PROCEEDINGS
OF THE MARINE SAFETY COUNCIL

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COVERS

FRONT COVER: The mascot trademark of the Inland Waterways Safety and Health Association's Smart Duck Club is pictured on our front cover. See the article on this positive approach to a safety problem on page 3 of this issue.

BACK COVER: The big, fast trailership S.S. *Lurline* built by the Sun Shipbuilding and Dry Dock Co. for charter to Matson Navigation Co. is shown. The 700-foot ship is destined for service between the West Coast and Hawaii. *Photo courtesy Sun Shipbuilding and Dry Dock Co.*

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OF THE

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Lieutenant (jg) A. W. Vander Meer, Jr., Editor

BE A SMART DUCK!

Safety programs can be positive. Quite frequently, however, lessons are taught in a negative way. "Wear your safety shoes or you'll break your foot," we may be told; or "take off your rings while working or you'll lose a finger." Although those statements point out valuable safety practices, it may be that they have less than maximum impact because of their negative overtones. The Inland Waterways Safety and Health Association has instituted a safety program which stresses the positive. Its effectiveness hinges on two things: first, it creates a sense of pride in the wearing of proper safety equipment; second, it publicizes men who, because of a near miss, can be the most effective spokesmen for the safety program. The program is called the Smart Duck Club.

The idea for the Smart Duck Club grew out of an accident. In early October 1972, a deckhand was working on an underway barge when he accidentally slipped overboard. He was wearing a heavy coat and a Coast Guard approved work vest. The rest of the crew did not notice his absence for about 15 minutes. When they did discover that he was missing, a radio message was sent out to all boats in the area to be on the lookout for a man in the water. It was nearly an hour later that the man was spotted and taken aboard another towboat. Having spent a considerable period of time in cold water, the man was in shock when rescued. A Coast Guard helicopter rushed him to the hospital where he recovered the following day. The conclusion was inescapable. But for wearing a Coast Guard approved work vest the man would have drowned.

If the man had drowned, he would have joined 78 others who, in 1972 lost their lives by drowning in industrial accidents as a result of accidental falls into the water. The wearing of Coast Guard approved work vests could have played a major role in saving the lives of many of the victims.

It was determined that by devising a method of publicizing this incident, relations with employees could be improved, constructive shop talk could be stimulated, and most importantly, lives could be saved. The idea was presented to the annual meeting of the Inland Waterway Safety and Health Association in late October 1972. A program was approved and money was appropriated to institute it. It was called the Smart Duck Club.

Sponsorship of the Club is open to any maritime industry employer who requires the wearing of Coast Guard approved work vests by his employees when they are exposed to a danger of falling overboard. Membership in the Club is open to any employee who, recognizing the potential danger on his job, wore a Coast Guard approved work vest which prevented his death by drowning due to an accidental entry into the water.

The first two Smart Duck Club awards were presented to Mr. Larry Bordelon of the Amerian Commercial Barge Lines and Mr. Charles Felder of the Chotin Transportation Corporation at the Water Resources Congress in New Orleans in February 1973. To date, 10 more members have been admitted into the Club. The following is a breakdown of the

(*Continued on page 13.*)

A copy of the certificate of membership in the Smart Duck Club.

DEVELOPMENTS IN VESSEL OPERATIONAL SAFETY

Lt. Cdr. K. E. Wadman, U.S. Coast Guard [1]

This article addresses a subject which has long occupied the attention of the Coast Guard, mariners, shipowners, and, most recently, environmentalists—Vessel Operational Safety.

Although there are many facets to this complex subject, this article is confined to three areas in which recent improvements have been made. These are: 1) Vessel Bridge-to-Bridge Radiotelephone; 2) The New International Rules of the Road and, 3) Vessel Traffic Schemes in International Waters.

Bridge-to-Bridge Radiotelephone

Although the recently passed Vessel Bridge-to-Bridge Radiotelephone Act and the implementing regulations have been occuping our immediate attention, the concept of vessels exchanging information essential to safe navigation by voice radio is not new. In many geographical areas of the United States, there are existing vessel communication system which for many years have been using voice radio telephone, thus carrying out the navigation safety intent of the new act long before it was ever enacted into law by Congress. The operators of vessels in these areas have become thoroughly familiar with the value of this form of communications as an aid to safely meeting and passing with a high degree of assurance of the intentions of the other vessel. Domestic shipboard voice radio systems have been in operation since the 1930's and have proven to be a practical aid to safe navigation. So, we recognize that there are various bridge-to-bridge radiotelephone systems in operation, and they are effective in their respective areas. The greatest potential for increased navigation safety, however, can be realized only when all communications of this type are integrated into one system using one common language for one common purpose. This is especially true because of the relatively recent use of our waterways by vessels from other parts of the world.

In the spring of 1964, a joint Coast Guard-Federal Communications Commission committee on bridge-to-bridge radiotelephone was established. The task of this committee was to determine the need for enactment of a law which would require a navigational communications system that could be operated from the pilothouses of approaching vessels. Increased vessel speed and size indicated very strongly that such a system was required to provide an increase in vessel navigation safety consistent with modern technological advances. On 22 July 1965, this committee made public a preliminary proposal which later was to be adopted into law.

The legislation originally proposed by the Coast Guard and FCC committee is essentially the same as that finally adopted by Congress as Public Law 92–63 signed by the President on 4 August 1971, which, incidentally, was the one hundred eighty-first anniversary of the United States Coast Guard. The implementation of this Act is expected to contribute significantly in several areas of vital concern to us all—safety of life and property afloat and ashore, prevention of pollution of the environment, and improvement in the economic efficiency of navigation on U.S. waters.

In recent years, it has become obvious that there is an urgent need to improve marine safety on United States waters. Following many collisions between vessels, the question is frequently asked by those investigating these mishaps—"if the vessels involved had been equipped with radiotelephone on a common frequency capable of the exchange of navigational information, would the collision have occurred?" In many cases, the answer is no! Time after time during these investigations, this same question is asked, and the answer is frequently the same. We need an effective means of communicating the intentions of vessels approaching each other over and above the signals provided in the rules of the road!

The value of a vessel-to-vessel communications system was clearly demonstrated during World War II when it was used extensively by the allies. Constant maneuvering by combat vessels made necessary an ability to effectively communicate between ships. The system adopted was called TBS (talk between ships) and operated basically on the same principle as the bridge-to-bridge system now

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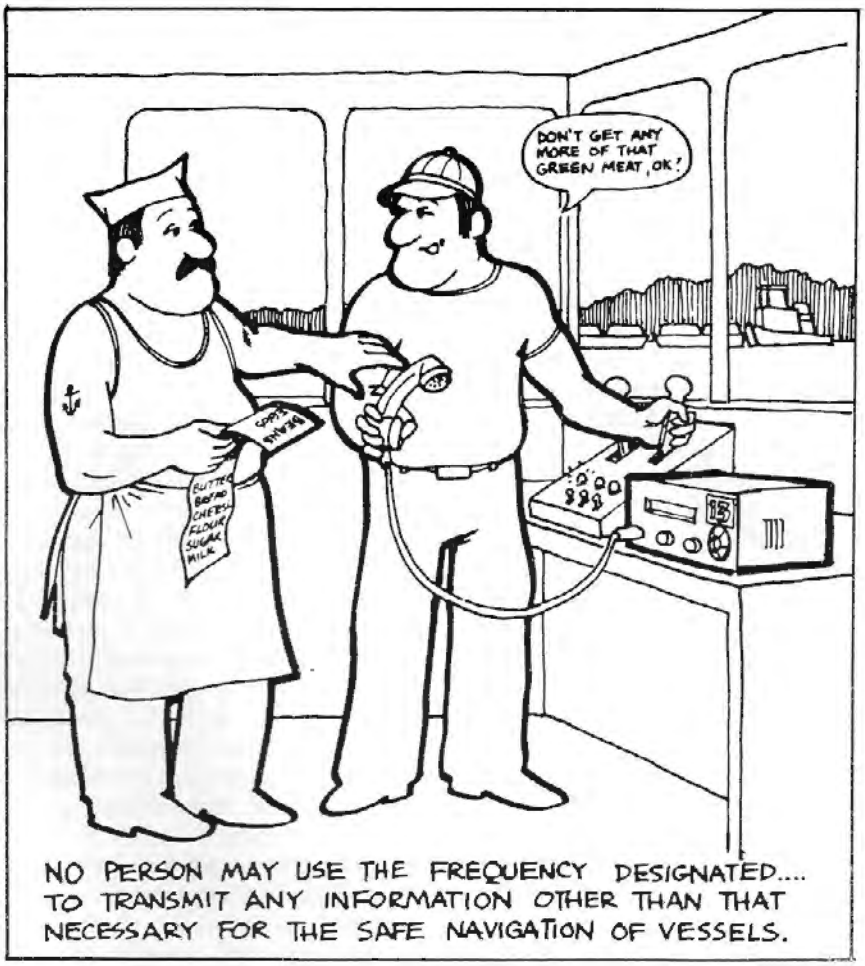
available for major shipping in all our waters.

With the adoption of the requirements of the new Bridge-to-Bridge regulations, basic shortcomings of the rules of the road for various waters may be effectively overcome by the proper use of the radiotelephone. Where any doubt under the rules exists, vessels operating on a common radio net have the ability to immediately clarify these doubts.

Considerable effort was devoted to the development of regulations which implement the requirements of the Bridge-to-Bridge Radiotelephone Act. Operational and technical regulations, prepared in Coast Guard Headquarters and by the Federal Communications Commission respectively, were promulgated shortly before the first of July of 1972 and required that vessels specified in the act be provided with bridge-to-bridge radiotelephone equipment by January 1973. In developing these regulations, a process which under the best circumstances takes a considerable amount of time and technical and operational expertise, problems pointed out by both the marine industry and others directly concerned with the safety of navigation had to be resolved. In short, the work which resulted in the passing of Public Law 92–63 and the regulations necessary to implement the requirements of that law included considerable reliance on the expertise of all segments of the marine industry and government.

The requirement to participate in bridge-to-bridge radiotelephone applies to all power-driven vessels of 300 gross tons or over, passenger vessels of 100 gross tons and over, commercial towboats of 26 feet in length or over and dredges or other craft engaged in operations restricting or affecting navigation in channels and fairways. Specifically, these vessels are required to be capable of transmitting and receiving on the VHF frequency 156.65 MHz (channel 13). As provided in the regulations, the power-driven vessels affected are required to maintain a listening watch on the



An illustration from the Coast Guard's publication "Bridge-to-Bridge Radiotelephone Communication, Law and Regulations" (CG–439).

designated frequency whenever underway and to transmit on that frequently if the master or other person in charge of the vessel considers it necessary to exchange navigational information with other vessels. Geographically, these regulations apply to vessels operating on the navigable waters of the United States inside the line which divides international waters from waters where the inland rules of the road are employed.

A large percentage of U.S. vessels were already equipped with multi-channel VHF radiotelephone gear and thus were only required to add the ability to monitor channel 13, the bridge-to-bridge frequency. Such an installation typically consists of a multi-channel transceiver and a single-channel guard receiver. Regulations now in effect require a continuous guard on channel 13 (156.65 MHz), as well as a guard on channel 16 (156.8MHz), the national distress, safety and calling frequency.

It's anticipated that the line-of-sight characteristic of VHF radio with its built-in range limitation, together with a transmitting power output limited by the FCC to 1 watt, will reduce interference by other relatively nearby stations and eliminate any problems of frequency overloading and the "capture effect", or blocking out, experienced when the more powerful of two VHF transmitters is keyed.

While the use of portable equipment satisfies the requirement of the

law, communications experts believe that permanently installed VHF equipment will result in superior antenna radiation patterns and thus a more reliable communications capability.

Since the first of January when the Act became effective, there have been relatively few problems with its implementation. Any difficulties have been associated with procurement and installation of required equipment, and minor technical problems with multiple VHF equipment installations. Also, there have been limited difficulties with shore based stations having a power output greater than that of the vessels, thereby causing interference in some geographical areas.

Because maximum improvement in navigation safety due to the use of radiotelephone may be obtained by having a system which is broadly used, very few exemptions to the requirements of the act have been granted. Those that have been granted are for vessels operating in locations remote from other vessel traffic; in other words, those vessels which, even if fitted with the VHF gear required by the regulations, would have no one with whom to communicate. Vessels operating on the Great Lakes have been exempted from the requirements of the Act, as there is already a system of voice radiotelephone communication in use which meets the intent of the Act on those waters.

Because of the short period the requirements of the Act have been in effect, it is impossible to recite statistics on the relationship between vessel collisions and bridge-to-bridge radiotelephone at this time. However, information brought out when the Act and its implementing regulations were being developed, indicates that a substantial increase in safety, attributable to the use of voice bridge-to-bridge radiotelephone, can be expected.

The Revised Rules of the Road

In October 1972, there was concluded in London a conference on the revision of the International Regulations for Preventing Collisions at Sea, commonly referred to as the International Rules of the Road.

Although basic concepts of the 1960 Rules have been retained, their wording, format and order of presentation have been considerably altered. Those areas which have traditionally been the cause of consternation on the part of both the mariner and the courts have, hopefully, been clarified.

In the Regulations as now revised, the utmost effort was made to avoid ambiguities and formulations giving rise to varying interpretations. This enhancement of clarity has been achieved to a large extent through the use of clearer and more detailed definitions and the addition of strictly technical requirements in annexes. For the first time, the revised Regulations take full cognizance of the steadily increasing use of radar in ships as well as a recognition of the presence of huge vessels which maneuver with considerable difficulty. Also taken into account is the use of future technological advances which will add to increases in the safety of navigation.

Generally, it was attempted to provide International Rules of the Road which induce the mariner to take action at the earliest possible moment and at the same time, Rules for action to be taken in "last minute" situations were set down. The results of these attempts are largely reflected in new Rules dealing with assessment of risk of collision and action to avoid collision.

The establishment of traffic separation schemes, regulating maritime traffic in congested or converging areas, has for several years contributed to a decreasing number of collisions in such areas, and this has been reflected by the inclusion of a Rule regulating the conduct of ships navigating in or near such schemes.

New ships with increased speed have led to revised Rules on increased visibility ranges for navigation lights and requirements for more efficient sound-signalling apparatus, again enabling action to be taken at longer distances. In addition, provisions have been made for action to be taken when, in restricted visibility, the presence of other ships has been detected by radar only, that is, before any fog signals have been heard.

To preclude unnecessarily burdening the Regulations with technical details necessary for contractors, shipbuilders and inspection authorities, such details are now a part of Annexes giving scientifically based requirements for lights, shapes and sound-signalling apparatus.

Present rules require the use of moderate speed in reduced visibility but, no mention is made concerning speed in clear weather. The revised regulations require a vessel at all times to proceed at a safe speed so that effective action can be taken to avoid collision.

Also considered in determining safe speed are the state of the visibility, traffic density, vessel maneuverability, weather conditions, sea conditions and radar limitations.

The revised rules, in addition to containing more detail on the maintenance of a proper lookout, require the use of all available means to determine if risk of collision exists. When radar is fitted, its use is mandatory.

The starboard hand rule is retained for vessels navigating narrow channels with the additional requirement of keeping as near to the outer limit of the channel as is safe and practicable. A specific provision prohibits a vessel from crossing a narrow channel if it impedes the passage of a vessel which can navigate only within such channel. A Vessel overtaking in a narrow channel will be required to use a new set of signals consisting of two prolonged blasts followed by either one or two short blasts to indicate the side he intends to pass on. The vessel being overtaken indicates agreement by sounding a prolonged, a short, a prolonged, and a short blast on the whistle.

