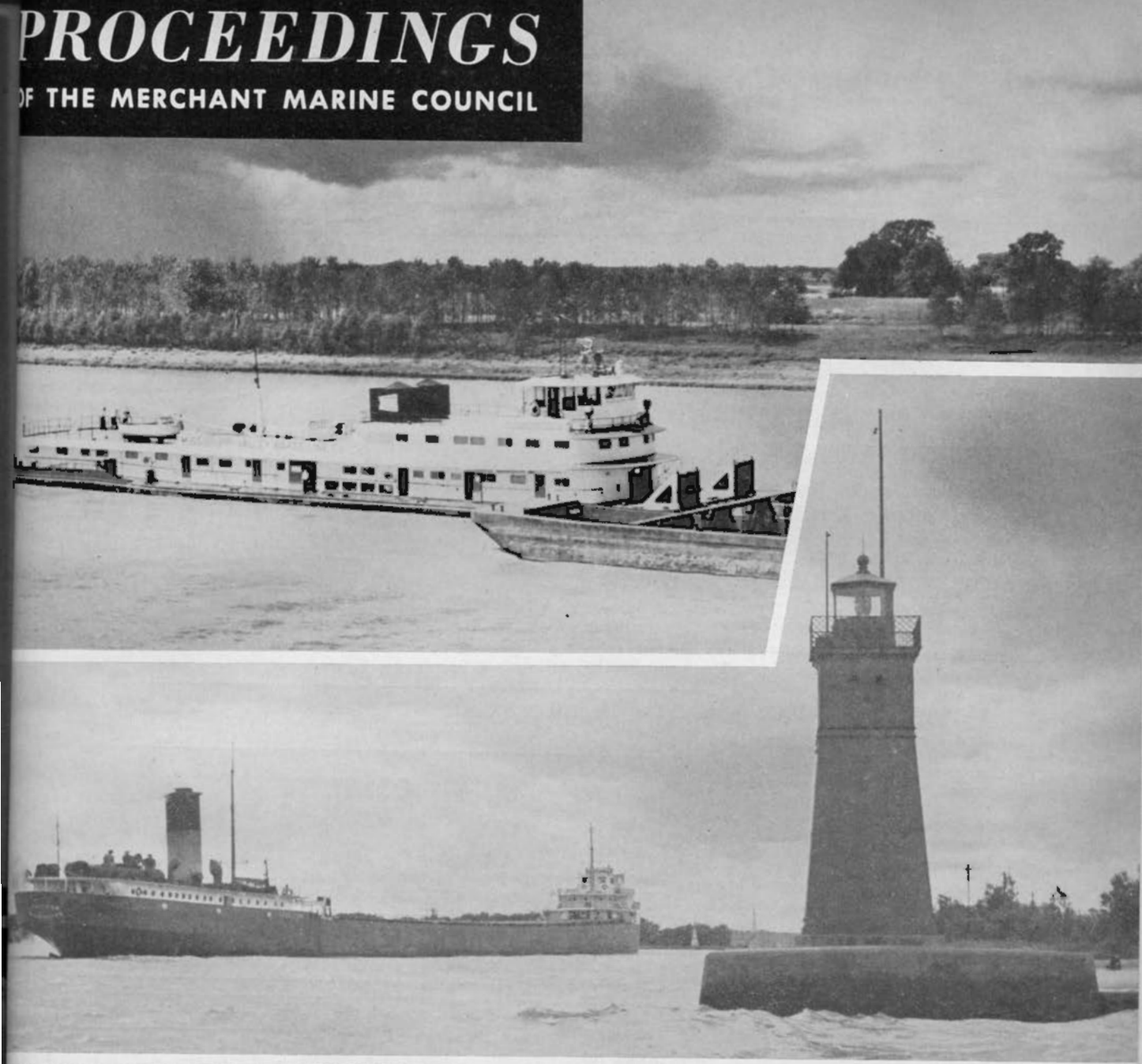
PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL



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PROCEEDINGS

OF THE

MERCHANT MARINE COUNCIL

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LT A. J. Arnett, USCG, *Editor*
T. A. DeNardo, *Assistant Editor*

IN THIS ISSUE . . .

A *case is made for "Rules" unification* by an officer intimate with the goals of the undertaking and privy to some of the objections and problems beginning page 187.

Runaway barges have from time to time caused, at bottom, anxious moments during recovery and, at worst, heavy property damage and even loss of life. A unique runaway *barge recovery system* is described beginning page 191.

The first of a series of 10 articles *comparing* the 1960 Rules of the Road with the existing 1948 Rules begins on page 194.

U.S. COAST GUARD CUTTER *Hollyhock* completes the difficult task of refueling a downed U.S. Air Force seaplane 140 miles east of Great Abaco Island, Bahamas.
The *Hollyhock* is a 175-ft buoy tender stationed at Miami, Fla.

THIS COPY FOR NOT LESS THAN 20 READERS—PASS IT ALONG

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FRONT COVER

Three areas where the Rules of the Road for navigation presently contain significant differences, Western Rivers, Great Lakes, and Inland Waters.

BACK COVER

Photograph taken from a Coast Guard aircraft 260 miles northeast of Honolulu shows a lifeboat from the luxury liner *Lurline* alongside the tug *Resolute* removing an ailing crewmember who was stricken with acute appendicitis.

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WHY UNIFY OUR RULES OF THE ROAD?

