in the International Maritime Dangerous Goods Code as a Class 2 Gas. The National Fire Protection Agency lists methyl bromide under its hazard classification category as having a blue health hazard rating of "3," a red flammability rating of "0," and a yellow reactivity rating of "0."

Chemical Name

Methyl bromide

FormulaCH₃Br**Synonyms**

bromomethane, embafume, monobromomethane

Physical Properties

boiling point: 4.6°C (40.3°F)

freezing point: -92.8°C (-135°F)

vapor pressure: 20°C (68°F) 1420 mmHg

Threshold Limit Values

time-weighted average: 5 ppm; 15 mg/m

Flammability Limits in Air

lower flammability limit: 10% vol.

upper flammability limit: 15 % vol.

Combustion Properties

flash point: none

autoignition temperature: 537°C (999°F)

Densities

vapor (air = 1): 3.27

specific gravity: 1.73

U.N. Number: 1062

CHRIS Code: MTB

Cargo Compatibility Group: 36 (Halogenated Hydrocarbons)

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.

Engineer

1. An auxiliary boiler equipped with a return flow fuel atomization system has a _____.

- A. variable fuel supply temperature
- B. variable fuel return pressure
- C. constant fuel return pressure
- D. constant fuel combustion rate

Reference: Osbourne, *Modern Marine Engineer's Manual*, Vol. I

2. Increasing the valve clearance of a diesel engine intake valve will cause the valve to open _____.

- A. earlier and remain open longer
- B. earlier and have greater lift
- C. later and have less duration
- D. later and have greater lift

Reference: Maleev, *Diesel Engine Operation and Maintenance*

3. The seat of a butterfly valve will most likely be constructed of _____.

- A. monel
- B. stellite
- C. a resilient material
- D. admiralty metal

Reference: *Principles of Naval Engineering -- NAVPERS 10788-B*

4. Which condition would indicate broken first-stage inlet valves in a two-stage air compressor?

- A. Second-stage pressure lower than normal
- B. Intercooler pressure higher than normal
- C. Air blowing into the crankcase
- D. Air pulsing back into intake manifold

Reference: Osbourne, *Modern Marine Engineer's Manual*, Vol. I

5. When the operating handle of a molded-case circuit breaker is in the mid-position, it indicates that the circuit breaker is _____.

- A. on
- B. off
- C. reset
- D. tripped

Reference: Hubert, *Preventive Maintenance of Electrical Equipment*

Deck

1. The most important figure in the calculation of free surface for a tank carrying liquid is

- A. depth.
- B. length.
- C. displacement.
- D. breadth.

Reference: LaDage, *Stability and Trim for the Ship's Officer*

2. The propeller on your vessel has a pitch of 22.8 feet. From 0800, 18 April to 1020, 19 April, you steamed an observed distance of 403.6 miles. If your average RPM was 74, what was the slip?

- A. +7.0%
- B. -7.0%
- C. +8.0%
- D. -8.0%

Reference: Turpin and MacEwen, *Merchant Marine Officer's Manual*

3. Which certificate is only issued by the Coast Guard?

- A. Certificate of Documentation
- B. Safety Construction Certificate
- C. Cargo Gear Register
- D. Load Line Certificate

Reference: 46 CFR 67.21-1

4. Which is a negotiated charter?

- A. Fixture
- B. Bill of Lading
- C. Conference agreement
- D. All of the above

Reference: McFarland, *Ship's Business and Cargo Loss and Damage*

5. You sight a vessel displaying a rigid replica of the international code flag "A." This vessel is

- A. less than 20 meters in length.
- B. not underway.
- C. engaged in diving operations.
- D. a sailing vessel.

Reference: COMDTINST M16672.2A

Answers

Engineer

1-B; 2-C; 3-C; 4-D; 5-D

Deck

1-D; 2-C; 3-A; 4-A; 5-C

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

Keynotes

Notice of Proposed Rulemaking and Supplemental Notice of Proposed Rulemaking

CGD 84-099A; CGD 84-099, Operation of a Vessel While Intoxicated

Summary: The Coast Guard is proposing regulations designed to reduce alcohol and drug use in recreational vessel operation. The Coast Guard Authorization Act of 1984, enacted October 30, 1984, provides civil and criminal penalties for an individual who is intoxicated while operating a vessel, as determined under standards prescribed by the Secretary of the Department in which the Coast Guard operates. This Notice proposes standards for determining intoxication caused by alcohol or drugs, either based on a percentage of alcohol in the blood, resulting from blood or breath tests, or on observations of the individual's demeanor or performance. Because this Notice modifies a Notice of Proposed Rulemaking published in the Federal Register on May 23, 1986 (51 FR 18902) that applied primarily to commercial vessels, it is also a supplemental notice to that Notice of Proposed Rulemaking. This supplemental proposal would expand those proposed rules (51 FR 18902) to include all vessels. For vessels used for recreational purposes the federal BAC standard would conform to state BAC standards for intoxication where enacted. These proposals are based on indications that alcohol and/or drugs are involved in a substantial number of recreational boating casualties. The proposals are intended to reduce boating accidents caused by intoxication.

Dates: Comments must be received on or before May 11, 1987.

Addresses: Comments should be submitted to Commandant (G-CMC/21), (CGD 84-099A), U.S. Coast Guard, 2110 Second Street, SW, Washington, DC 20593. Comments will be

available for examination at the Marine Safety Council (G-CMC/21), Room 2110, U.S. Coast Guard Headquarters, at the address above, between the hours of 8:00 a.m. and 3:00 p.m., Monday through Friday, except holidays.

For further information contact: Mr. Carlton Perry, Boating Safety Division (G-BBS/43), Office of Boating, Public, and Consumer Affairs, U.S. Coast Guard, 2100 Second Street, SW, Washington, DC 20593; telephone (202) 267-0979, between 9:00 a.m. and 3:00 p.m. Monday through Friday, except holidays.

Supplementary information: On May 23, 1986, the Coast Guard published an Advance Notice of Proposed Rulemaking in the Federal Register (51 FR 18900). The purpose of the Advance Notice was to solicit information and views on the problem of intoxicant use by individuals operating recreational vessels and the appropriate means of prescribing a standard for determining intoxication.

Interested persons are invited to submit written views, data, or arguments on these proposed rules. Persons submitting comments should include their names and addresses, identify this Notice (CGD 84-099A) and the specific section of the proposal to which their comments apply, and give reasons for each comment. Persons desiring acknowledgment that their comments have been received should include a stamped, self-addressed envelope. The proposal may be changed in light of the comments received. All comments received by the expiration of the comment period will be considered before final action is taken on this proposal. No public hearing has been scheduled, but one may be held at a time and place to be set in a later notice in the Federal Register, if requested by persons raising a genuine issue and it is determined that the rulemaking will benefit from oral presentations.

U.S. Department
of Transportation
**United States
Coast Guard**

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