Vessels using traffic separation schemes will be required to proceed

in the appropriate traffic lane in the general direction of traffic flow for that lane, keeping clear of separation lines or zones. Insofar as they can, vessels must avoid crossing traffic lanes. When crossing a lane is necessary, it must be accomplished as nearly as possible at right angles to the general direction of traffic flow. Vessels not using a traffic separation scheme will be required to avoid it by as wide a margin as conditions permit. Other provisions concern entering and leaving lanes, inshore traffic zones, fishing, anchoring, small vessels, sailing vessels and general precautions.

The rules concerning the conduct of vessels in overtaking, head-on and crossing situations remain substantially the same as the present rules. The rule concerning the stand-on, or privileged vessel, has been modified to require action by that vessel "to avoid" collision when the giveway, or burdened vessel, is so close that collision cannot be avoided by the action of the give-way vessel alone. In addition, the stand-on vessel may take avoiding action as soon as it becomes apparent that the give-way vessel is not taking appropriate action in accordance with the rules.

The rights-of-way among various categories of vessels has been combined into a single rule for clarity and ease of reference with new provisions for vessels constrained by their drafts. Vessels not under command and those restricted in their ability to maneuver are given the highest priority, with vessels constrained by their drafts, vessels engaged in fishing, and sailing vessels given priority in that descending order. Seaplanes on the water will be required to keep well clear of all vessels and avoid impeding their navigation, but in circumstances where risk of collision exists the normal rules of the road apply.

The term "vessels restricted in their ability to maneuver" includes any vessel engaged in: laying, servicing or picking up a navigation mark, submarine cable or pipeline; dredging, surveying or underwater operations; replenishment or transferring persons, provisions or cargo while underway; launching of or recovery of aircraft; minesweeping operations; and towing operations such as renders a vessel unable to deviate from its course.

Vessels constrained by their drafts are defined as power-driven vessels which are severely restricted in their ability to deviate from the course being followed because of the vessels' draft in relation to the available depth of water. New provisions for the display of lights and day shapes have been developed to indicate a vessel constrained by its draft.

In restricted visibility a vessel which detects by radar the presence of another vessel in a developing close-quarters situation (or where risk of collision exists) is cautioned, when taking avoiding action, to avoid alterations of course to port for a vessel forward of the beam or alterations of course towards a vessel abeam or abaft the beam. A study of past collisions reveals that a large percentage of these casualties could have been avoided if one or both vessels had not turned to port when they had neared the point of extremis. Every vessel which hears apparently forward of her beam the fog signal of another vessel will not be required to stop her engines as required by present rules. The rule has been modified to provide that, except where it has been determined that a risk of collision does not exist, every vessel "shall reduce her speed to the minimum at which she can be kept on her course." Taking all her way off if necessary and "in any event navigate with extreme caution until danger of collision is over."

Visibility requirements of navigation lights have been changed. In vessels of 50 meters (164 ft.) or more in length, masthead lights must be visible at 6 miles, sidelights, sternlights and other colored lights at 3 miles. In vessels of 20 meters (65.6 ft.) but less than 50 meters, masthead lights must be visible at 5 miles and other lights at 2 miles. For vessels of less than 20 meters, but 12 meters (39.4 ft.) or more in length, masthead lights must be visible at 3 miles and other lights at 2 miles. In vessels of less than 12 meters, masthead lights must be visible at 2 miles, sidelights at 1 mile and all other lights at 2 miles.

Air-cushion vessels operating in the nondisplacement mode will be required to exhibit an all-round flashing yellow light in addition to lights normally required of power-driven vessels underway.

Lights and day shapes for fishing vessels remain as they are at present, with the exception that the masthead light abaft the fishing identification lights, for vessels of 50 meters (164 ft.) or more in length, will be shown higher than presently required. Additional signals for vessels fishing in close proximity to one another may also be exhibited. These signals are similar to those provided in the Convention on the Conduct of Fishing Operations in the North Atlantic, 1967 and may be used by fishing vessels to indicate when they are shooting (setting) their nets, hauling their nets, when a net has come fast upon an obstruction, when pair trawling and when using purse seine gear.

When towing, power-driven vessels will be required to display, in addition to the usual navigation lights for vessels engaged in towing, a yellow light above the sternlight. When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a single power-driven vessel for lighting purposes and are to exhibit the usual navigation lights of power-driven vessels. Whenever a vessel is engaged in a towing operation that renders the vessel unable to deviate from her course such vessel will display the lights or shapes prescribed for vessels restricted in their ability to maneuver in addition to the usual towing lights or shapes.

New provisions have been included for vessels engaged in dredging or underwater operations when they are restricted in their ability to maneuver. In addition to the display of lights or day shapes for such vessels, when an obstruction eixsts, such vessels will

also be required to exhibit special lights or shapes to indicate the side on which the obstruction exists. Whenever the size of the vessel engaged in diving operations makes it impracticable to exhibit the prescribed day signal, a rigid replica of the International Code flag "A" must be exhibited.

Sound signals for use in restricted visibility are generally the same as the 1960 Rules.

Light signals to supplement whistle signals when maneuvering were permitted under the 1960 Regulations. Such a provision remains, with the modification that permissive operation of the maneuvering light signal may be repeated as appropriate when altering course to port or starboard and when operating astern propulsion.

The use of the danger signal of five short and rapid blasts on the whistle has been extended to any situation in which a vessel fails to understand the intentions or actions of another vessel or is in doubt whether sufficient action is being taken by another vessel to avoid collision. Under the 1960 Rules only a privileged vessel could use this signal. The warning signal may also be supplemented by a light signal using five short and rapid flashes in a group. This change adopts the concept now used in inland U.S. waters.

Any vessel which complies with the present 1960 International Regulations concerning navigation lights, may be exempted from compliance with the new Regulations, providing that its keel was laid before entry into force of the 1972 Regulations, for a period of: 4 years for lights and ranges and the installation of lights with color specifications prescribed in Annex I; 9 years when repositioning masthead lights on vessels of 150 meters (492.1 ft.) or more in length is required, or the requirements of sound signal appliances. A permanent exemption from repositioning of lights as a result of conversion from imperial to metric units, or the repositioning of masthead lights on vessels of less than 150 meters (492.1 ft.) in length is also provided.

Each rule has been considered in detail, and the principles contained in the present rules have been retained. Any changes or additions to the rules are the result of the work of hundreds of experts from throughout the world. Hopefully these efforts will result in a universal increase in vessel navigation safety.

Traffic Separation Schemes

Traffic separation schemes in International waters are recommended vessel routes endorsed by Intergovernmental Maritime Consultative Organization (IMCO) member nations and therefore internationally recognized. They are normally developed by littoral states, following guidelines set down in the IMCO publication on Ships Routing, and then submitted to IMCO for adoption. As far as is known, only Great Britain has announced national regulations specifically requiring compliance with these schemes by British vessels. Other nations, including the United States, consider that presently effective navigation statutes are sufficient to require compliance by ship masters.

Historically, modern maritime traffic separation schemes probably date from the development of the North Atlantic Routes. These were devised more than 100 years ago to provide separate routes whereby eastbound and westbound ships could take maximum advantage of prevailing winds for the shortest and safest of crossings.

In 1911, U.S. and Canadian interests adopted separate upbound and downbound lanes on Lake Superior and Lake Huron. By 1949, similar lanes were in use in all five of the Great Lakes. These lanes have made a significant contribution to the fact that the waters of the Great Lakes are among the world leaders in vessel navigation safety.

A study of vessel collision statistics will readily affirm that the problem of vessel collisions is most prevalent in congested and converging areas such as at the ends of the North Atlantic Routes and that collisions most often occur between meeting rather than crossing or overtaking vessels.

In 1965, the Coast Guard invited maritime interests to study this problem. As a result of their recommendations, a set of sealanes were established in the spring of 1967 at the approaches to New York Harbor and Delaware Bay.

Recommendations by similar maritime committees, resulted in sealanes at the approaches to San Francisco, Chesapeake Bay and this past July in the approaches to Narragansett and Buzzard Bays. Additionally, coastal seaplanes have been implemented through the Santa Barbara Channel of Southern California with the dual purpose of separating traffic and providing safe passage through areas of densely populated oil exploration rigs.

Many international traffic schemes have been developed elsewhere from the Baltic Sea to the Persian Gulf and eastward.

The concept of vessel traffic separation schemes is relatively simple and can be compared to divided highways. These schemes are presented to the mariner both by means of Notices to Mariners and by being printed on navigation charts. The schemes include traffic lanes in which vessels proceed in only one direction which are removed from one another by either a separation zone or a separation line, depending on the amount of sea room, much like the median of a highway. Where there are converging sealanes, or in areas of particular hazard, the use of circular precautionary areas, in which mariners are urged to exercise special caution are employed.

There are some basic requirements that must be met prior to the establishment of vessel traffic schemes. For example: if the shipmaster is going to be required to navigate his vessel within specific geographic boundaries, then he must be provided with aids to navigation which will permit him to ascertain his position with sufficient accuracy to keep within the traffic lane. Also, because huge vessels are

expected to be the major users of these separation schemes, there must necessarily be sufficient depth of water and width for such vessels to navigate. Hence, the traffic lanes cannot be established where there are uncleared sunken wrecks, shoals or other dangers.

Because masters must be left with the final decision as to the safest and most efficient routes for their vessels, international routing schemes are voluntary, and their effectiveness therefore depends on the degree of acceptance by individual ship masters. To this end, all schemes which impinge upon international waters are submitted to IMCO for adoption. This has resulted in worldwide uniformity and broad acceptance of traffic separation schemes.

Conclusion

In conclusion those associated with the marine industry have long recognized the direct economic relationship between safely conducted marine operations and profitable business. The safety of navigation is expected to be greatly enhanced by the use of Bridge-to-Bridge Radiotelephone, the new International Rules of the Road and Vessel Traffic Separation Schemes. This is particularly significant when you consider the thousands of vessels operating in international waters, coastal U.S. waters, the Great Lakes, the Intracoastal Waterway and the Inland rivers which will be participating in these important safety programs. Their adoption is another positive step in our continuing efforts to encourage marine safety on all waters which are navigated by U.S. vessels.

ED. NOTE: *This article is adapted from a speech delivered before the Marine Section, National Safety Congress in October, 1973.*

Grinding Wheel Care and Safety

The bursting of a grinding wheel while in use may be due to rough handling, improper mounting or improper storage of the wheel before it is placed on the spindle. Such accidents are usually very serious. It is important that all grinding wheels be handled and stored in such a manner that they will not be subjected to injury. They should never be left on a floor or thrown into a pile. If one should be dropped or damaged in any way, it should be tested immediately for defects; and if found defective, removed from service at once.

Extreme care should be exercised in the storage of wheels. They should be stored in dry places and on edge in racks. Straight sided shellac and rubber bonded wheels, ¾ inch or less in thickness, must be laid flat on a straight surface to prevent warpage.

As soon as a new wheel is received from the manufacturer, it should be unpacked and carefully inspected for any damage suffered in shipment. It should be given the "ring" test for flaws or cracks, since most defects are not visible to the eye. This test should also be used immediately before mounting a new or used wheel on the spindle, especially if the wheel has been stored for some time.

To make this test, suspend the wheel free and clear, and tap it gently with a light implement such as a wooden screwdriver handle for light wheels, and a wooden mallet for heavy ones. If a wheel is sound, it will give forth a clear, metallic tone when tapped. If defective, there will be no ring. Wheels bonded with organic material do not give forth quite the same metallic sound as do vitrified and silicate wheels. All wheels must be dry and free from sawdust when given this test, otherwise the sound will be deadened.

Never force the work against a cold wheel. Apply it gradually, giving the wheel an opportunity to warm. This lessens the chance of breakage.

Do not take chances by operating a wheel that is loose on the spindle or out of balance.

Never allow a wet grinding wheel to stand partly immersed in water. The water-soaked portion may throw the wheel dangerously out of balance.

Keep the tool rest as close to the wheel as possible without touching it. Never adjust the rest while the wheel is in motion.

Never place the tool rest beneath the center line of the wheel.

Do not grind the ends of heavy bars and shapes against the side of a wheel. Use the face of the wheel. Never strike the wheel a side blow.

Grinding on the flat sides of straight wheels is hazardous and should be done only in case of necessity and then only when using extreme care. Employees grinding on wheels must be equipped with suitable goggles or be protected by a safety guard adjusted to protect them.

—Courtesy National Safety Council

Captains or Masters? Ships or Boats? Upbound or Downbound

Dear Billy,

Your letter expressing confusion over nautical lingo on the Great Lakes is not too difficult to understand.

Yes, there are boats and there are ships. Similarly, there are captains and there are masters. And it is entirely possible for ships to be outward bound or homeward bound at the same time they are either upbound or downbound.

You might say that people connected with the Great Lakes shipping industry have kind of become bilingual since the opening of the St. Lawrence Seaway in 1959. It's no secret that the nautical lingo of the Great Lakes differs considerably from that on the high seas. And it's a situation that has been known to cause raised eyebrows on a navigation bridge, in a shipping office, in a pub . . . or any other place where a saltwater sailor may happen to meet his freshwater counterpart.

While the saltwater seafarer thinks of "going to sea," a Great Lakes seaman thinks of "going sailing" or "steamboating"—and on a "boat" rather than a "ship." A lakes seaman similarly thinks of seagoing as "sailing on saltwater" or "sailing down the coast."

An oceangoing vessel, regardless of its size, should always be referred to as a "ship." To the saltwater sailor, a "boat" is simply the lifeboat hanging in its davits on the "boat deck."

Lake freighters, on the other hand, have been called "boats" for more than 100 years and "boats" they continue to be, even though their lengths have reached 1,000 feet.

It has also become tradition throughout the Great Lakes-Seaway region to identify oceangoing ships as "salties" and lake freighters as "lakers." Perhaps, Billy, a special note of caution is due at this point because we know of at least one incident when a ship's master tried to discourage use of the term "salty."

This occurred when the lake freighter *Cadillac* passed the Norwegian motor vessel *Ranella* during the wee hours of morning off Michigan's Keweenaw Peninsula in Lake Superior. The communication between the vessels went like this:

"Steamer *Cadillac* calling the downbound 'salty' off Eagle Harbor." To which the master of the Norwegian ship replied, "This is the motor vessel *Ranella* to the upbound 'freshy' off our starboard bow." The conversation that followed was polite but short.

The term "master" is appropriate on the high seas, but is rarely heard on the lakes. And the duties of this senior officer are to "command" his ship. On the lakes, the senior officer is almost always referred to as the "captain" and he "sails the boat" or "has a boat to sail." Both master and captain are commonly called the "old man" by their respective crews, but never when within earshot.

On the lakes, the "helmsman" or "quartermaster" is known as the "wheelsman." The "lookout" is a "watchman" and lesser deck ratings are "deck watch" or "deck hands." Thus, the deck crew spends the season "wheeling," "watching" or "decking." As for the engine room, the terms "oiling" or "firing" apply to both salities and lakers.

Somehow, Billy, all freighters sailing the lakes are either "upbound" or "downbound."

On a "trip" (the term "voyage" is seldom heard on the lakes) from Lake Erie to Lake Superior and return this is easy to visualize, but other lake trips are more confusing, especially if you attempt to correlate the status of upbound and downbound with the status of whether a vessel is light and going after a cargo or whether it is loaded and coming back.

For instance, a "light" vessel going to Lake Superior for iron ore or grain is always upbound and coming back loaded is always downbound. But, a light vessel sailing from Buffalo to Chicago for cargo is upbound while sailing westward and sometimes southwestward on Lake Erie, is upbound while sailing northward on Lake Huron, but is downbound on the same trip sailing southward on Lake Michigan. Part of the upbound traffic on Lake Superior is headed well to the southward and part of the downbound traffic is headed well to the northward.

Another apparent anomaly of the lakes is the relative position of standard upbound and downbound courses which most vessels adhere to.