By Lt. Donald Cunningham, USCG

IS THERE GOOD CAUSE TO REVISE OUR U.S. RULES OF THE ROAD SO THAT THEY ARE UNIFORM AMONG THEMSELVES AND SO THAT THEY CONFORM TO INTERNATIONAL RULES TO THE MAXIMUM EXTENT POSSIBLE? THIS ARTICLE IS ADDRESSED TO THAT QUESTION

A TANKER en route Baton Rouge, La., prepares to enter the Mississippi River via Southwest Pass. The mate on watch notes that Southwest Pass Midchannel Lighted Whistle Buoy is abeam and that the ship has departed waters governed by the International Rules of the Road. Inland Rules now apply. About 2 hours later the vessel passes a second line marking the beginning of the application of the Western Rivers point and bends custom, which is recognized by the courts along many stretches of the river, but is not included in the Rules. At the Huey P. Long Bridge in New Orleans, another imaginary line is crossed and Western Rivers Rules of the Road replace the Inland Rules. No further significant change of Rules occurs in the Mississippi River system, even at the upper limit of navigability for deep-draft oceangoing vessels.

Vessels proceeding from sea through the St. Lawrence Seaway to ports on the Great Lakes must make the transition from International to Great Lakes Rules of the Road. Similarly, towboats and other craft on the Chicago River and the New York State Barge Canal cross demarcation lines.

Most maritime nations of the world use the International Rules on their internal waters. Are U.S. waters so dissimilar that we must have a multitude of different systems available to prevent collision? The term "multitude" does not seem too strong—International Rules apply to waters around the periphery of the United States; Inland, Great Lakes, and Western Rivers Rules apply to specified internal waters; Regulations (Pilot Rules) have been promulgated to supplement the statutory Rules.

A cursory comparison of the various U.S. Rules of the Road shows they differ considerably from one another. While it is not our purpose here to review all these differences, an example is shown on following page.

HODGEPODGE DEVELOPMENT

The primary reason that we have this wide diversity is not because of extreme conditions requiring "local rules," as permitted by International Rule 30, but rather, it is because our

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internal Rules developed in hodgepodge fashion. It probably wasn't too serious in earlier days, but now that our improved waterways allow extensive traffic between areas where the different Rules apply and even admit international commerce, these unnecessary differences become glaringly evident.

The negative side of this picture can be easily supported. Although there is an admitted need for a few "local rules," we don't really require the host of dissimilar Rules now used to cover what are often identical situations.

UNIFICATION JUSTIFIED

Let's review justification for a single set of U.S. Rules of the Road patterned as closely as practicable after the latest International Rules.

1. This unification would CLARIFY the Rules of the Road. Basically, there would be fewer Rules with the consolidation or elimination of those for which no practical need exists. At this writing, the three U.S. Coast Guard publications which contain the International, Inland, Western Rivers, and Great Lakes Rules of the Road and associated information are a total of 213 pages thick. This is an impressive burden for the mariner who plies the waters on which these different Rules apply. A simple reduction in quantity would encourage learning and understanding of the remaining Rules.

Clarity becomes particularly important with the high increase in pleasure boating. More and more, the overwhelming percentage of people applying the Rules is not the professional mariner to whom the Rules are a stock in trade, but rather, it is the part-time recreational boatsman. To allow him to gain a working knowledge of these Rules in the relatively short time he will probably allocate to this end, clarity is essential.

2. Unification of Rules of the Road would have the effect of developing INCREASED CONFIDENCE in the application of these anticollision measures. Today, even the mariner who most cautiously follows applicable Rules of the Road most certainly has had occasion to "hold his breath" until he can be certain that his counterpart on an approaching vessel will obey the Rules. This tends to make moves less decisive and timely, interjecting an air of uncertainty into many meeting, crossing, and overtaking situations. Increased confidence in a single set of unified U.S. Rules of the Road would not only lead to more positive and timely action but would also reduce the number of last-minute, violent alterations which have resulted in several major collisions.

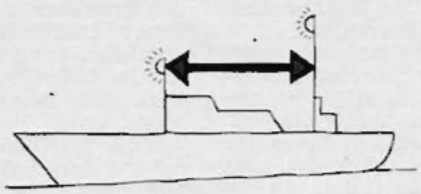
3. Hand in hand with improved clarity and confidence in the application of a unified set of clear-cut Rules of the Road goes the expectation that mariners will be held fully accountable for their strict obedience. The confusion to the mariner which results from our existing multitude of Rules tends to make their violation less reprehensible and complicates enforcement action.

4. Our existing U.S. Rules of the Road are sometimes directly discriminatory to international traffic operating on our waters. In one region the applicable Rules require that inbound traffic alter navigational lights to conform to local requirements. The new lights are not particularly safer, but the foreign vessel must change or be in violation of the law.

The master of a foreign ship is responsible for its safety even though there is a qualified U.S. pilot aboard, but the present complexity of our internal Rules makes it difficult for him to properly discharge his duties. A set of unified Rules patterned as closely as possible after International Rules would allow a fairly easy transition from International to U.S. waters and would take some of the pressure off the pilot on the bridge who is now perhaps the only man there fully conversant with the applicable anticollision rules. In addition to easing the International to Inland Rules of the Road transition, the reverse would also hold true. With a set of U.S. Rules patterned after International, the U.S. mariner operat-

REQUIRED SPACING BETWEEN RANGE LIGHTS

(Vessels over 150 feet in length)



INTERNATIONAL RULES:	Minimum of three (3) times the vertical separation, etc.
INLAND RULES:	Greater than vertical separation for seagoing vessels
GREAT LAKES RULES:	Minimum of fifty (50) feet
WESTERN RIVERS RULES:	Not specified

ing away from this country would find himself more at home with Rules similar to those used in his native waters.