On most ocean vessels, both the deck and engine departments are housed in one main superstructure. On lakers, the deck department is known as the "forward end" and the engine department as the "after end."

To all saltwater seamen, ocean vessels have their "main deck" at "deck line," or at the level of the top of the sheer strake. On the lakes, however, this is the "spar deck." The "main deck" of a laker is at a level of the tops of the side tanks, or one deck below the spar deck. While the bottom of the cargo hold on salties is the "cargo deck" or "hold deck," this deck on lakers is simply the "tank top."

We might also point out that ocean ships have "passageways" and "ladders" while their lake counterparts have "hallways" and "stairs." There is one minor exception. Lakers do have a "boarding ladder" while the salties have a "gangway."

When vessels transit locks of the Seaway, Welland Canal or Sault Ste. Marie, they "lock up" or "lock down." An upbound passage is toward higher water levels. Never mind that freighters locking upbound through the Welland Canal toward Lake Erie are proceeding almost due south.

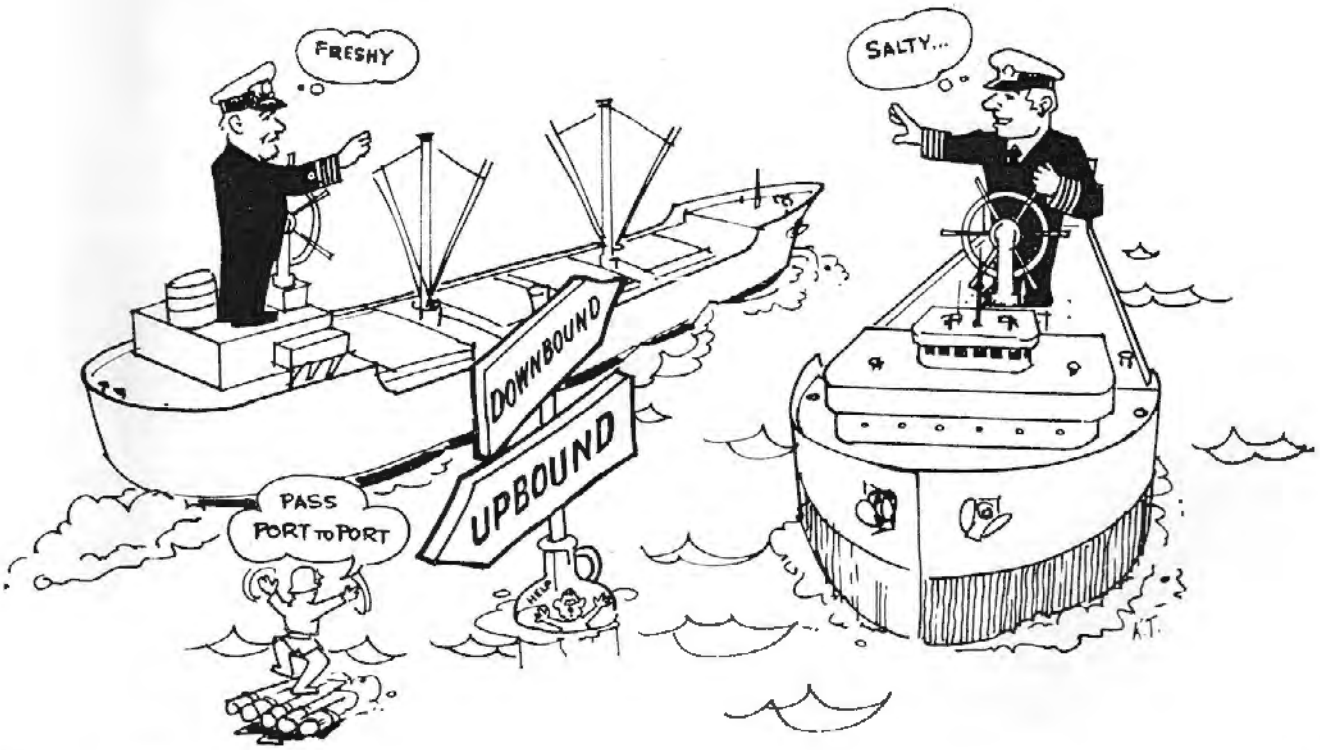
In contrast to the ancient sailing concept of going to the right and passing port-to-port, the recommended courses are so laid out in Lakes Huron and Superior that upbound vessels are close to the U.S. shore and downbound vessels are 10 miles or so further out in the lake, creating the impression, at least to the newcomer, of passing to the left, or starboard-to-starboard. However, the reason for keeping the heavy laden vessels out in deeper water is readily apparent.

In narrow channels or rivers, vessels keep to the right and pass port-to-port, or, as lake sailors say, "pass on the one-whistle side."

Finally, Billy, we can advise that it is entirely appropriate to ask ocean-going seamen about rough weather sailing on the high seas and to ask lake sailors about a good blow on the lakes. On the other hand, never attempt to tell lake sailors about how tough sailing may be "on the coast" or North Atlantic. Save your breath.

Best Wishes,
Captain Jack.

—Courtesy *Minnesota's World Ports* Seaway Port Authority of Duluth



SAFETY AND THE LIFEBOAT RADIO

By Alex Wowczuk, Radio Electronics Officer, Delta Lines

It is a good idea for additional shipboard personnel to be familiar with automatic operation of the lifeboat radio in case Sparks doesn't make the scene. The purpose of automatic operation is to enable survivors not familiar with the Morse code to put out a distress signal which hopefully will be heard by at least two stations in contact with each other so they can take radio bearings to locate the lifeboat. This method is certainly no substitute for two-way communication, but it is better than nothing. The purpose of this article is to present a simplified discussion to familiarize personnel with the procedure.

Learning something new can often be made easier by comparing it to something old which is similar. For example, putting the lifeboat radio into operation is easier when you think of it as being similar to setting up a radio in your own quarters. The three basic considerations in both cases are: (1) securing the radio in a convenient place; (2) hooking up the antenna, ground, and power; and (3) operating the controls. Let's take them one at a time.

Securing the Radio in a Convenient Place

Getting the lifeboat radio into the boat and securing it in place can be a hassle if you're not familiar with a few points:

a. Know where the lifeboat radio is stowed and how to remove it from its mount. It's a little clumsy and heavy for one man to handle easily, so get someone to help you carry it to the boat.

b. A line is attached to its handles in the event it has to be lowered into a boat. The radio is supposed to be watertight and is supposed to float to prevent loss in case it accidentally falls into the sea.

c. After it's in the boat, remove the front cover by unsnapping the 10 fasteners and then secure it at a convenient place on a seat (thwart), using the hooks and straps stowed on its top. Crisscross the straps across each side of the set and place the hooks to grab the fore and aft edges of the seat. Then tighten the straps to secure the radio firmly in place.

Hooking up the Antenna, Ground, and Power

Putting up the antenna is the most involved part of the procedure, but it is not difficult, although at first it may appear to be. Hooking up the ground and power is easy:

a. The antenna consists of a 15-foot rod that installs into a socket at the top of the set and four wires connected to two clamps that are placed on the rod near its top. The wires are separated outward to the sides of the boat via four insulators secured by four ropes. The components are all stowed on the back of the front cover that was previously removed. Proceed as follows: (1) assemble the rod by snapping together the 11 sections of tubing, which are held together by internal flexible cables fastened with springs (take care not to pull these cables too far apart to avoid breaking the springs); (2) slip both clamps over top section of rod and slide down several inches and tighten the thumbscrews; (3) untie and straighten out the four bundles of rope, insulators and wires that are attached to the two clamps so they will hang free when you raise the rod; (4) remove the artificial antenna (can with lamp on top) by pulling it out of the antenna socket and install the rod antenna in its place; (5) separate the four ropes and lash two to each side of the boat to equally brace the antenna. The wing-nut terminal on the antenna socket is used to connect a wire antenna, instead of the rod, in case the rod gets lost or broken. Additional wire for this purpose is also stowed inside the cover. But remember, and this is important, the wing-nut terminal on the antenna socket is not a ground connection.

About the Author

Mr. Alex Wowczuk began to become interested in radio theory and Morse Code in Chicago while he was in high school. By the time he had graduated he already had gotten an FCC commercial radiotelegraph license. He went to sea in the Merchant Marine in 1945 as a third radio operator. After his marriage in 1958, Mr. Wowczuk remained ashore working as a technical writer for about 6 years. In 1968 he returned to sea with Delta Lines where he is presently radio electronics officer aboard a freighter. He has an associate degree in electronics engineering.

b. To hook up the ground, all you have to do is unwind the 20-foot length of wire stowed at the bottom of the set and which has a lead sinker at one end, make sure it is connected to the front panel on the other end, and drop the sinker over the side into the water.

c. To hook up the power, all you have to do is remove the two crank handles that are secured on the top of the set, shove them into the holes on on each side of the set, and get old "Hoss" to start cranking. Make sure he's cranking in the direction of the arrows painted on the side. Crank at about 65 rpm which is about 1 turn every second. There are no batteries in this set.

Operating the Controls

In automatic operation the set continuously sends distress signals on the short-range distress frequency (500 KC) to alert ships and stations nearby, followed by transmissions on the long-range distress frequency 8364 KC) to alert distant shore (Coast Guard) stations. Before you place the set in automatic operation, you have manually to tune the antenna to operate on 500 KC and also on 8364 KC. Here is how you do it:

a. Have one or two men steadily crank the generator in direction of arrows at no less than one turn per second and place the MASTER SWITCH in MANUAL 500 KC position. Hold the key down and turn the 500 KC ANTENNA TUNING knob until the 500 KC ANTENNA INDICATOR lamp lights. Keep turning it to get maximum brightness. Release the key. Then press the key again to see if the 500 KC ANTENNA INDICATOR lights. If it does, the antenna is tuned for 500 KC operation. If it doesn't, try readjusting the 500 KC ANTENNA TUNING knob and also check to make sure that the ground connection on the front panel is tight.

b. With the generator still being cranked, place the MASTER SWITCH in MANUAL 8364 KC position, hold the key down again, and this time turn the 8364 KC ANTENNA TUNING knob to get maximum brightness on the 8364 KC ANTENNA INDICATOR. Release the key. The set is now tuned for 8364 KC operation as well as 500 KC operation. Keep cranking. The set is ready to transmit automatic distress signals.

c. Place the MASTER SWITCH in the AUTOMATIC position. The set will start sending distress signals on 500 KC for 75 seconds and then automatically switch over and send distress signals on 8364 KC for 45 seconds. This sequence is repeated as long as the set is being cranked. You can monitor the sequence by watching the two indicator lamps. The 500 KC lamp will show a series of 12 dashes, three dots, three dashes, three dots (SOS). The dashes are each four seconds long and are separated by one second intervals. The dashes are followed by the SOS signal repeated three times. The set then automatically switches over to operation on 8364 KC. SOS will be repeated three times and will be indicated on the 8364 KC lamp followed by a long dash lasting 30 seconds. The purpose of the long dash on 8364 KC is to enable distant short-wave stations to get a bearing on you. On 500 KC the 12, four-second dashes serve to trigger the auto alarm system aboard nearby ships and afterwards can be used by them to take bearings. Hopefully, two or more ships in the vicinity will hear the distress signals and establish contact with each other to get a fix on you.

So, if anybody asks you if you know anything about using the lifeboat radio, tell them, S H O (*S*ecuring, *H*ooking up, *O*perating).

SMART DUCK

(*Continued from page 3.*)

total membership by industries:

Inland Waterways Transportation	5
Corps of Engineers	3
Dredging	3
Marine Construction	1

Further information about the Smart Duck Club may be obtained by writing the Inland Waterway Safety and Health Association, c/o W. Fassler, 225 Baroone St., New Orleans, LA 70112.

The Inland Waterway Safety and Health Association and its members are congratulated for the development and initiation of this positive safety program in a serious safety problem area. Of course falls overboard are to be avoided if humanly possible, and it is therefore to be hoped that the Smart Duck Club's membership remains small. But it is also hoped that every man who works in danger of falling into the water is a prospective member because he wears a Coast Guard approved work vest. Smart Ducks are better than dead ducks. ¢

PROPOSED CHANGES TO THE COAST GUARD'S DANGEROUS CARGOES REGULATIONS

By Lt. Cdr. C. L. Keller, Office of Merchant Marine Safety, Cargo and Hazardous Materials Division

In Hazardous Materials Regulations Board docket number HM–112, published in the Federal Register, a complete revision of the Coast Guard's Dangerous Cargoes Regulations in Title 46 of the Code of Federal Regulations, Part 146 (Subchapter N) appears as a Notice of Proposed Rulemaking. The revision involves changes in both format and snbstance (see box). What follows is a capsule description of the major revision proposed to Subchapter N.

Those people who are primarily concerned with water transportation are familiar with the Coast Guard Dangerous Cargo Regulations in 46 CFR 146 and are aware that they list requirements for the carriage of hazardous materials by water that must be met both by the shipper who sends a shipment into the transportation system and the carrier. What is often not understood is that these Coast Guard regulations in Subchapter N that are directed at the *shipper,* namely classification of the material, the use of the proper package, the marking and labeling on the package and the documentation on the shipping papers, are based on similar regulations issued by the Department of Transportation Hazardous Materials Regulations Board for land transportation that are in Title 49 Parts 170 thru 189. It is essential that these regulations and the Coast Guard Regulations in 46 CFR 146 be consistent; otherwise, differing requirements for land and water movements of these materials would soon lead to chaos.

As presently arranged the Hazardous Materials regulations for water and land are in separate publications with a great deal of duplication. Shown in Figure 1 are excerpts from both 49 CFR and 46 CFR 146 for ethylene oxide. The excerpt from Title 49 (for land) is from the list of hazardous materials, which provides the user with the proper class, label and a reference to the proper package to be used. The excerpt from 46 CFR 146 is from one of the tables which list each hazardous material, providing the user with the proper class, label, the authorized packages and permitted stowage location aboard cargo vessels, passenger vessels, or ferry vessels. Figure 1 demonstrates the degree of similarity in the two regulatory formats.

To eliminate this duplication the U.S. Coast Guard in late 1971 proposed to the Department of Transportation

CURRENT▶49 CFR 170-189

ARTICLE	CLASS	PACKAGING	LABEL	MAXIMUM QUANTITY/ CONTAINER RAIL EXPRESS
ETHYLENE OXIDE	F. L	NO EXEMPTION 173, 124	RED	300 POUNDS IN CYLINDERS

CURRENT▶46 CFR 146 FORMAT

ARTICLE	PROPERTIES	LABEL	REQUIRED CONDITIONS FOR TRANSPORTATION			
			CARGO VESSEL	PASS. VESSEL	FERRY VESSEL	R.R. FERRY VESSEL
ETHYLENE OXIDE	OILY VOLATILE LIQUID	RED	STOWAGE: ON DECK ON DECK PACKAGING: STEEL BARRELS	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED

Figure 1

CURRENT▶49 CFR 170-189

ARTICLE	CLASS	PACKAGING	LABEL	MAXIMUM QUANTITY/ CONTAINER RAIL EXPRESS
ETHYLENE OXIDE	F. L	NO EXEMPTION 173, 124	RED	300 POUNDS IN CYLINDERS

NEW 49 CFR FORMAT

HAZARDOUS MATERIAL	CLASS/ NO.	LABEL(S)	IMCO CLASS/ LABEL(S)	PACKAGING/ EXEMPTIONS	MAXIMUM QUANTITY IN ONE PACKAGE P AIRCRAFT	MAXIMUM QUANTITY IN ONE PACKAGE C AIRCRAFT	STOWAGE/ SEGREGATION VESSELS
ETHYLENE OXIDE	FLAMMABLE LIQUID 35	FLAMMABLE LIQUID	FLAMMABLE GAS	NO EXEMPTION 173, 124	NOT PERMITTED	300 POUNDS IN CYLINDERS	1,2, PASSENGER VESSELS: 1 SEGREGATION SAME AS FOR FLAMMABLE GASES

Figure 2

Hazardous Materials Regulations Board a plan, which was eventually approved, to consolidate the two sets of regulations in one volume of the Code of Federal Regulations. At the same time, the Federal Aviation Administration also was giving consideration to combining its shipper regulations for hazardous materials with those in Title 49.