5. With the differences between the various sets of U.S. Rules, it becomes essential that mariners know exactly when their vessels cross the line separating one set of Rules from another. But it is not always easy to determine just when this line is crossed. This uncertainty can be dangerous with navigational lights to be altered, fog signals changed, and different concepts of steering and sailing rules applied. One set of U.S. Rules of the Road applicable to all our internal waters would at least mean elimination of the lines separating Inland, Western Rivers, and Great Lakes Rules of the Road. And, by following the International Rules as closely as practicable the Inland/International line of demarcation would only retain significance proportional to the degree of difference between the two sets of Rules. If there were no differences, there would be no need for the line.

6. Unification as discussed above would substantially update existing U.S. Rules and, once the initial adjustment had been made, would make it easier to prevent any recurrence of the wide gulf which presently exists between U.S. and International Rules.

PERIODIC ADJUSTMENT

There is clear recognition of the need to periodically adjust the International Rules of the Road to technological advances and changing conditions. Delegates from a majority of the world's maritime nations met at Safety of Life at Sea (SOLAS) Conferences held in 1948 and again in 1960 to formulate change and improvement to the anticollision regulations and other internationally accepted principles and standards of marine safety. In the 1960 meeting, the International Rules were subjected to stiff appraisal and considerable revamping which reflected, for example, recognition of the widespread use of radar. In general, these Rules have been substantially improved to meet modern needs. They were published in the October issue of *The Proceedings of the Merchant Marine Council.*

Much of the latest updating of the International Rules stemmed from proposals offered by the U.S. delegation attending the SOLAS Conference; thus it is apparent that these advances and changing trends are keenly pertinent to our own waters. But, we've yet to adopt them into the Rules applicable to most U.S. waters. With unification, it would be a simple

Photo courtesy of Wesley R. Harkins

matter to keep pace with modern advancements and at the same time, we could reverse the present trend of increased divergence between our anticollision rules and those of the rest of the world.

Is there support for such a program? Yes—the need for unification of U.S. Rules of the Road is recognized today throughout much of the marine industry. Many organizations and individuals are on record as solidly supporting its basic premises.

OBJECTIONS

But, there are also objections—let's briefly look them over. The fact that the problem of such widely diverse Rules has continued to be recognized, yet gone unresolved for so many years, is indicative of the resistance to change in this field.

ABOUT THE AUTHOR

LIEUTENANT CUNNINGHAM graduated from the U.S. Coast Guard Academy in 1955. He served aboard the U.S. Coast Guard Cutter *Unimak* out of East coast ports on weather patrol and Reserve Training duties during 1955–57. He then spent 1958–59 aboard the U.S. Coast Guard Cutter *Clover* out of Kodiak and Adak, Alaska. During 1960–62 his duties were with the Marine Inspection Office, New Orleans, La. He reported to his present assignment with the Rules of the Road Branch, Merchant Vessel Inspection Division, Coast Guard Headquarters, in February 1963.

Under all Rules of the Road, once vessels are appropriately identified by prescribed lights and shapes and other definitive groundwork laid, the basic objective of preventing collisions is met by the steering and sailing rules, those related to conduct in restricted visibility, and those prescribing whistle signals. These are the *operational* Rules which underlie the action which should be taken by the man on the bridge each time vessels pass close enough to involve risk of collision. In other words, they are the day-to-day working rules constituting the backbone of collision prevention.

A pervading worry that rears its head is that Rules of the Road unification would mean a drastic upheaval of these deeply ingrained operational Rules. Objections to changing this category of Rule tend to be the most meaningful raised and their validity is clearly recognized by the Coast Guard as necessitating some deviation from the 1960 International Rules which provide the pattern for unification.

An example appears in order. The International Rules call for "rudder" signals when two vessels are approaching so as to involve risk of collision—i.e., "passing" signals are only required or even allowed when the rudder is put over to change course. By comparison, the concept of "intent" signals prevails under U.S. Rules whereby two approaching vessels are *required* to exchange "passing" whistle signals even if a change in course is not necessary for safe passage. This is probably the most significant difference between International and U.S. Rules of the Road. However, it is noteworthy that a certain degree of unification is already in effect in this instance since, although there are variously worded definitions of whistle signals assigned within the differing U.S. Rules, the "intent" meaning is standard throughout all our waters.

There are many areas in the country where meeting vessels commonly pass on either side of each other due to channel conditions or other reasons. This makes it imperative that a passing agreement be struck before two vessels attempt to pass. U.S. mariners are understandably alarmed when a cursory glance at the goals of unification infers the International "rudder" signals would replace those of "intent".

This would not be so. The Coast Guard will not sponsor any unification of Rules of the Road which would have the net effect of making our waters less safe.

Unification of the Rules would *not* mean a disruption of operational U.S. Rules of the Road which in many

cases have developed because of local channel and current conditions, the singular nature of vessels using our internal waterways, and other related factors. These features will continue to exist and any unified set of U.S. Rules of the Road must be drawn up to allow necessary deviations from the International Rules. The need for so-called local rules is recognized by International Rule 30, which reads:

> Nothing in these Rules shall interfere with the operation of a special rule duly made by local authority relative to the navigation of any harbour, river, lake, or inland water, including a reserved seaplane area.

Let's look at another example of an existing operational difference between a U.S. and International Rules of the Road concept. The International Rules clearly prohibit the exchange of maneuvering signals unless the vessels are within sight of one another. This jibes with practice on waters governed by Inland Rules of the Road but conflicts with that under the Great Lakes Rules which allow vessels to exchange "passing" whistle signals even in dense fog. Great Lakes mariners often conclude that vessel operations in those waters would be considerably slowed down if Rules of the Road unification made "passing" signals between unseen vessels illegal.

However, today on the Great Lakes, such passing agreements in fog are seldom based solely on whistle signals but generally stem from radar presentations coupled with bridge-to-bridge radiotelephone. (Most commercial vessels on the Lakes are equipped with bridge-to-bridge radiotelephone under provisions of the so-called 1952 Great Lakes Agreement between the United States and Canada). It would appear that under such conditions sound signals, by themselves, are too notoriously unreliable to provide a safe basis for today's large vessels to arrive at a passing agreement and safely clear each other.

Granted that there are distinct differences in the wording of the Great Lakes and International Rules governing conduct in restricted visibility, let's look at the actual operation under each system. Except for the concept of whether or not vessels must be within sight of each other for exchanging "passing" whistle signals, it appears that there may be little basic difference in the net result.

Both Great Lakes Rule 15 and International Rule 16 require moderate speed. Although the International Rule requires engines to be stopped upon hearing a fog signal forward of the beam as compared to the Great Lakes requirement that speed at once be reduced to bare steerageway upon hearing a fog signal not more than four points from right ahead, both require navigation with caution until the situation is resolved. To comply with the Great Lakes requirement to at once reduce speed to bare steerageway it seems likely that a vessel's engines would have to be temporarily stopped; by the same token a vessel under International Rules would normally, after stopping her engines, maintain bare steerageway until clear. The point is that vessels will continue to pass each other in close, weather-obscured passing situations; and, whatever the Rules that govern, the dictates of good seamanship are still the overall prevailing factor in all areas.

STUDY INDICATED

It would appear that it may be possible to reconcile wording differences between the U.S. and International Rules of the Road where drastic operating changes will not accrue as a result. Naturally such resolutions can only come after lengthy, diligent study.

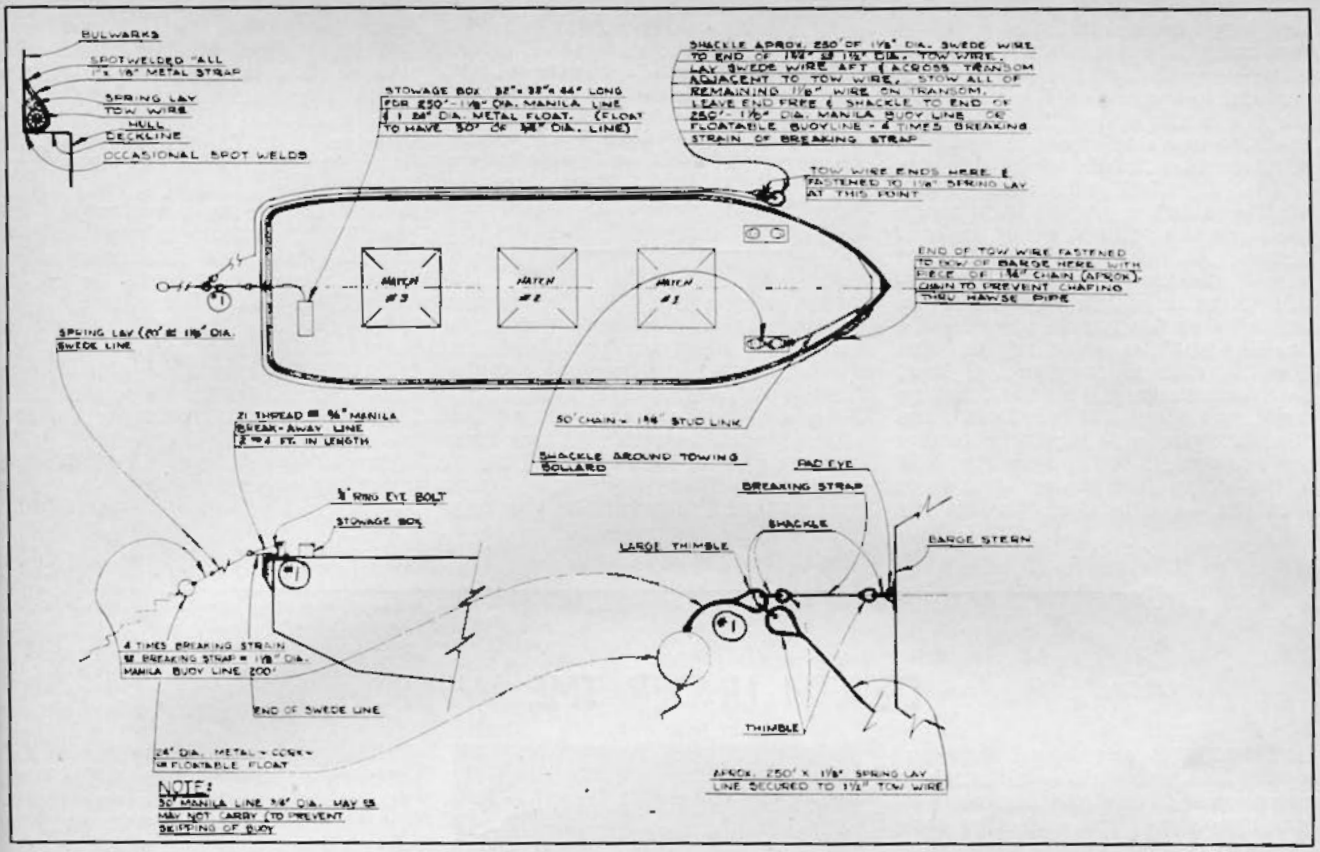
There are a vast number of differences (i.e., definitions, lights and shapes, distress signals, etc.) between U.S. and International Rules which are outside the area of operational rules, but which give rise to objections in the face of proposed unification. Although of lesser significance than the so-called operational Rules, they collectively constitute most of the mass of divergence, and their sheer weight in numbers clouds an understanding of the more pertinent sections of the Rules. Nevertheless there is good valid reason for some of them.