The result of these actions, when finished, will be one set of regulations dealing with the intermodal shipment of packaged hazardous materials in all four modes—rail, highway, water, and air.

To combine the regulations, the existing format of Title 49 will need modification. Shown in Figure 2 is the proposed new format. Shown above the new format is the current Title 49 format. Arrows are used to depict how the old relates to the new.

Figure 3 illustrates how the current format of 46 CFR 146 relates to the new format. Again arrows are used to depict this relationship. At this point let's look in some detail at the new format since it will be a key element in the new regulations.

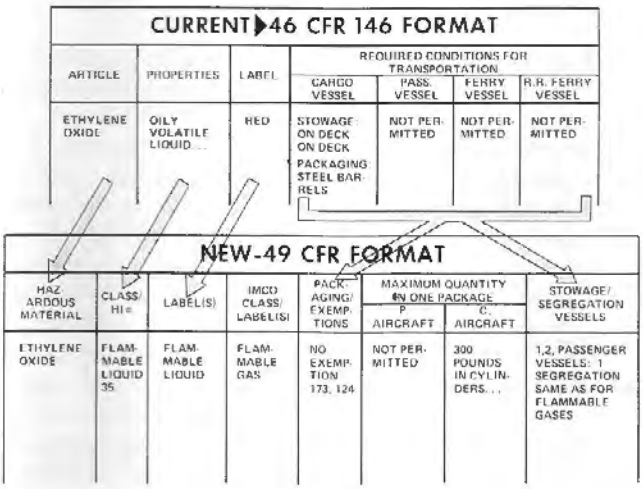


Figure 3

The first three columns of Figure 3 are self explanatory and are equivalent to the current columns in both 49 CFR and 46 CFR 146. One exception is the number 35 shown in column 2. This number refers to a Hazard Information System under development within DOT under which a given number will reflect some of the hazardous properties currently shown in the Tables in 46 CFR 146. The number is included on Figure 3 only to demonstrate its proposed placement.

The fourth column, headed "IMCO CLASS/ LABELS," is a listing of the class and label recommended by the Intergovernmental Maritime Consultative Organization (IMCO) for ethylene oxide. Note that IMCO and the Department of Transportation now classify ethylene oxide differently, thereby requiring different marking and labeling on the exterior of the package. Since ships calling upon our ports originate from many different nations it is essential that some degree of flexibility exist; consequently the U.S. Coast Guard will permit packages marked and labeled in compliance with either the Department of Transportation or Intergovernmental Maritime Consultative Organization standards within U.S. waters. While discrepancies between the Department of Transportation and Intergovernmental Maritime Consultative Organization classifications are rare, they do exist; and one was chosen as an example to illustrate the importance of column 4 in the proposed regulations.

Column five—titled "Packaging/Exemptions"—is an exact carry-over from Title 49. The Coast Guard regulations in 46 CFR 146 list prescribed packages in a much different manner from those in Title 49, but the requirements, with minor exceptions, are the same. Selecting the proper package to use for a given material is a responsibility of the shipper. Consequently, the regulations on this subject have been retained in the format currently used by the Department of Transportation in Title 49, the one most familiar to shippers.

Column seven—titled "Stowage/Segregation Vessels"—is devoted entirely to the requirements for water transportation. It represents a consolidation of columns headed "Required Conditions for Transportation" in the current tables used by the Coast Guard in 46 CFR 146. Rather than treat four categories of vessels, namely cargo vessels, passenger vessels, ferry vessel and railroad car ferry, as is the current practice, it was determined that only two categories were needed. The cargo vessel designation is retained, but the other three categories are combined and treated as passenger vessels.

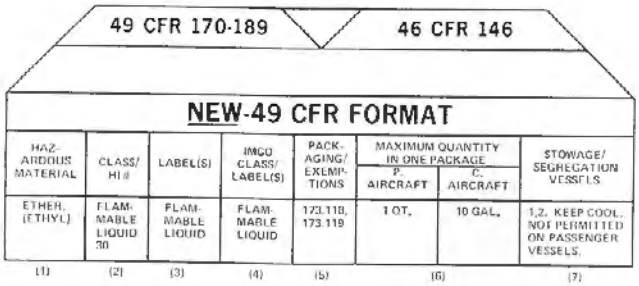
The entry "1,2" in column 7 indicates that ethylene oxide is permitted to be stowed both on deck and below deck on board a cargo vessel. The numeral 1 refers to "on deck" and the numeral 2 refers to "below deck". The entry, "Passenger vessel 1" indicates that ethylene oxide may be stowed only on deck on board a passenger vessel. If the entry "1,2" were not followed by any statement referring to passenger vessel then the indicated stowage locations would be permitted on board both cargo vessels and passenger vessels.

Column 7 also contains specific information that may be needed to address the particular hazardous material in question. For example, ethylene oxide is considered by the United States to be a flammable liquid while IMCO considers it a flammable gas. A flammable gas is treated quite differently than a flammable liquid for purposes of segregating from other classes of hazardous materials. In order to assure compliance with IMCO storage standards, the Coast Guard will treat it as a flammable gas for segregation purposes. A statement to this effect appears in column 7, on Figure 3.

Column 7 may contain other vital information for the proper stowage of the hazardous material in question. For

example, column 7 might read "stow away from powdered metals" if the regulated material reacts dangerously with powdered metals.

Another example of a specific hazardous material is ethyl ether illustrated in Figure 4. In this example both IMCO and the United States agree on the class for the material. Thus the same information appears in column 4 that appears in columns 2 and 3. Column 7 shows that ethyl ether can be stowed both on deck and below deck on board a cargo vessel, but it is not permitted to be carried on board a passenger vessel.



HAZARDOUS MATERIAL	CLASS/ HI#	LABEL(S)	IMCO CLASS/ LABEL(S)	PACKAGING/ EXEMPTIONS	MAXIMUM QUANTITY IN ONE PACKAGE P. AIRCRAFT	MAXIMUM QUANTITY IN ONE PACKAGE C. AIRCRAFT	STOWAGE/ SEGREGATION VESSELS
ETHER, (ETHYL)	FLAMMABLE LIQUID 30	FLAMMABLE LIQUID	FLAMMABLE LIQUID	173.118, 173.119	1 QT.	10 GAL.	1,2. KEEP COOL. NOT PERMITTED ON PASSENGER VESSELS.
(1)	(2)	(3)	(4)	(5)	(6)		(7)

Figure 4

The examples thus far discussed are from the proposed commodity list. However, there is information aside from the commodity list in the proposed regulations. Figure 5 illustrates the proposed format for presentation of other information in Title 49. Each transportation mode will have a part in the regulations in which to deal with particular requirements that are not covered elsewhere. For example, the water mode requires certain segregation among the various classes of hazardous materials, a dangerous cargo manifest, supervision of stowage by a competent person, ventilated holds in some cases, and so on. These requirements will be addressed in Part 176.

49 CFR FORMAT

Part	Description
170–171	General.
172	Commodity List, labels, marking, shipping papers.
173	General Packaging.
174	Air.
175	Rail.
176	Water.
	A. Carrier Requirements.
	B. Stowage.
	C. Segregation.
177	Highway.
178–179	Packaging.

Figure 5

The present Coast Guard regulations regarding segregation are proposed to be revised extensively. To conform to international standards the segregation recommended by IMCO is proposed for adoption.

The IMCO recommendations for the required segregation among the various hazardous materials are much simpler than the present Coast Guard requirements which contain almost as many exceptions as general rules. The IMCO segregation recommendations can be described by a matrix, an excerpt of which is shown in figure 6. The complete matrix would show the degree of separation required between each class of hazardous material. There

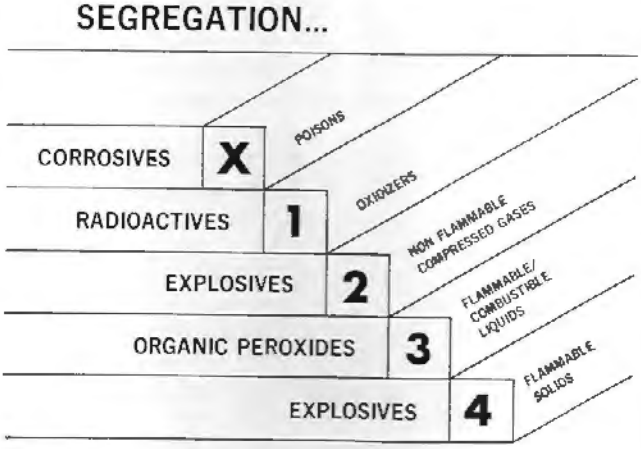


Figure 6

are five categories of separation denoted by the letter X and the numbers 1 thru 4. The letter X indicates that no separation is required.

The numeral 1 in the matrix stands for "away from", as illustrated in Figure 7. In practice "away from" means sufficient separation to ensure that no inter-action of the two materials can occur while in transportation.

The numeral 2 refers to "separated from". To achieve this degree of segregation, the packages must be stowed in separate holds as is shown in Figure 8. The packages in question may be stowed in adjacent holds separated by a deck provided the deck is resistent to fire and liquid.

The numeral 3 refers to "separated by an intervening complete hold". Figure 9 illustrates how this degree of segregation is achieved. Again, any intervening decks must be resistent to fire and liquid.

The numeral 4 refers to "separated longitudinally by an intervening complete hold", and Figure 10 illustrates how this degree of segregation is achieved.

The segregation terms just described relate primarily to break-bulk vessels; these terms have to be modified to cover the situation aboard containerships, roll on/roll off vessels and barge carrying vessels. The present regulations do not clearly treat segregation as applied to these vessels. The proposed rules would specifically address these vessels.

In summary, then, the proposed revisions of the Coast Guard's Dangerous Cargo Regulations would:

1. Combine Subchapter N with its counterpart in the land regulations, which covers similar material; and
2. Adopt the IMCO Code recommendations for stowage and segregation on hazardous materials.

The Coast Guard has prepared a 30–45 minutes tape/slide presentation describing this major change which

is available at local Coast Guard District Offices for presentation to interested groups. Any questions regarding the availability of this program or any aspect of this major change can be addressed to Commandant (G–MHM/83) U.S. Coast Guard, Washington, D.C. 20590. Questions by phone are also encouraged at (202–426–1477).

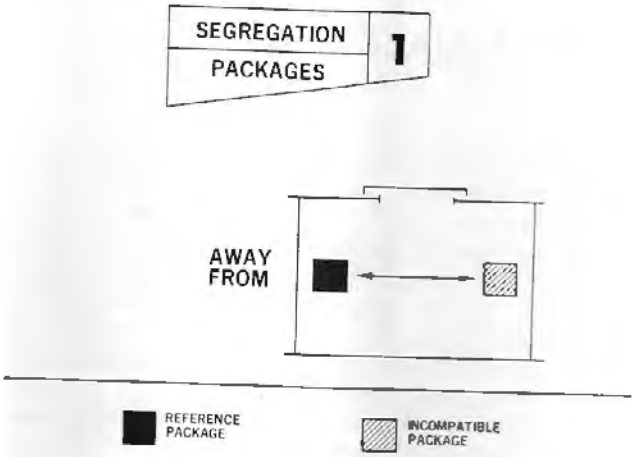


Figure 7

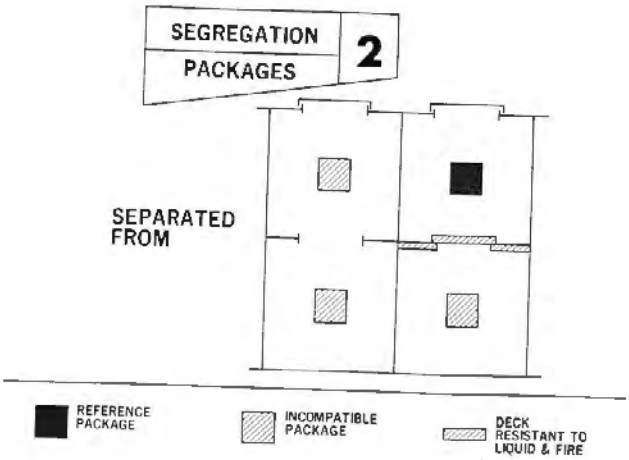


Figure 8

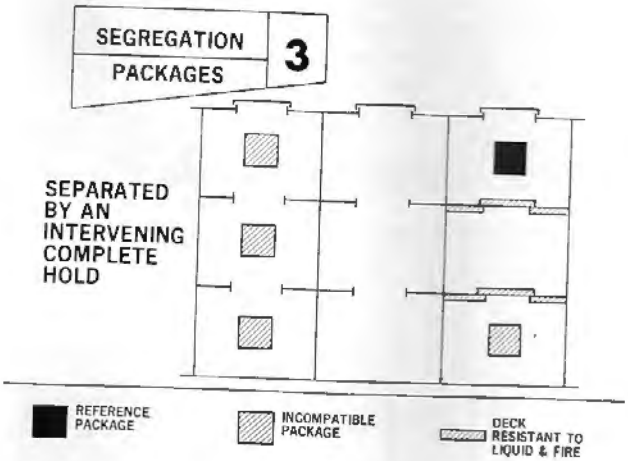


Figure 9

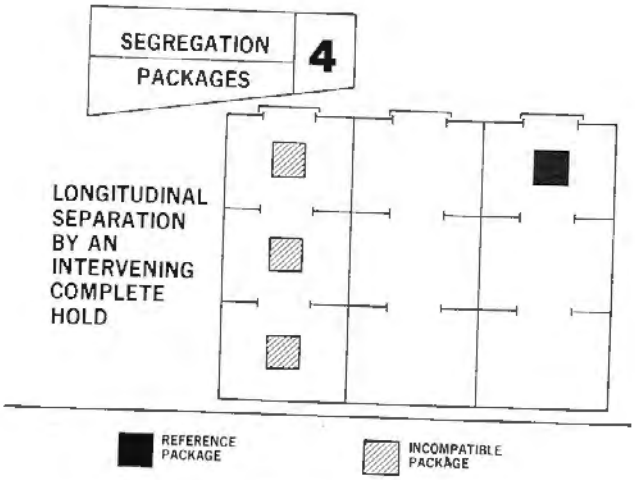


Figure 10

The substantive changes discussed in this article include the adoption of the IMCO recommendations for stowage and segregation of dangerous goods.

Shortly after the 1960 SOLAS Convention, IMCO began work on a Code covering a recommended procedure for the safe handling and transporting of dangerous goods. The Code has now been adopted by many maritime nations as the basis for their national regulations.

The United States assisted in the development of the Code. Although it differs from our present regulations, the Code achieves a comparable degree of safety for the transportation of hazardous materials through a simpler approach, leading to a set of standards more universally applied and understood.

The changes outlined in this article will be published in the Federal Register in late January or early February as Docket No. HM–112 by the Hazardous Materials Regulations Board of the Department of Transportation.

Persons who have evinced a continuing interest in the Coast Guard's regulatory programs will be mailed a copy of the Marine Safety Council Public Hearing Agenda (CG–249) dated June 1, 1973 which helps explain many of the proposed changes to the Coast Guard regulations. Due to its size, the official Federal Register Document will not automatically be distributed to our regular subscribers. Persons having a demonstrable interest in the proposal may obtain a copy of the relevant Federal Register part by writing Commandant (G–MHM), U.S. Coast Guard, Washington, D.C. 20590.