In conclusion, a worthwhile revision and modernization of the U.S. Rules of the Road would not be a simple, painless operation and, although the Coast Guard clearly has the responsibility to foster such change in the interests of improving marine safety, there is a firm prerequisite to move slowly and carefully toward such a goal.

A preliminary U.S. Coast Guard proposal to unify the Inland, Great Lakes, and Western Rivers Rules of the Road will be published in January, 1965 issue.

MUSEUM GETS CAPE CHARLES LIGHT LENS

ABOVE PICTURE, taken in July of 1895, shows the then just completed Cape Charles Light Station on Smith Island, Va. The huge first order, 16-panel lens, together with its operating mechanism, has been dismantled and donated to the Mariner's Museum in Norfolk, Va., where it will be installed as an exhibit. The lens cost approximately $20,000 at 1895 prices. The tower is an octagonal, pyramidal skeleton steel structure, with vertical members, struts, and diagonal tie rods. The center is an iron cylinder with an interior spiral staircase. The tower is 191 feet high. The lens will be replaced by a searchlight beacon, atop the tower, which will be operated automatically, and the station will now be unmanned.



UNIQUE RECOVERY SYSTEM CAPTURES RUNAWAY BARGES

BY LCDR JOSEPH A. MACRI, USCG

ON 11 MARCH 1964 an unmanned tank barge broke away from its towing vessel while being towed coastwise near Point Grenville, Wash.

Crewmen of the towing vessel grappled for the broken line, but were unable to recover it. Meanwhile, the Coast Guard Cutter *Modoc* arrived at the scene, made an attempt to recapture the drifting barge, but failed. In the hours following, as the barge, loaded with over 2 million gallons of petroleum products, drifted toward shore, a Coast Guard helicopter landed two men aboard the barge but they too were unable to haul aboard lines strong enough to contain the barge before it went hard aground near Moclips, Wash.

Professional salvagers worked 5 days to refloat the barge; meanwhile, million gallons of petroleum leaked out or were pumped overboard into the surrounding beach area during the salvaging operation.

The ultimate cost of salvage, repair, and pollution damage from this single incident will approach a half million dollars. Yet this towline casualty was only one of nine known cases of barges breaking away from their tows in the Puget Sound area since 1963.

A unique runaway barge recovery system reportedly developed by Capt. F. R. Plancich (Patent Pending) of Alaska Freight Lines has proven both effective and relatively safe. Although other systems have doubtless been perfected, the "Proceedings" here presents a description of the Alaskan system for information purposes only in the public interest.

SAFE QUICK RECOVERY METHODS CALLED FOR

With a productive trend toward towing larger barges at faster speeds, accidents as serious or more serious than this will most likely become more common. Consequently, it is suggested that early steps be taken by responsible parties to provide for the quick capture after breaking loose even during unfavorable weather conditions. The recapture method here describes one, doubtless among others, that has proven operationally successful as well as apparently effective and relatively safe.

INEXPENSIVE EQUIPMENT

This barge recapture system utilizes an auxiliary towline arrangement using surplus towwire. In regular service towwires are normally renewed every 12 to 18 months and the replaced wire sold for scrap. This is an important fact because the used towwire can be used as the principal component in the emergency towing system described here and would be the largest expense if purchased new.

METHOD EXPLAINED

The emergency towing system is arranged aboard the barge and employed as follows:

A chain bridle is secured to the bow as part of or as a supplement to the regular towing bridle. The chain is led through or outboard of all obstructions to a point where it can be shackled to an eye at the end of the

auxiliary towing wire. The auxiliary towline is laid above the fender aft along one side across the stern and forward to the bow on the other side. An eye in the end of the towline is shackled to a similar eye or socket in a lighter more flexible "Swedish" wire.

The "Swedish" wire then is laid aft alongside the towwire back across the stern to a point at about the centerline. At this point the "Swede" wire is shackled in a three-way arrangement to both a breaking strap, which keeps the line in place, and a floatline which is towed astern. The floatline must be buoyant, at least four times stronger than the breaking strap, and about 200 feet long. The "Swede" wire and auxiliary towing line are secured to the vessel by light metal straps just strong enough to hold the wires in place against the forces of weather. The straps are fastened by small nails or spot welds. To recover a barge with this system aboard, the towboat operator grapples for the floatline, takes it to his gypsy head and heaves around until the "Swede" wire appears. He may rerig as necessary or continue hauling in until the auxiliary towwire is aboard and secured. Although the auxiliary towwire is shorter than a normal towing line it will be long and strong enough to recover and hold the tow for at least one tow into port.