ANNUAL STATISTICS OF CASUALTIES

Annually the U.S. Coast Guard releases to the public a statistical summary of casualties involving commercial vessels. This year the following brief explanation of the statistics is given in an attempt to make them more meaningful.

Casualties involving commercial vessels are required to be reported to the Coast Guard whenever the casualty results in the following:

(a) Actual physical damage to property in excess of $1,500.

(b) Material damage affecting the seaworthiness or efficiency of a vessel.

(c) Stranding or grounding.

(d) Loss of life.

(e) Injury causing any persons to remain incapacitated for a period in excess of 72 hours; except injury to harbor workers not resulting in death and not resulting from vessel casualty or vessel equipment casualty.

The statistical summary represents casualties to commercial vessels which meet the above criteria. It is important to note that the summary represents casualties reported to Coast Guard Headquarters in fiscal year 1972.

This statistical tabulation is intended to summarize the casualty experience for the entire commercial fleet. Because this summary is so all-encompassing, the use of the statistics may lead to erroneous conclusions unless the limitations of the data are well understood.

Since the limitations are dependent upon the parameters of a problem, the below listed office will gladly assist in quantifying those limitations for each specific need.

Comments and recommendations for changes or improvements to these data are solicited. Remarks should be addressed to Commandant (G–MIS), U.S. Coast Guard, Washington, D.C. 20590.

STATISTICAL SUMMARY OF CASUALTIES TO COMMERCIAL VESSELS [1]

1 July 1972 to 30 June 1973

Fiscal year 1972

	Nature of casualty																
	Collisions: crossing, meeting and overtaking	Collisions, while anchored, docking or undocking	Collision, fog	Collisions with piers and bridges	Collisions, all others	Explosion and/or fires—cargo	Explosion and/or fires—vessel's fuel	Explosion and/or fire—boilers, pressure vessel	Explosion and/or fire—structure, equipment, all others	Grounding with damage	Grounding without damage	Founderings, capsizings and floodings	Heavy weather damage	Cargo damage	Material failure—structure and equipment	Material failure—machinery and engineering equipment	Casualty not otherwise classified	Totals
Number of casualties	207	203	24	536	294	18	27	5	97	312	338	140	61	16	327	425	78	3,108
Number of vessels involved	631	528	60	1,027	439	24	28	6	103	464	455	180	72	18	368	454	120	4,977
Number of inspected vessels involved	191	171	24	316	169	13	6	5	21	141	194	28	48	15	130	183	31	1,686
Number of uninspected vessels involved	440	357	36	711	270	11	22	1	82	323	261	152	24	3	238	271	89	3,291
PRIMARY CAUSE																		
Personnel fault:																		
Pilots—State	10	26	1	21	9	0	0	0	0	9	22	0	0	0	0	0	2	90
Pilots—Federal	9	6	1	24	4	0	0	0	0	5	21	0	0	0	0	0	0	70
Licensed officer—documented seaman	33	33	13	65	36	2	0	0	2	54	44	7	2	2	4	12	3	312
Unlicensed—undocumented persons	149	64	13	222	66	0	2	0	5	127	79	37	1	0	10	6	26	807
All others	14	19	8	24	14	6	1	0	7	9	18	3	1	3	13	4	10	154
Error in judgement—calculated risk	0	1	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	5
Restricted maneuvering room	0	2	0	2	0	0	0	0	0	3	0	0	0	0	0	0	0	7
Storms—adverse weather	5	26	3	29	30	0	0	0	1	38	25	19	51	8	20	0	4	259
Unusual currents	1	7	0	44	3	0	0	0	0	1	5	1	1	0	0	0	0	63
Sheer, suction, bank cushion	11	1	0	6	2	0	0	0	0	4	14	1	1	0	0	0	0	40
Depth of water less than expected	0	1	0	4	0	0	0	0	0	18	62	0	1	0	0	0	1	87
Failure of equipment	7	16	0	26	2	2	14	3	29	13	17	11	0	0	120	387	3	650
Unseaworthy—lack of maintenance								1	2	3	2	13	1	0	18	4	0	44
Floating debris—submerged object	0	1	0	6	112	0	0	0	0	7	3	1	0	0	2	0	2	134
Inadequate tug assistance	3	2	0	10	3	0	0	0	0	1	2	0	0	0	0	0	0	21
Fault on part of other vessel or person	385	307	21	492	143	6	1	0	6	149	124	51	11	3	152	27	30	1,908
Unknown—insufficient information	4	26	0	52	13	8	10	2	51	22	16	36	2	2	29	14	39	326

[1] See footnote at end of table.

STATISTICAL SUMMARY OF CASUALTIES TO COMMERCIAL VESSELS [1]

1 July 1972 to 30 June 1973

Fiscal year 1973

	Nature of casualty																	
	Collisions, crossing, meeting and overtaking	Collisions, while anchored, docking or undocking	Collision, fog	Collisions with piers and bridges	Collisions, all others	Explosion and/or fires—cargo	Explosion and/or fires—vessel's fuel	Explosion and/or fire—boilers, pressure vessel	Explosion and/or fire—structure, equipment, all others	Grounding with damage	Grounding without damage	Foundertings, capsizings and floodings	Heavy weather damage	Cargo damage	Material failure—structure and equipment	Material failure—machinery and engineering equipment	Casualty not otherwise classified	Totals
TYPE OF VESSEL																		
Inspected vessels:																		
Passenger and ferry—large	3	5		4	3			2	1	2	5	1	2	1	2	8		39
Passenger and ferry—small	9	6	3	6	13	1	1		3	17	8	7	2		15	53	1	145
Freight	22	47	8	78	43	4	1	2	4	21	57	4	30	12	75	83	12	503
Cargo barge	16	30		35	22	1			2	15	13	9	4	2	5	4	1	149
Tankships	10	20	2	31	29	5	1	1	4	19	62	2	7		21	26	7	247
Tank barge	120	63	7	148	45	2	2		5	66	47	4	3		11	5	8	536
Public			1	2	1											4		8
Miscellaneous	11	10	3	12	13		1		2	1	2	1			1		2	59
Uninspected vessels:																		
Fishing	52	29	5	18	46		13		40	103	63	51	9		99	171	28	728
Tugs	222	120	11	395	130	1	6		14	130	99	56	6	2	51	36	20	1,299
Foreign	36	86	10	39	14	2		1	2	18	51				4	12	5	280
Cargo	64	82	6	239	37	3			3	59	38	24	1	1	51	11	31	670
Miscellaneous	46	40	4	20	43	5	3		23	13	10	18	8		33	41	7	314
GROSS TONNAGE																		
300 tons or less	316	202	31	407	224	6	24		77	250	185	141	28	2	214	302	52	2,461
Over 300 to 1000 tons	139	100	8	301	74	5	1		7	74	51	23	3		43	12	39	880
Over 1000 to 10,000 tons	141	133	9	227	89	9	2	4	15	104	101	12	16	7	68	74	15	1,016
Over 10,000 tons	35	93	12	92	52	4	1	2	4	36	118	4	25	9	53	66	14	620
LENGTH																		
Less than 100 feet	262	180	24	329	166	7	22		70	209	162	127	24	2	177	286	40	2,087
100 to less than 300 feet	304	192	17	537	178	9	4	2	24	185	113	43	10	1	89	41	58	1,807
300 to less than 500 feet	27	52	3	47	33	4	1		3	27	50	8	10	4	28	34	3	334
500 feet and over	38	104	16	114	62	4	1	4	6	43	130	2	28	11	74	93	19	749
AGE																		
Less than 10 years	309	234	26	480	155	13	10		29	196	171	51	27	4	94	153	45	1,967
10 to less than 20 years	142	136	14	264	99	3	2	2	29	86	104	52	12	6	74	74	26	1,125
20 to less than 30 years	91	71	6	168	99	7	10	1	20	88	82	28	18	7	94	99	29	918
30 years and over	89	87	14	145	86	1	6	3	25	94	98	49	15	1	106	128	20	967
LOCATION OF CASUALTY																		
Inland—Atlantic	41	39	2	104	63	5	2	1	16	80	124	32	6	1	53	67	15	651
Inland—Gulf	90	44	8	165	81	3	6		28	81	111	36		1	47	29	15	745
Inland—Pacific	7	19	1	31	50	1	12		25	61	38	23	8	3	67	122	10	478
Ocean—Atlantic	4	10	2	1	4	1	2		3	9	7	13	17	4	40	27	11	155
Ocean—Gulf	7	5	1	3	12		2		7	3	2	5	5	1	13	6	2	74
Ocean—Pacific	7	4	4	2	22	1	2	1	7	23	4	12	21	5	47	126	6	294
Great Lakes	5	12	1	53	18			2	5	15	23	1	1		15	16	2	169
Western Rivers	41	58	5	155	23	5		1	5	32	16	17	1		30	10	13	410
Ocean—other	2	1		2	5		1			2		1	1		4	7	1	27
Foreign waters	3	11		22	16	2			1	6	13		1	1	11	15	3	105
TIME OF DAY																		
Daylight	93	120	14	271	166	15	19	2	48	149	173	83	32	8	199	298	44	1,731
Nighttime	105	80	8	246	120	3	8	3	43	147	143	48	25	7	91	105	30	1,212
Twilight	9	3	2	19	8				6	16	22	9	4	1	37	22	4	162
ESTIMATED LOSSES																		
Vessel	9,059	5,012	3,675	4,912	3,376	2,812	776	103	11,358	12,084	280	4,697	890	20	7,981	5,887	8,078	81,894
Cargo	889	136	5	1,240	3,066	423	1		796	6,065	18	435	1,076	180	908	320	1,282	16,839
Property	339	1,581	7	25,926	659	1,022	6		131	3,418	48	197	125	45	215	816	308	34,838
VESSELS TOTALLY LOST																		
Inspected	3	1		1		1				4		7	1		1			19
Uninspected	18	6	3	15	13	2	8		42	42		36	12		81	12	12	302

[1] Statistics concerning recreation and pleasure boating accidents are published in CG-357.

STATISTICAL SUMMARY OF DEATHS/INJURIES DUE TO A VESSEL CASUALTY [1]

1 July 1972 to 30 June 1973 Fiscal year 1973	Nature of casualty																
	Collisions crossing meeting and overtaking	Collision, while anchored, docking or undocking	Collision, fog	Collisions with piers and bridges	Collisions, all others	Explosion and/or fires—cargo	Explosion and/or fires—vessel's fuel	Explosion and/or fire—boilers, pressure vessel	Explosion and/or fire—structure, equipment, all others	Grounding with damage	Grounding without damage	Founderings, capsizings and floodings	Heavy weather damage	Cargo damage	Material failure—structure and equipment	Material failure—machinery and engineering equipment	Casualty not otherwise classified	Total
Number of casualties	9	4	3	9	6	4	6	0	6	3	0	21	4	0	20	7	1	108
Number of inspected vessels involved	0	2	2	5	0	4	1	0	2	0	0	0	0	0	7	2	0	25
Number of uninspected vessels involved	9	2	1	4	6	0	5	0	5	3	0	21	4	0	19	4	1	84
Number of persons deceased/injured	6/6	1/5	/6	19/10	17/2	2/3	/13	0	2/8	2/1	0	34/1	15/1	0	24/12	7/5	2/0	131/74
PRIMARY CAUSE																		
Personnel fault:																		
Pilots—state																		
Pilots—Federal																		
Licensed officer—documented seaman		1	1	2		1									1			6
Unlicensed—undocumented persons	7	1	1	3	2		2			3		12			4			35
All others						1												1
Error in judgment—calculated risk																		
Restricted maneuvering room																		
Storms—adverse weather				1	1							3	4		3			12
Unusual currents				1								1						
Shear, suction, back cushion																		
Depth of water less than expected																		
Failure of equipment							4								12	6		22
Unseaworthy—lack of maintenance												2			4			6
Floating debris—submerged object																		
Inadequate tug assistance																		
Fault on part of other vessel or person	2	2	1	2	3				2						2			13
Unknown—insufficient information						2			4			3				1	1	13
TYPE OF VESSEL INVOLVED																		
Inspected vessels:																		
Passenger and ferry—large																		
Passenger and ferry—small		/1	/2	/1											/2	5/		5/7
Freight				11/8					/1						/3	/1		11/13
Cargo barge																		
Tankships			/2			/1			1/									1/3
Tank barges						2/2	/2								/1			2/5
Public																		
Miscellaneous		/3																/3
Uninspected vessels:																		
Fishing	0/2			8/1	7/		/4		1/1	1/1		19/	6/		18/	1/	2/	63/9
Tugs		/1			/2		/1		/1	1/		7/1			2/2	1/		11/8
Foreign	1/4	1/							/5									2/9
Miscellaneous	5/0		/2		10/		/5					8/	9/1		4/4	/4		36/17
PARTICULARS OF PERSON DECEASED/INJURED																		
Papers of deceased/injured:																		
Licensed by Coast Guard		/1	/1	/1	1/		/1		1/			1/1			/1	2/		5/6
Documented by Coast Guard						/1	/2		/1	1/1					1/1	/1		2/7
No license or document	6/6	1/4	/5	8/9	16/2	2/2	/10		1/3	1/		33/	15/1		23/10	/4		106/56
Other—unknown—foreign				11/					/4							5/	2/	18/4
Status or capacity on vessel:																		
Passenger	1/	/2			3/				1/	0/1		4/	5/1		1/2	4/		19/6
Longshoreman—harbor worker						/1									2/2			2/3
Crewmember	2/6	1/3	/6	9/2	14/2	2/2	/7		1/7	2/		29/	10/		21/7	3/5	2/	96/47
Other	3/			10/8			/6		/1			1/1			/1			14/17
Activity engaged in:																		
Off duty			/2	3/	6/		/1		/4			3/						12/7
Deck Department duties	1/2	1/2	/3	4/2	5/1	2/2	/5		/2	1/		16/	5/		8/6	3/2		46/27
Engine Department duties	1/4	/1		1/			/2		1/1			3/			/1	/3		6/12
Stewards Department duties			/1	1/														1/1
Handling Cargo						/1			/1						1/2			1/4
Fishing					3/					1/		7/	7/1		14/2		2/	34/3
Drills																		
Passenger	1/	/2			3/		/5		1/			1/				4/		10/7
Other and unknown	3/			10/8	/1					0/1		4/1	3/		1/1			21/12
Location of Vessel:																		
At Anchor/Dock		1/1		/2	7/1	2/3	/4		/1			5/	3/		4/4	/3		22/19
Underway	6/6	/5	/6	9/	10/		/9		2/7	2/1		29/1	12/1		20/8	7/2	2/	99/46
Other				10/8														10/8
PART OF BODY INVOLVED																		
Head and upper limbs	/1	/1		/1											2/3			2/6
Back and lower limbs	/1		/1		/1										/2			/7
Chest	/4			1/	3/	/1									/1	/1		4/7
Extremities		1/2		1/			/4		1/2	/1			/1		/4	1/4		4/21
Illness				/1														/1
Drowning	6/				14/					1/		28/	9/		13/	5/		76/
Unspecified and miscellaneous		/2	/5	17/8	/1	2/2	/9		1/6	1/		6/1	6/		9/2	1/	2/	45/31

[1] Statistics concerning recreation and pleasure boating accidents are published in CG-357.

STASTICAL SUMMARY OF DEATHS ON BOARD COMMERCIAL VESSELS[1]

(Not Involving a Vessel Casualty)

1 July 1972 to 30 June 1973

Fiscal year 1973

	Nature of death																					
	Natural cause	Homicide	Suicide	Disappearance	Slips and falls—ladders	Slips and falls—gangways	Slips and falls—on deck	Slips and falls—other	Falls from vessel—into water	Falls into holds or tanks	Struck by objects; falling, dropped or moving	Exposure and asphyxiation	Struck against, crushed, bumped into objects	Operating machinery and tools	Burns and scalds (other than electrical)	Electrical shock and burns	Caught in lines, chains or wire ropes	Pinching and crushing	Heavy weather	Overexertion, sprains and strains	Cuts, lacerations, bruises and punctures	Alterations and misconduct	Unknown or insufficient information
CAUSE OF DEATH																						
Total: 333																						
20 Intoxication		2	1						16													
128 Physical Deficiency or Handicap	123				1	1			2			1										1
15 Unsafe Movement or Posture								2	12	1												
24 Psychological—immaturity, insanity		4	12						6			1										
33 Unsafe Practice					1			1	19	3	1	2			3		1	1				1
1 Violation of Law or Regulation		1																				1
70 Human Errors		1			5	2		1	40	2	9	3					1	6				
4 Decks—Slippery or Cluttered								1	3													
8 Weather Conditions					1				7													
Poor Maintenance or Housekeeping																						
Inadequate Lighting																						
Inadequate Rails or Guards																						
22 Failure of Equipment											16	2			1		1					
4 Inadequate Supervision									2	1		1										
Inadequate Life Preservers									2													
Inadequate Tools or Equipment																						
2 Inadequate Protective Equipment												1										
Improper use of Tools or Equipment									1													
2 Miscellaneous Causes																						
									1													1
TYPES OF VESSELS INVOLVED																						
Inspected Vessels:																						
23 Passenger and Ferry—large	14		2						7													
23 Passenger and Ferry—small	15							1	5			1					1					
91 Freight Ships and Barges	49	4	4		2	1		2	10	4	7	3						3				2
31 Tankships and Barges	15		1		2	1			3		3	4			2							
3 Public	1		1		1																	
11 Miscellaneous	2							1	2	1	3							1				1
Uninspected Vessels:																						
52 Fishing	9	4	2						36								1					
44 Tugs	7		3						26		7							1				
19 Foreign	5				3	1		1	4	2		2										
36 Miscellaneous	6								18		6	1			2		1	2				1
TIME OF DAY																						
184 Daytime	82	2	4		2	1		3	49	5	15	8			3		2	6				2
129 Nighttime	36	6	8		6	2		1	54	2	8	2			1			1				2
20 Twilight	5		1					1	8		3	1					1					
PARTICULARS OF DECEASED																						
Papers of Deceased:																						
47 Licensed by Coast Guard	27		3		1				7	1	4	4										
106 Documented by Coast Guard	50	3	6		3	2		1	27	2	5	4					1	1				1
153 No License or Document	41	3	4					3	73	2	13	2			3		2	4				3
27 Other—Unknown—Foreign	5	2			4	1		1	4	2	4	1			1			2				
Status or Capacity on Vessel:																						
35 Passenger	27		1						7													
39 Longshoreman—harbor worker	5	2			1			3	14	3	4				2		1	3				1
235 Crewmember	56	6	12		6	3		1	83	4	15	10			2		2	4				1
24 Other	5				1			1	7		7	1										2
Activity engaged in:																						
37 Off duty	21	2	4						5			1										
145 Deck department duties	34	3	6		5	1		2	64	4	11	8			2		2	3				1
28 Engine department duties	15		1		1	1			5		4	1										
16 Stewards department duties	12	1	1			1			1													
15 Handling cargo	1				1			2	1	2	3				1			3				1
16 Fishing	7								9													
Drills																						
49 Passenger	26	2	1					1	15	1	1						1	1				
27 Other and unknown	4				1				11		7	1			1							2
Location of vessel:																						
98 At Dock/Anchor	34	3	2		5	2		2	20	4	10	7			3			4				2
215 Underway	81	5	11		3	1		3	84	3	14	2			1		2	3				2
20 Other	8								7		2	2					1					
PART OF BODY INVOLVED																						
23 Head	1	1			2			3		2	12							2				
5 Back					1						2											
8 Chest		1									5				1		1					
4 Extremities										1	2							2				1
122 Illness	119				1	1						1										
119 Drowning	1		10		3	2			99	1	2						1					
52 Unspecified & miscellaneous	2	6	3		1			2	12	3	3	10			3		1	3				3

[1] Statistics concerning recreation and pleasure boating accidents are published in CG-357.

STATISTICAL SUMMARY OF PERSONNEL INJURIES ON BOARD ALL COMMERCIAL VESSELS [1]

(Not Involving a Vessel Casualty)

1 July 1972 to 30 June 1973
Fiscal year 1973

	Nature of injury																	
	Slips and falls—ladders	Slips and falls—gangways	Slips and falls—on deck	Slips and falls—other	Falls from vessel—into water	Falls into holds or tanks	Struck by objects; falling, dropped or moving	Exposure and asphyxiation	Struck against, crushed, bumped into objects	Operating machinery and tools	Burns and scalds (other than electrical)	Electrical shock and burns	Caught in lines, chains, or wire ropes	Pinching and crushing	Heavy weather	Overexertion, sprains, and strains	Cuts, lacerations, bruises, and punctures	Alterations and misconduct	Unknown or insufficient information
CAUSE OF INJURY																			
Totals: 1,168																			
28 Intoxication	3	1	6	5	2	----	----	----	----	----	1	----	----	2	----	1	1	6	----
22 Physical deficiency or handicap	7	----	3	3	----	----	----	----	----	----	----	----	----	----	----	3	----	4	2
39 Unsafe movement or posture	3	----	3	11	1	----	1	----	1	----	----	----	----	----	----	19	----	----	----
36 Psychological—immaturity, insanity	----	----	----	2	1	----	----	----	1	----	----	----	----	----	----	----	----	32	----
117 Unsafe practice	11	2	7	11	2	----	26	4	3	8	8	3	3	5	----	21	2	----	2
3 Violation of law or regulation	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	2	----
677 Human errors	109	16	85	81	4	7	94	----	29	27	38	1	37	68	3	35	29	----	14
55 Decks—slippery or cluttered	4	2	38	7	----	----	1	----	----	----	----	----	----	1	----	2	----	----	----
63 Weather conditions	3	----	14	9	----	----	11	----	1	----	1	----	1	9	12	2	----	----	----
10 Poor maintenance or housekeeping	2	----	3	2	----	----	1	----	----	----	1	----	----	1	----	----	----	----	----
1 Inadequate lighting	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
5 Inadequate rails or guards	----	----	----	2	----	----	----	----	----	----	1	----	----	2	----	----	----	----	----
76 Failure of equipment	3	----	----	13	----	----	47	----	1	1	4	----	2	1	----	----	2	----	2
14 Inadequate supervision	1	----	----	1	----	----	7	1	----	----	----	----	2	1	----	1	----	----	----
Inadequate life preservers	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
3 Inadequate tools or equipment	----	----	----	----	----	----	3	----	----	----	----	----	----	----	----	----	----	----	----
9 Inadequate protective equipment	----	----	----	----	----	----	2	1	----	1	1	----	3	----	----	----	----	----	1
6 Improper use of tools or equipment	----	----	----	----	----	----	1	----	----	3	----	1	----	1	----	----	----	----	----
4 Miscellaneous causes	----	----	----	1	----	----	1	----	1	----	----	----	----	----	----	1	----	----	----
TYPES OF VESSELS INVOLVED																			
Inspected vessels:																			
40 Passenger and ferry—large	4	3	13	3	----	----	5	----	2	1	2	----	1	2	2	4	1	4	2
30 Passenger and ferry—small	----	----	9	5	1	----	3	----	1	1	2	----	1	4	1	----	2	----	----
773 Freight ships and barges	109	16	106	98	3	2	127	----	27	23	37	3	21	58	8	63	23	37	12
126 Tankships and barges	21	1	15	23	1	----	16	3	5	4	9	2	4	6	3	7	4	3	1
18 Public	6	1	1	2	----	----	----	----	----	2	1	----	----	----	----	2	1	----	2
36 Miscellaneous	1	1	5	2	1	1	4	1	----	----	3	----	1	6	----	8	----	----	2
Uninspected vessels:																			
38 Fishing	1	----	1	4	----	1	9	----	----	4	----	----	9	6	1	----	2	----	----
70 Tugs	3	----	7	7	3	1	24	1	2	2	1	----	8	7	1	----	2	----	1
4 Foreign	----	----	----	1	----	1	----	1	----	----	----	----	1	----	----	----	----	----	----
24 Miscellaneous	1	----	2	3	1	1	6	1	----	3	----	----	2	2	----	1	----	----	1
TIME OF DAY																			
797 Daytime	105	3	108	92	5	4	142	5	30	28	43	3	31	62	10	62	27	20	17
322 Nightime	39	19	43	48	4	3	43	1	5	10	10	2	16	24	4	20	8	22	1
49 Twilight	2	----	8	8	1	----	9	----	2	2	2	----	1	5	1	3	----	2	3
PARTICULARS OF PERSON INJURED																			
Papers of person injured:																			
155 Licenced by Coast Guard	17	2	16	22	----	2	20	2	7	6	14	2	3	13	4	8	1	6	1
874 Documented by Coast Guard	124	20	125	112	7	1	133	2	29	26	37	3	32	62	9	71	30	37	14
123 No license or document	4	----	15	9	3	4	31	1	1	8	4	----	13	15	1	5	4	1	4
16 Other—unknown—foreign	1	----	3	5	----	----	1	1	----	----	----	----	----	1	1	1	----	----	2
Status or capacity on vessel:																			
21 Passenger	----	----	7	4	1	----	1	----	----	----	1	----	----	2	1	----	2	1	1
13 Longshoreman—harbor worker	3	----	----	5	1	1	1	----	----	----	----	----	----	----	----	----	----	----	2
1113 Crewmember	142	22	149	139	8	6	188	6	37	38	52	5	48	85	14	83	33	42	16
21 Other	1	----	3	----	----	----	4	----	----	2	2	----	----	4	----	2	----	1	2
Activity engaged in:																			
87 Off duty	12	8	15	19	1	----	1	----	1	----	1	----	----	9	1	3	3	12	1
533 Deck department duties	61	5	73	66	4	3	120	3	18	11	7	----	40	36	11	45	11	15	4
322 Engine department duties	48	4	31	40	----	2	42	3	14	25	35	5	2	26	1	25	10	6	3
142 Stewards department duties	21	5	29	11	2	----	15	----	4	1	9	----	----	10	1	10	7	9	8
11 Handling cargo	2	----	----	4	1	1	1	----	----	----	----	----	----	----	----	----	----	----	2
21 Fishing	1	----	1	1	----	1	5	----	----	2	----	----	5	3	----	----	2	----	----
11 Drills	----	----	1	4	----	----	5	----	----	----	----	----	----	1	----	----	----	----	----
20 Passenger	----	----	6	3	1	----	1	----	----	----	1	----	----	2	1	----	2	1	1
21 Other and unknown	1	----	3	----	1	----	4	----	----	1	2	----	1	4	----	2	----	1	2
Location of vessel:																			
501 At dock/anchor	64	17	57	68	7	4	99	2	15	9	25	3	18	38	----	39	12	27	6
630 Underway	81	5	97	75	3	3	97	4	21	29	29	2	28	50	15	42	23	11	15
37 Other	1	----	5	5	----	----	7	----	1	2	1	----	2	3	----	4	----	6	----

[1] Statistics concerning recreation and pleasure boating accidents are published in CG-357.

STATISTICAL SUMMARY OF PERSONNEL INJURIES ON BOARD ALL COMMERCIAL VESSELS—Continued

(Not Involving a Vessel Casualty)

July 1972 to 30 June 1973
Fiscal year 1973

	Part of body injured:	Nature of injuries																	
		Slips and falls—ladders	Slips and falls—gangways	Slips and falls—on deck	Slips and falls—other	Falls from vessel—into water	Falls into holds or tanks	Struck by objects; falling, dropped or moving	Exposure and asphyxiation	Struck against, crushed, bumped into objects	Operating machinery and tools	Burns and scalds (other than electrical)	Electrical shock and burns	Caught in lines, chains or wire ropes	Pinching and crushing	Heavy weather	Overexertion, sprains and strains	Cuts, lacerations, bruises and punctures	Alterations and misconduct	Unknown or insufficient information
22	Eye	1		2				9			1	2							5	
98	Head	12		15	11	1	1	36	1	6	2	2	1	1		1			7	1
155	Back	31	1	27	24	1	2	11		3	1	2		1	1	3	40			
28	Neck and shoulder	6		7	3		1	4				1			1	1	2			
30	Chest	4		5	12	1	1	3						1			1			
63	Abdomen and hip	16		7	11			6		1	2	4			1		13			
723	Extremities	72	19	93	85	1	2	121	1	26	34	41	2	45	87	9	28	35	7	15
49	Unspecified and miscellaneous	4	2	3	2	6		4	4	1		3	2		1	1	1		12	3

[1] Statistics concerning recreation and pleasure boating accidents are published in CG-257.

COAST GUARD RULEMAKING

(Status as of 1 December 1973)

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
1972 PUBLIC HEARING							
Tailshaft inspection and drawing (67–71, 4–71)	3–1–72	3–27–72	4–3–72	X			
Definition of international voyage (12–70)	3–1–72	3–27–72	4–3–72			10–24–73	1–1–74
Portable foam firefighting equipment—tank vessels (17–71)	3–1–72	3–27–72	4–3–72	X			
ANCHORAGE REGULATIONS							
Casco Bay, Maine	6–16–72		7–19–72	X			
Henderson Harbor, N.Y.	6–28–72		8–1–72	X			
St. John's River, Fla. (CGFR 71–162)	12–22–71		1–31–72	X			
San Juan Harbor, P.R. (CGFR 72–12)	2–1–72		3–4–72	X			
Willington River, Ga. (CGFR 71–153)	11–25–71		12–27–71	X			
San Diego Harbor (CGD 72–228)	12–5–72		1–8–73	X			
Juan De Fuca, Wash. (CGD 72–233)	12–5–72		1–9–73	X			
Chester River, Md. (CGD 73–10)	1–19–73		2–27–73	X			
Milwaukee Harbor, WI (CGD 73–48)	3–19–73		4–16–73	X			
Barbers Point, Oahu, HI (CGD 73–59)	3–30–73		4–20–73	X			
Sodus Bay, NY (CGD 73–84)	4–27–73		5–29–73	X			
Baltimore Harbor, MD (CGD 73–125)	6–19–73		7–20–73			11–7–73	12–10–73
Oyster Bay, NY (CGD 73–126)	6–19–73		7–20–73	X			
Potts Harbor, ME (CGD 73–124)	6–19–73		7–20–73	X			
Puget Sound Area, WA (CGD 75–180)	8–24–73		9–28–73	X			
North East, MD (CGD 73–189)	11–29–73		12–31–73				
BOATING SAFETY (GENERAL)							
Termination of unique vessels (CGD 73–40)	3–14–73	5–8–73	5–14–73	X			
Hazardous bar areas (CGD 73–41)	3–14–73	4–17 & 19–73	5–1–73	X			
BRIDGE REGULATIONS							
Nansemond R., Va. (CGD 72–244)	11–11–72		12–15–72	X			
John Day R., Blind Slough, Clatskanie R., Oregon (CGD 72–231)	11–28–72		1–2–73	X			
Nanticoke, Del. (CGFR 71–142)	11–24–71		12–24–71	X			
Ogden Slip, Chicago, Ill. (CGFR 72–16)	2–2–72		3–7–72	X			
Sacramento River, Cal. (CGFR 71–165)	12–29–71		2–7–72	X			
Clear Creek, Tex. (CGD 72–165P)	8–26–72		10–3–72	X			
Pascagoula R. MS (CGD 73–140)						7–12–73	10–8–73 through 1–4–74
Cooper R. SC (CGD 73–139)	7–12–73		8–14–73			11–14–73	12–24–73
Sacramento R. et. al. CA (CGD 73–142)	7–20–73		8–21–73	X			
Lechmere Canal MA (CGD 73–163)	8–10–73		9–11–73	X			
Westchester Ck. NY (CGD 73–166)	8–10–73		9–11–73	X			
Big Carlos Pass FL (CGD 73–164)	8–10–73		9–11–73			11–21–73	12–24–73
Cheesequake Ck. NJ (CGD 73–162)	8–10–73		9–11–73	X			
Green R. KY (CGD 73–171)	8–21–73		9–25–73	X			
Pompano Beach, Fla. (CGD 72–158P)	8–22–72		9–26–72	X			
St. Lucie River, Fla. (CGD 72–168P)	8–26–72		10–3–72	X			
West Palm Beach, Fla. (CGD 72–167P)	8–26–72		10–3–72	X			
AIWW, Mile 342, Fla.; Drawbridge Operations (CGD 72–190P)	9–30–72		11–1–72	X			
Barnegat Bay, N.J. (CGD 72–211)	10–31–72		12–5–72	X			
Menominee River, WI (CGD 73–12)	1–26–73		3–6–73	X			
Spa Creek, MD (CGD 73–13)	1–26–73		3–6–73	X			
Long Island Inland Waterway (CGD 73–23)	2–12–73		3–30–73	X			
Shaws Cove, CT (CGD 73–72)	4–18–73 corrected 5–1–73		5–18–73	X			