The length of the "Swede" wire may be varied by flaking across the stern to vary its length, if desired. The floatline length is determined by how close the tug can approach the tow in an unfavorable situation.

This is a system which may be installed aboard any towed barge. It is simple, maintenance free, inexpensive, and a practical step in the direction of greater safety at sea.

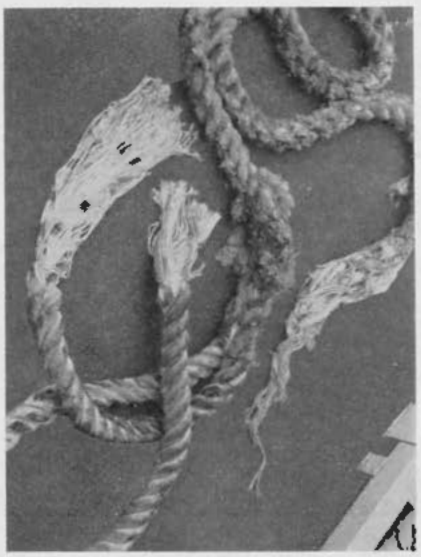
In the 3 years since this system was installed on barges operating in Alaskan waters, three barges equipped as described have broken loose from their tows and were in each case quickly recovered with a high degree of safety.

ABOUT THE AUTHOR

LCDR Macri, a native of Port Chester, N.Y., graduated from Kings Point in 1945. He served in both the Merchant Marine and Navy prior to entering the Coast Guard in 1950. He has served aboard Coast Guard cutters and is presently performing Marine Inspection duties at Seattle, Wash.

DEATH UNDER THE WHIP

IN THE VERY early days of shipping, it was customary in such ancient countries as Greece and Phoenicia to take prisoners of war and other captives and send them to sea as galley slaves. An overseer walked back and forth over these men whipping them unmercifully when the captain demanded greater speed or maneuverability. Many of these slaves were whipped to death. With the fall of these ancient empires and the advent of sail, deaths of this type decreased until finally, as the end of the 19th century approached, the advent of the steam engine and new laws of the maritime industry made death under the whip at sea virtually nonexistent. The developments and technology of the present century, however, brought with them a new era of whipping and death. This time the whip was not one wielded by a man, but rather one invented by man. Whipping synthetic fiber line is a most lethal adversary.



LETHAL Parted strands appear on the right.

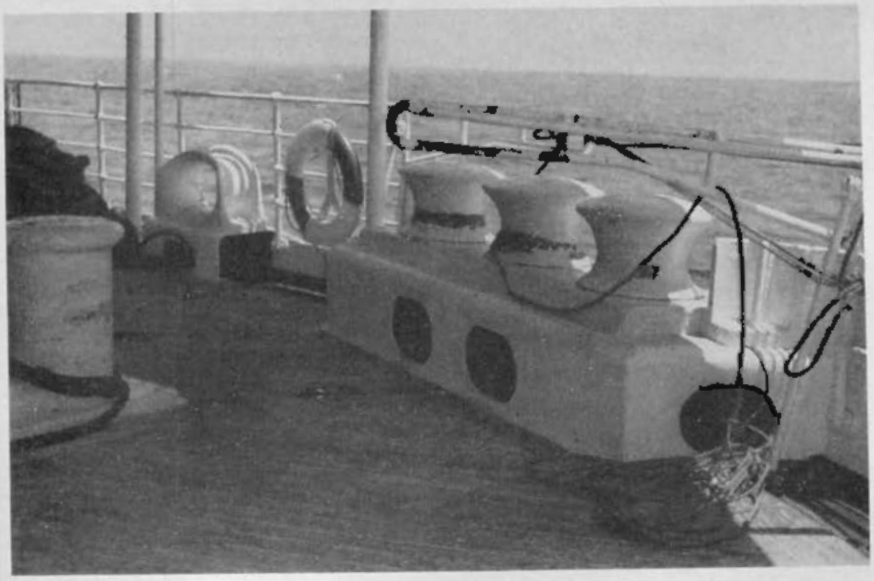
NO EXPERIENCE NECESSARY

These tragic deaths are unlike those deaths of the past in that they can be avoided by a conscious effort of all seamen to maintain sound safety practices. Unfortunately, these practices cannot always be learned from experience because it takes only one lash of a line which has parted under excessive strain to fell a man. Lessons must be learned from what has already happened in hopes that similar incidents will not occur or that they will at least be reduced in number. In each of the following cases the victims had failed to take the special precautions necessary when handling synthetic line.

A foreign tank vessel was recently departing an American port when insufficient safety precautions in conjunction with misunderstood signals and a synthetic line under strain resulted in the tragic death of a young seaman. Two tugs, one stationed off the ship's bow and the other off the ship's stern, passed lines to the ship. The line in question was passed from the tug tending the vessel's stern to the crew at the after mooring station. It was passed through a closed chock and several turns were taken around the capstan. Two men, one of these the young seaman, tended the line. Another crewmember began to pass the stopper in preparation for making fast to the bitts.