Coast Guard Rulemaking—Continued

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
Scuppernong R., NC (CGD 73–111)	5–29–73	.....	7–3–73	X	.....	.....	.....
Rahway R., NJ (CGD 73–196)	9–11–73	.....	10–16–73	X	.....	.....	.....
Alabama R., AL (CGD 73–195)	9–11–73	.....	10–16–73	X	.....	.....	.....
Ashepoo R., SC (CGD 73–198)	9–11–73	.....	10–16–75	X	.....	.....	.....
Red River LA & AR (CGD 73–197)	9–11–73	.....	10–16–73	X	.....	.....	.....
Corte Madera CK, CA (CGD 73–199)	9–11–73	.....	10–16–73	X	.....	.....	.....
Gulf Intracoastal Waterway, FL (CGD 73–204)	.....	.....	.....	....	.....	9–13–73	8–15–73 through 3–1–74
Genesee R., NY (CGD 73–203)	9–13–73	.....	10–16–73	X	.....	.....	.....
Navigable Waters in LA (CGD 73–214)	9–27–73	.....	10–30–73	X	.....	.....	.....
Puyallup R., WA (CGD 73–215)	10–3–73	.....	11–6–73	X	.....	.....	.....
Stony Ck., MD (CGD 73–242)	10–12–73	.....	11–20–73	X	.....	.....	.....
Lake Washington Ship Canal, WA (CGD 73–255)	11–13–73	.....	12–18–73	....	.....	.....	.....
HAZARDOUS MATERIALS							
Dichlorobutene, Corrected, F.R. 9–20–72, Hazardous Cargoes (CGD 72–162PH)	8–30–72	10–24–72	10–31–72	X	.....	.....	.....
Certification of Cargo Containers for Transport under Customs Seal (CGD 72–139)	11–17–72	.....	12–19–72	X	.....	.....	.....
Miscellaneous Dangerous Cargoes (CGD 72–182)	11–11–72	12–12–72	12–19–72	X	.....	.....	.....
Marking of radioactive materials packages (CGD 73–137)	8–31–73	9–25–73	10–5–73	X	.....	.....	.....
Dangerous Cargoes, miscellaneous amendments (CGD 73–173)	9–5–73	9–25–73	10–5–73	X	.....	.....	.....
MARINE ENVIRONMENT AND SYSTEMS (GENERAL)							
Oil pollution prevention (CGFR 71–160, 161)	12–24–71	2–15–72	4–21–72	X	.....	12–21–72	7–1–74[1]
Marine Sanitation Devices (CGD 73–83)	Adv. Notice 6–18–73	.....	8–15–73	X	.....	.....	.....
Vessel traffic system, Puget Sound (CGD 73–158)	8–6–73	8–30–73	9–17–73	X	.....	.....	.....
Security Zone, New London CT (CGD 73–182)	8–23–73 corrected 9–4–73	.....	9–28–73	X	.....	.....	.....
MERCHANT MARINE SAFETY (GENERAL)							
Compressed Gas Cylinders (CGD 72–115PH)	8–31–72	9–28–72	10–2–72	X	.....	.....	.....
Oceanographic vessels, fire main systems (CGFR 72–20)	2–4–72	.....	3–19–72	X	.....	.....	.....
Water lights, floating electric (CGFR 72–48)	3–9–72	4–18–72	4–24–72	X	.....	.....	.....
Great Lakes Maritime Academy, List as a Nautical School-Ship (CGD 72–92P)	8–9–72	.....	9–15–72	X	.....	.....	.....
Ship's Maneuvering Characteristics Data (CGD 72–134PH)	8–22–72 Supp. Notice 7–20–73	9–28–72	10–13–72 8–31–73	X X	....	....	....
Unmanned Barges; hull construction (CGD 72–130)	10–31–72	12–19–72	12–29–72	X	.....	.....	.....
Construction requirements for tank ships (CGD 72–245)	Adv. Notice 1–26–73 Supp. Notice 7–5–73	.....	3–15–73	....	.....	.....	.....
Emergency Position Indicating Radio Beacons (CGD 73–24)	3–5–73	4–18–73	4–30–73	X	.....	.....	.....
Firemen's outfits on manned tank barges (CGD 73–11)	4–26–73	On request	5–28–73	X	.....	.....	.....

[1] Various effective dates precede that indicated. *See* Federal Registers of 12–21–72 and 8–24–73.

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
Dry chemical fire extinguisher requirements (CGD 73–73)	6–8–73	.....	7–10–73	X	.....	.....	.....
Great Lakes pilot rules (CGD 73–100)	8–1–73	.....	9–3–73	X	.....	.....	.....
Lifeboat winches for merchant vessels (CGD 73–103)	8–21–73	.....	9–28–73	X	.....	.....	.....
Lifesaving equipment specification (CGD 73–130)	8–28–73	.....	9–28–73	X	.....	.....	.....
Inflatable liferafts (CGD 73–160)	9–27–73	.....	10–31–73	X	.....	.....	.....
Lifeboats for merchant vessels (CGD 73–116)	10–3–73	.....	11–2–73	X	.....	.....	.....
Radar observer licensing (CGD 73–238)	10–12–73	.....	11–30–73	X	.....	.....	.....
Pressure vessels (CGD 73–133)	10–12–73	.....	11–16–73	X	.....	.....	.....
Watertight lights (CGD 73–201)	.....	.....	.....	.....	.....	11–13–73	11–13–73
Suspension and Revocation Proceedings; delegation of authority (CGD 73–183)	.....	.....	.....	.....	.....	11–26–73	11–29–73

NOTE: This table which will be continued in future issues of the Proceedings is designed to provide the maritime public with better information on the status of changes to the Code of Federal Regulations made under authority granted the Coast Guard. Only those proposals which have appeared in the Federal Register as Notices of Proposed Rulemaking, and as rules will be recorded. Proposed changes which have not been placed formally before the public will not be included.

AMENDMENTS TO REGULATIONS

TITLE 46—SHIPPING

CHAPTER I—COAST GUARD, DEPARTMENT OF TRANSPORTATION

[CGD 73–6CR]

PART 111—ELECTRICAL SYSTEMS; GENERAL REQUIREMENTS

Wiring Methods and Materials for Hazardous Locations; Corrections

In FR Doc. 73-17934, appearing at page 22788 for the issue of Friday, August 24, 1973, the following corrections should be made in Table 111.80–5(a)(7):

1. The 4th chemical listed in Group D which reads "Benziene" should be corrected to read "Benzene".

2. In the notice of proposed rulemaking, appearing in FR Doc. 73–2907 at page 4414 in the issue for Wednesday, February 14, 1973, the preamble proposed that "methanol" be added to Group D of Table 111.80–5(a)(7). In the proposal and in the final rule, "methanol" is omitted from Table 111.80–5(a)(7). Therefore, Table 111.80–5(a)(7) is corrected by listing "Methanol (methyl alcohol)" in Group D to follow the 17th chemical "Methane (natural gas)".

(Federal Register of November 29, 1973.)

TITLE 46—SHIPPING

CHAPTER I—COAST GUARD, DEPARTMENT OF TRANSPORTATION

SUBCHAPTER A—PROCEDURES APPLICABLE TO THE PUBLIC

[CGD 73–183R]

PART 1—ORGANIZATION, GENERAL COURSE AND METHODS GOVERNING MARINE SAFETY FUNCTIONS

SUBCHAPTER K—MARINE INVESTIGATIONS AND SUSPENSION AND REVOCATION PROCEEDINGS

PART 137—SUSPENSION AND REVOCATION PROCEEDINGS

Delegation of Authority

The purpose of these amendments to the regulations concerned with the suspension and revocation proceedings is to take cognizance of the Vice Commandant's authority to take final agency action under 46 CFR Subparts 137.25, 137.30, and 137.35, with respect to all matters except petitions and appeals in cases in which an order of revocation has been issued.

In a document that appears on page 32448 of this issue of the Federal Register, the Commandant delegates to the Vice Commandant authority to take final agency action on each petition to reopen a hearing or an appeal from a decision of an Administrative Law Judge, under the authority of 46 CFR Subparts 137.25, 137.30, and 137.35, except on a petition or appeal in a case in which an order of revocation has been issued. This delegation is codified in 33 CFR 1.01–40. In order to reflect this delegation in Title 46 of the Code of Regulations, amendments are made in this document

Effective date. These amendments shall become effective on November 29, 1973.

(The complete text of these changes was published in the Federal Register of November 26, 1973 (38 F.R. 32442).)

MODERNIZATION OF THE INTERNATIONAL RULES OF THE ROAD

By Capt. W. W. Barrow and Cdr. J. M. Duke, USCG

ED. NOTE: This is the fifth of a series of installments on the modernization of the International Rules of the Road. The article will be continued in subsequent issues of the Proceedings. *The views expressed are those of the authors and do not necessarily reflect those of the Commandant or of the Coast Guard as a whole.*

PART D—SOUND AND LIGHT SIGNALS

Rule 32

DEFINITIONS

(a) The word "whistle" means any sound signalling appliance capable of producing the prescribed blasts and which complies with the specifications in Annex III to these Regulations.

(b) The term "short blast" means a blast of about one second's duration.

(c) The term "prolonged blast" means a blast of from four to six seconds' duration.

Comment: Notice no mention is made of a fog horn.

Rule 33

EQUIPMENT FOR SOUND SIGNALS

(a) A vessel of 12 metres or more in length shall be provided with a whistle and a bell and a vessel of 100 metres or more in length shall, in addition, be provided with a gong, the tone and sound of which cannot be confused with that of the bell. The whistle, bell and gong shall comply with the specifications in Annex III to these Regulations. The bell or gong or both may be replaced by other equipment having the same respective sound characteristics, provided that manual sounding of the required signals shall always be possible.

(b) A vessel of less than 12 metres in length shall not be obliged to carry the sound signalling appliances prescribed in paragraph (a) of this Rule but if she does not, she shall be provided with some other means of making an efficient sound signal.

Comment: Paragraph (a) of this rule replaces the first part of existing Rule 15. Noticeable differences are that vessels are no longer required to have a back up fog horn, nor are sailing vessels and vessels towed singled out to carry a fog horn as opposed to a whistle. Sound differences under these new rules will be based on frequency (See Para 1(b) of Annex III). Basically, the deeper the tone, the bigger the vessel and the shriller the tone, the smaller the vessel. Paragraph (b) of this rule excuses certain small vessels from having to comply with specific sound-producing-equipment requirements. This is very similar to Rule 15(c)(ix).

Rule 34

MANOEUVERING AND WARNING SIGNALS

(a) When vessels are in sight of one another, a power-driven vessel underway, when manoeuvering as authorized or required by these Rules, shall indicate that manoeuvre by the following signals on her whistle:

—one short blast to mean "I am altering my course to starboard";

—two short blasts to mean "I am altering my course to port";

—three short blasts to mean "I am operating astern propulsion".

(b) Any vessel may supplement the whistle signals prescribe in paragraph (a) of this Rule by light signals, repeated as appropriate, whilst the manoeuvre is being carried out:

(i) These light signals shall have the following significance:

—one flash to mean "I am altering my course to starboard";

—two flashes to mean "I am altering my course to port";

—three flashes to mean "I am operating astern propulsion".

(ii) the duration of each flash shall be about one second, the interval between flashes shall be about one second, and the interval between successive signals shall be not less than ten seconds;

(iii) the light used for this signal shall, if fitted, be an all-round white light, visible at a minimum range of 5 miles and shall comply with the provisions of Annex I.

(c) When in sight of another in a narrow channel or fairway:

(i) a vessel intending to overtake another shall in compliance with Rule 9(e)(i) indicate her intention by the following signals on her whistle:

—two prolonged blasts followed by one short blast to mean "I intend to overtake you on your starboard side";

—two prolonged blasts followed by two short blasts to mean "I intend to overtake you on your port side".

(ii) the vessel about to be overtaken when acting in accordance with Rule 9(e)(i) shall indicate her agreement by the following signal on her whistle:

—one prolonged, one short, one prolonged and one short blast, in that order.

(d) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.

(e) A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an intervening obstruction shall sound one prolonged blast. Such signal shall be answered with a prolonged blast by any approaching vessel that may be within hearing around the bend or behind the intervening obstruction.

(f) If whistles are fitted on a vessel at a distance apart of more than 100 metres, one whistle only shall be used for giving manoeuvering and warning signals.

Comment: Paragraph (a), which describes the whistle signals for maneuver, is essentially the same as corresponding 28(a) of the existing Rules. Paragraph (b) describes an optional maneuvering light which may be used to supplement whistle signals. This rule is superior to its predecessor (Rule 28(c)) in two respects: First, it more clearly describes the light and its use; secondly, it removes the requirement that the light be synchronized with the whistle signals. This latter requirement, contained in the existing rules, is sometimes confusing and may at other times even be missed since one blast would only be accompanied by one flash. Under these rules a one-, two-, three- or even five-blast signal is repeated at specified intervals during the maneuver.

Paragraph (c) of this rule contains the whistle signals used in the overtaking rule for vessels in a narrow channel which have already been discussed under Rule 9. Paragraph (d) contains the so-called "danger signal" which has been expanded into a much more useful tool. Under existing rules, this signal may only be given by a privileged vessel in protest of a burdened vessel not doing her duty. Under the new rules this signal may be given by any vessel in doubt as to the actions or intentions of an approaching vessel. It may also be repeated on the maneuvering light. The use of this signal now closely aligns with use under various U.S. rules. Our mariners were 3 to 1 in favor of this change.

Paragraph (e) discusses the bend signal already mentioned in Rule 9. Except for the differences noted in the discussion under Rule 9, it is essentially the same as the existing bend signal.

Paragraph (f) cautions mariners on large vessels fitted with more than one whistle to use only one whistle for maneuvering signals. The reasons for this are obvious. Placement of more than one whistle is further spoken to under paragraphs 1 (f) and (g) of Annex III dealing with sound signals.

Rule 35

SOUND SIGNALS IN RESTRICTED VISIBILITY

In or near an area of restricted visibility, whether by day or night, the signals prescribed in this Rule shall be used as follows:

(a) A power-driven vessel making way through the water shall sound at intervals of not more than 2 minutes one prolonged blast.

(b) A power-driven vessel underway but stopped and making no way through the water shall sound at intervals of not more than 2 minutes two prolonged blasts in succession with an interval of about 2 seconds between them.