SIGNALS CROSSED

At this point, signals were crossed, and the master of the after tug, believing the line to be secure, moved ahead to take up the slack. After the slack had been taken up, he notified the vessel's pilot that the line was secure when in reality heaving turns were still on the capstan. The pilot then ordered him to begin pulling the ship's stern off the dock. This order was fulfilled; and when the stern was about 40 feet off the dock, the pilot ordered the forward tug to begin pulling the bow out. As the bow began to rapidly move out it was necessary to order the stern tug to increase speed to facilitate a parallel movement away from the pier. The master of the after tug increased speed, but suddenly felt the tug surge ahead and saw the line reeving through the chock on board the vessel. The pilot was notified of the apparent disconnection and the job of undocking was completed without the further assistance of the tugs.



DEATH SCENE Eye of nylon towing hawser lead through rolling chocks placed over starboard quarter bitt at left.

ONE INJURED, ONE DEAD

When the ship was off the dock and in the channel, the master was notified that the two men who had been tending the line on the capstan had been injured. They were removed to the hospital where one was pronounced dead and the other was treated for injuries caused by the whipping line.

Investigation showed that the line had not parted, but that the tremendous strain on the unsecured line had caused it to slip off the capstan.

The line should have been secured to the bitts with all seamen standing well clear of the line. If, in an emergency, a line had to be left on a capstan, it should be so secured that the seamen would not have to tend it under strain.

ANOTHER DEATH

Another case in which a man was killed occurred while an American vessel was docking without the assistance of tugs. The seaman was at his mooring station on the forecastle. As the vessel approached the dock, the eyes of two headlines were sent ashore and placed over bollards on the dock. One of these was a nylon line which was led from the starboard windlass drum through the bullnose and then to a bollard on the pier. When the lines were put out they were leading forward, but as the vessel moved into the slip the nylon line began tending aft. It soon became a spring line and began taking a heavy strain.

When the chief mate, apparently tardily, observed this strain, he ordered the men tending the line, which had five turns on the windlass drum, to slack off by removing some of the turns. They were unable to throw off enough to allow either surge or free run. As the strain increased, the man on the windlass attempted to help by putting the windlass control in a down position in an effort to slack the line rapidly. The vessel, however, was taking up slack faster than it could be paid out, and the line parted midway between the ship and pier. As it parted, the elasticity of the nylon caused it to whip back on deck striking two seamen. One of these seamen died, and the other was hospitalized.

SAME VILLAIN

The most important contributing cause was the apparent lack of personnel safety precautions. The entire group of men including supervisory personnel on the forecastle stood by and observed the strain increasing until the line snapped and pandemonium broke loose. Sufficient turns had been taken on the windlass for a particular task (for warping ahead by bowline), but too many apparently for the subsequent emergency which called for quick release and payout or throwoff.

RECENT WHIP DEATH

A more recent case involved a nylon line which parted and killed two men in one lash. A vessel, docked portside to, was being turned around at the dock by two tugs. The turning space was limited by vessels at the next berth. The plan for the maneuver called for one tug to pull at a 90° angle from the vessel's starboard quarter. A second tug was to push on the ship's port quarter. The tug which was to do the pulling passed a line to the ship, an eye at both ends.

The operation was commenced and progressed smoothly until the ship was almost perpendicular to the dock. At this point, the master of the pulling tug apparently decided that his relative position to the vessel was not as he desired. In an attempt to get back the proper position he slowed his engines and turned his tug. As the tug approached the desired position, the master of the tug increased speed rapidly, took up the slack, and placed the line under a heavy strain. Seconds later the line parted close to the bitts on the tug and whipped back to the after mooring station of the ship. Three seamen were knocked to the deck. Two of these men died instantly, and the third was hospitalized.

DEATH SCENE CONGESTED

In this case, there were a number of additional crewmembers in the vicinity of the whipping line besides those three men who were struck. Considering the fact there was no way of easing or tending the line other than chopping it free with an axe, because an eye was over the bitts on both vessels only one man was actually needed to stand by this line and he at a safe distance. Instead there were a number of crewmen standing around a nylon line as it stretched under a heavy strain.

LESSONS

Easing or tending synthetic line while under strain is always a hazardous operation. The safest procedure is to secure line to the bitts, all hands stand well clear, and line be eased or otherwise tended only after the strain is off. Securing a towline to a capstan or windlass drum should be resorted to only in extreme cases such as a situation where it must be *immediately* heaved in when the tug casts off. Easing of nylon line under strain is particularly hazardous since diameter of line decreases as it stretches around the bitt in succeeding turns. The exit diameter is much smaller than entrance diameter. With closely spaced turns it is difficult to slack the line without losing control.

WHIPPING SYNTHETIC LINE IS A MOST LETHAL ADVERSARY

1960 AND 1948 INTERNATIONAL RULES COMPARED: MAJOR RULES OF ROAD REVISIONS EXPLAINED

The International Regulations for Preventing Collisions at Sea—commonly called International Rules of the Road—were carefully reviewed at the International Conference for the Safety of Life at Sea held in London during 1960. Delegates of the various maritime nations represented drafted a set of International Rules of the Road intended to replace the 1948 Rules which are now generally accepted throughout the world.

The Intergovernmental Maritime Consultative Organization (IMCO), which has the responsibility for coordinating the simultaneous changeover from the 1948 to the 1960 Rules, recently announced that there is now substantial unanimity among maritime nations towards acceptance of these revised Rules. Understandably, any changes to these International Rules must be put in force simultaneously by all nations accepting them. To this end, IMCO has set *1 September 1965* as the date when the 1960 International Rules of the Road will become effective, replacing the 1948 Rules.