(c) A vessel not under command, a vessel restricted in her ability to manoeuvre, a vessel constained by her draught, a sailing vessel, a vessel engaged in fishing and a vessel engaged in towing or pushing another vessel shall, instead of the signals prescribed in paragraphs (a) or (b) of this Rule, sound at intervals of not more than 2 minutes three blasts in succession, namely one prolonged followed by two short blasts.

(d) A vessel towed nr if more than one vessel is towed the last vessel of the tow, if manned, shall at intervals of not more than 2 minutes sound four blasts in succession, namely one prolonged followed by three short blasts. When practicable this signal shall be made immediately after the signal made by the towing vessel.

(e) When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a power-driven vessel and shall give the signals prescribed in paragraphs (a) or (b) of this Rule.

(f) A vessel at anchor shall at intervals of not more than one minute ring the bell rapidly for about 5 seconds. In a vessel of 100 metres or more in length the bell shall be sounded in the forepart of the vessel and immediately after the ringing of the bell the gong shall be sounded rapidly for about 5 seconds in the after part of the vessel. A vessel at anchor may in addition sound three blasts in succession, namely one short, one prolonged and one short blast, to give warning of her position and of the possibility of collision to an approaching vessel.

(g) A vessel aground shall give the bell signal and if required the gong signal prescribed in paragraph (f) of this Rule and shall, in addition, give three separate and distinct strokes on the bell immediately before and after the rapid ringing of the bell. A vessel aground may in addition sound an appropriate whistle signal.

(h) A vessel of less than 12 metres in length shall not be obliged to give the above-mentioned signals but, if she does not, shall make some other efficient sound signal at intervals of not more than 2 minutes.

(i) A pilot vessel when engaged on pilotage duty may in addition to the signals prescribed in paragraphs (a), (b), or (f) of this Rule sound an identity signal consisting of four short blasts.

Comment: This rule replaces the fog signals contained in existing Rule 15. In addition to the disappearance of the term fog horn from the rules, four changes have taken place in this area. Paragraph (b) contains the signal for

a power-driven vessel underway but stopped and making no way. This signal is still two prolonged blasts; however, the interval between the blasts has been altered from 1 second to 2 seconds. The reason for this change escapes us; however, we do not feel it is of significant importance to the mariner. Notice no mention of intervals is made in the other signals of this rule.

Paragraph (c) contains the only significant change to this rule and we feel it is an extremely good one. All of the incumbered vessels (those mentioned in Rule 18) now give the same signal in fog. There are two new listings: the deep draft vessel, and the sailing vessel. Gone are the old port tack, starboard tack, and wind aft signal for sailing vessels.

The existing signal given by a manned tow immediately following the signal of its towing vessel is retained without change in paragraph (e). It had been proposed to do away with this signal. The idea was that the towing vessels signal was adequate. However, U.S. mariners, as well as those from other nations, favored its retention.

In paragraph (g) of this rule the existing aground signal is retained. However, the last sentence of this section provides that a vessel aground may in addition sound an appropriate whistle signal. What signal? With no more guidance than that, perhaps the intention of the drafters is that mariners in such situations enter the International Code of Signals for a signal appropriate to the situation. The fourth change to fog signals may be found in the next paragraph (h). Under existing rules vessels of less than 40 feet in length are required to make only some efficient sound signal at intervals of not more than 1 minute. In these rules, that interval has been extended to 2 minutes, which to us seems reasonable.

Rule 36

SIGNALS TO ATTRACT ATTENTION

If necessary to attract the attention of another vessel any vessel may make light or sound signals that cannot be mistaken for any signal authorized elsewhere in these Rules, or may direct the beam of her searchlight in the direction of the danger, in such a way as not to embarrass any vessel.

Comment: Authority for a signal to attract attention contained in this rule is lifted without significant change from existing Rules 9(g) and 12.

Rule 37

DISTRESS SIGNALS

When a vessel is in distress and requires assistance she shall use or exhibit the signals prescribed in Annex IV to these Regulations.

Comment: Since the distress signals are listed in the International Code of Signals, and since they have nothing to do with the prevention of collisions at sea, it had early on been proposed that the distress signals be lifted from these rules. However, most nations, including the United States, felt that these signals should be retained with the rules to give them the widest possible exposure. We believe the short sentence mentioning them here in the rules and then listing them in an Annex is an excellent way of handling this problem and it is editorially superior to the existing rule.

PART E—EXEMPTIONS

Rule 38

EXEMPTIONS

Any vessel (or class of vessels) provided that she complies with the requirements of the International Regulations for Preventing Collisions at Sea, 1960, the keel of which is laid or which is at a corresponding stage of construction before the entry into force of these Regulations may be exempted from compliance therewith as follows:

(a) The installation of lights with ranges prescribed in Rule 22, until four years after the date of entry into force of these Regulations.

(b) The installation of lights with colour specifications as prescribed in Section 7 of Annex I to these Regulations until four years after the date of entry into force of these Regulations.

(c) The repositioning of lights as a result of conversion from imperial to metric units and rounding off measurement figures, permanent exemption.

(d)(i) The repositioning of masthead lights on vessels of less than 150 metres in length, resulting from the prescriptions of Section 3(a), of Annex I, permanent exemption.

(ii) The repositioning of masthead lights on vessels of 150 metres or more in length, resulting from the prescriptions of Section 3(a) of Annex I to these Regulations, until nine years after the date of entry into force of these Regulations.

(e) The repositioning of masthead lights resulting from the prescriptions of Section 2(b) of Annex I, until nine years after the date of entry into force of these Regulations.

(f) The repositioning of sidelights resulting from the prescriptions of Section 3(b) of Annex I, until nine years after the date of entry into force of these Regulations.

(g) The requirements for sound signal appliances prescribed in Annex III, until nine years after the date of entry into force of these Regulations.

Comment: In this new draft of rules the location and specifications for various vessel navigation lights have been modified to provide better visibility. Additionally, the masthead lights and sidelights locations have been modified to give an indication of the length and breadth of vessels. This is particularly aimed at very large vessels. Our mariners were overwhemingly in favor of all of these changes.

This exemption rule provides what we consider to be exceedingly generous time allowances for existing vessels to come into compliance with the lighting provisions of these rules after they have been adopted. For range or color specifications, which involve nothing more than relamping or new lenses, the mariner is allowed 4 years. For the repositioning of masthead and sidelights on large vessels (which are the vessels this change was aimed at) 9 years are allowed for compliance. Vessels under 150 meters in length enjoy permanent exemption.

In order to bring a vessel's sound signal apparatus into compliance with the technical specifications of these rules, 9 years is also authorized.

We see the possibility of some slight conflict brought about by paragraph (c) of this rule. These rules make it fairly clear that vessels in excess of 7 meters are required to comply with special lighting requirements in Rule 27, the so-called not-under-command and hindered-vessel rule. Such exemptions as exist in the current rules for these types of signals are allowed for vessels less than 65 feet in length. This of course more closely corresponds to a 20-meter exemption rather than the 7-meter exemption. However, as a practical matter, we suspect that vessels less than 65 feet in length will probably utilize the provisions of this rule to authorize themselves a permanent exemption where necessary.

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Both authors had a great deal of experience in the early preparations leading up to the new International Regulations for Preventing Collisions at Sea.

Captoin Winford W. Barrow

Commander John M. Duke

MERCHANT MARINE SAFETY PUBLICATIONS

The following publications of marine safety rules and regulations may be obtained from the nearest marine inspection office of the U.S. Coast Guard. Because changes to the rules and regulations are made from time to time, these publications, between revisions, must be kept current by the individual consulting the latest applicable Federal Register. (Official changes to all Federal rules and regulations are published in the Federal Register, printed daily except Saturday, Sunday, and holidays.) The date of each Coast Guard publication in the table below is indicated in parentheses following its title. The dates of the Federal Registers affecting each publication are noted after the date of each edition.

The Federal Register will be furnished by mail to subscribers, free of postage, for $5.00 per month or $45 per year, payable in advance. The charge for individual copies is 75 cents for each issue, or 75 cents for each group of pages as actually bound. Remit check or money order, made payable to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Regulations for Dangerous Cargoes, 46 CFR 146 and 147 (Subchapter N), dated October 1, 1972 are now available from the Superintendent of Documents price: $5.75

CG No.	TITLE OF PUBLICATION
101	Specimen Examination for Merchant Marine Deck Officers (7–1–63).
101–1	Specimen Examinations for Merchant Marine Deck Officers (2d and 3d mate) (10–1–73).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (4–1–72). F.R. 7–21–72, 12–1–72.
115	Marine Engineering Regulations (6–1–73) F.R. 6–29–73.
123	Rules and Regulations for Tank Vessels (1–1–73). F.R. 8–24–73, 10–3–73, 10–24–73.
129	Proceedings of the Marine Safety Council (Monthly).
169	Rules of the Road—International—Inland (8–1–72). F.R. 9–12–72.
172	Rules of the Road—Great Lakes (7–1–72). F.R. 10–6–72, 11–4–72, 1–16–73, 1–29–73, 5–8–73.
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids (3–2–64).
175	Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department (3–1–73).
176	Load Line Regulations (2–1–71) F.R. 10–1–71, 5–10–73.
182	Specimen Examinations for Merchant Marine Engineer Licenses (7–1–63).
182–1	Specimen Examinations for Merchant Marine Engineer Licenses (2d and 3d Assistant) (10–1–73).
184	Rules of the Road—Western Rivers (8–1–72). F.R. 9–12–72, 5–8–73.
190	Equipment List (8–1–72). F.R. 8–9–72, 8–11–72, 8–21–72, 9–14–72, 10–19–72, 11–8–72, 12–5–72, 1–15–73, 2–6–73, 2–26–73, 3–27–73, 4–3–73, 4–26–73, 6–1–73, 8–1–73, 10–5–73, 11–26–73.
191	Rules and Regulations for Licensing and Certification of Merchant Marine Personnel (6–1–72). F.R. 12–21–72, 3–2–73, 3–5–73, 5–8–73, 5–11–73, 5–24–73, 8–24–73, 10–24–73.
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (5–1–67). F.R. 3–30–68, 4–30–70, 10–20–70, 7–18–72, 4–24–73, 11–26–73.
227	Laws Governing Marine Inspection (3–1–63).
239	Security of Vessels and Waterfront Facilities (3–1–72). F.R. 5–31–72, 11–3–72, 7–8–72, 1–5–73.
256	Rules and Regulations for Passenger Vessels (5–1–69). F.R. 10–29–69, 2–25–70, 4–30–70, 6–17–70, 10–31–70, 12–30–70, 3–9–72, 7–18–72, 10–4–72, 10–14–72, 12–21–72, 4–10–73, 8–1–73, 10–24–73.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (4–3–73). F.R. 6–28–73, 6–29–73, 8–1–73, 10–24–73.
258	Rules and Regulations for Uninspected Vessels (5–1–70). F.R. 1–8–73, 3–28–73.
259	Electrical Engineering Regulations (6–1–71). F.R. 3–8–72, 3–9–72, 8–16–72, 8–24–73, 11–29–73.
266	Rules and Regulations for Bulk Grain Cargoes (5–1–68). F.R. 12–4–69.
268	Rules and Regulations for Manning of Vessels (10–1–71). F.R. 1–13–72, 3–2–73.
293	Miscellaneous Electrical Equipment List (9–3–68).
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (7–1–72). F.R. 7–8–72.
323	Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (12–1–71). F.R. 3–8–72, 3–25–72, 6–24–72, 7–18–72, 9–13–72, 12–8–72, 12–21–72, 1–8–73, 3–5–73, 6–29–73.
329	Fire Fighting Manual for Tank Vessels (7–1–68).
439	Bridge-to-Bridge Radiotelephone Communications (12–1–72).

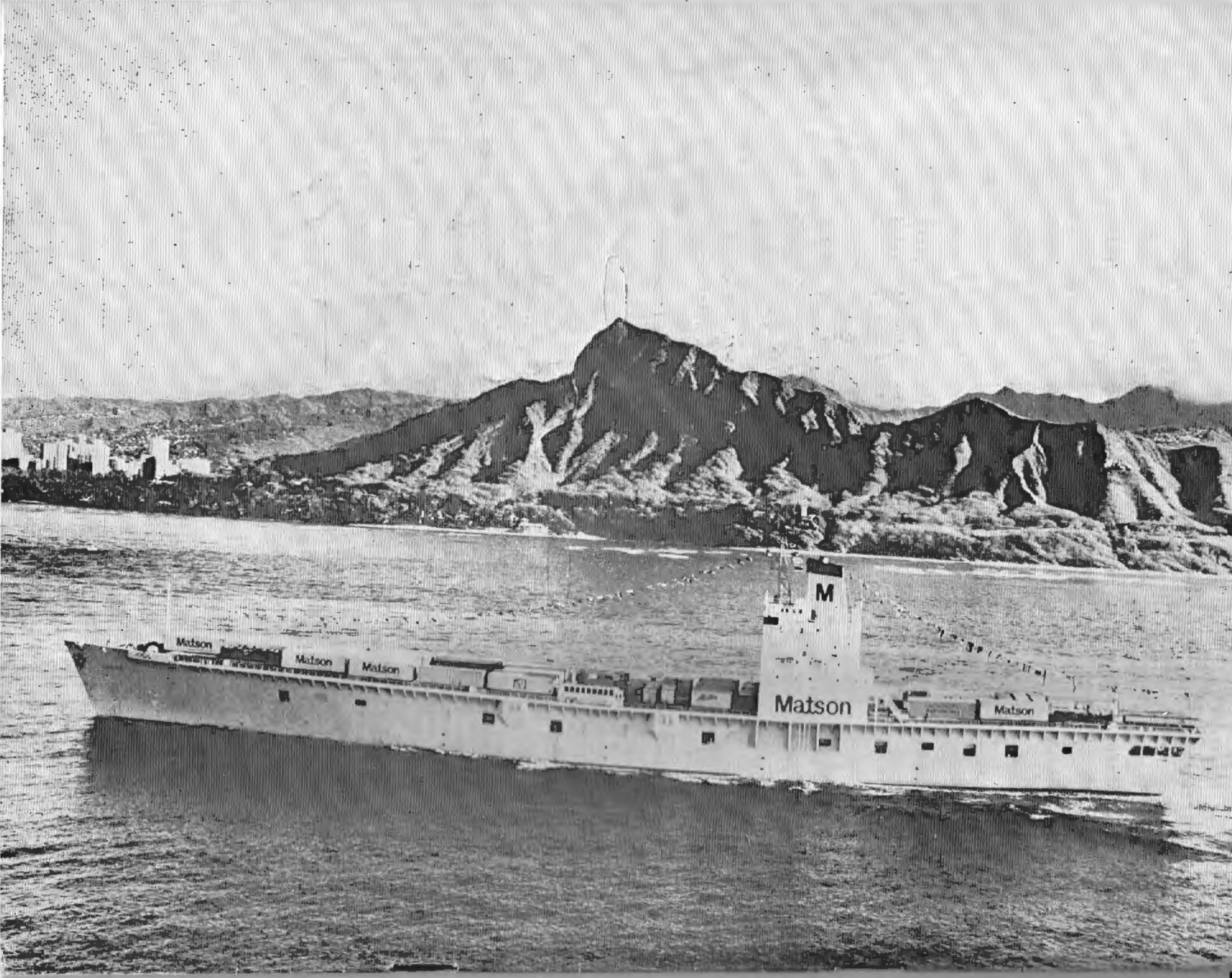
CHANGES PUBLISHED DURING DECEMBER 1973

The following have been modified by Federal Registers:

CG–190, Federal Register of November 26, 1973.

CG–200, Federal Register of November 26, 1973.

CG–259, Federal Register of November 29, 1973.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