The United States has already enacted the legislation which enables the President to make these 1960 International Rules binding upon U.S. vessels operating on waters where they apply. It should be clearly understood that our Inland, Great Lakes, and Western Rivers Rules of the Road will not be affected by these changes. The 1960 International Rules will only apply in areas where the existing International Rules are now in effect.

The "Proceedings" published the 1960 Rules in toto in the October issue. This article, comparing Rule 1, is the first of a series of 10 which will point out the differences, rule by rule, between the 1948 and 1960 Rules.

In the following presentation, the 1960 Rule appears in standard roman type unless it represents a substantial revision of the 1948 Rule. A 1960 Rule substantially revising a 1948 Rule is printed in boldface type immediately followed by the superseded 1948 Rule. A resume of primary changes follows the rule presentation.

PART A—PRELIMINARY AND DEFINITIONS

RULE 1

1960 INTERNATIONAL RULES

(a) These Rules shall be followed by all vessels and seaplanes upon the high seas and in all waters connected therewith navigable by seagoing vessels, except as provided in Rule 30. Where, as a result of their special construction, it is not possible for seaplanes to comply fully with the provisions of Rules specifying the carrying of lights and shapes, these provisions shall be followed as closely as circumstances permit.

(No change from 1948 Rule).

(b) The Rules concerning lights shall be complied with in all weathers from sunset to sunrise, and during such times no other lights shall be exhibited, except such lights as cannot be mistaken for the prescribed lights or do not impair their visibility or distinctive character, or interfere with the keeping of a proper lookout.

To this point no change from 1948 Rule; To the 1948 Rule is added the following:

The lights prescribed by these Rules may also be exhibited from sunrise to sunset in restricted visibility and in all other circumstances when it is deemed necessary.

(c) In the following Rules, except where the context otherwise requires:

(i) The word "vessel" includes every description of water craft, other than a seaplane on the water, used or capable of being used as a means of transportation on water;

(No change to 1948 Rule).

(ii) The word "seaplane" includes a flying boat and any other aircraft designed to manoeuvre on the water;

(No change to 1948 Rule).

(iii) The term "power-driven vessel" means any vessel propelled by machinery;

(No change to 1948 Rule).

(iv) Every power-driven vessel which is under sail and not under power is to be considered a sailing vessel, and every vessel under power, whether under sail or not, is to be considered a power-driven vessel;

(No change to 1948 Rule).

(v) A vessel or seaplane on the water is "under way" when she is not at anchor, or made fast to the shore, or aground;

(No change to 1948 Rule).

(vi) The term "height above the hull" means height above the uppermost continuous deck;

(No change to 1948 Rule).

(vii) The length and breadth of a vessel shall be her length overall and largest breadth;

Changed, the 1948 Rule reads:

(vii) The length and breadth of a vessel shall be deemed to be the length and breadth appearing in her certificate of registry;

(viii) The length and span of a seaplane shall be its maximum length and span as shown in its certificate of airworthiness, or as determined by measurement in the absence of such certificate;

(No change in 1948 Rule).

(ix) Vessels shall be deemed to be in sight of one another only when one can be observed visually from the other;

(New, no 1948 counterpart).

(x) The word "visible", when applied to lights, means visible on a dark night with a clear atmosphere;

(Same as (ix) of the 1948 Rules).

(xi) The term "short blast" means a blast of about 1-seconds duration;

(Same as (x) of the 1948 Rules).

(xii) The term "prolonged blast" means a blast of from 4- to 6-seconds duration;

(Same as (xi) of the 1948 Rules).

(xiii) The word "whistle" means any appliance capable of producing the prescribed short and prolonged blasts;

Changed. 1948 Rule reads:

(xii) The word "whistle" means whistle or siren.

Definition of "tons" deleted. 1948 Rules reads:

(xiii) The word "tons" means gross tons.

(xiv) The term "engaged in fishing" means fishing with nets, lines, or trawls but does not include fishing with trolling lines;

(New. This Rule has no 1948 counterpart).

PRIMARY CHANGES

(1) The 1960 Rule allows the use of navigation lights during daylight hours in restricted visibility.

(2) Definitions of vessel length and breadth have been changed to reflect length overall (i.e., the distance measured from the foremost part of the stem to the aftermost part of the stern) and largest breadth rather than registry length and breadth.

(3) An explanation has been added which establishes that one vessel must be able to be visually observed from the other before they are "in sight of one another" as used in these Rules. Therefore radar contact, by itself, does not constitute vessels "in sight of one another."

(4) Definition of "tons" has been deleted since vessels are now defined by length rather than tonnage.

(5) "Whistle" has been redefined.

(6) Definition of "engaged in fishing" has been added.

MARITIME SIDELIGHTS

NEW COMPUTER FOR AMVER

The U.S. Coast Guard in New York has awarded a contract to prepare a new computer space for the Atlantic Merchant VEssel Report System (AMVER) in the U.S. Custom House.

A new electronic data processing system will be installed to replace an existing system by October 30, 1964. The original computer system was placed in operation in July, 1958, when the Dutch liner SS *Groote Beer* sent the first AMVER message.

The new system will permit greater efficiency and range, including an AMVER plot for the South Atlantic Ocean immediately and one for the Pacific Ocean later.

Normally, the Coast Guard has on plot in the Atlantic Ocean more than 900 vessels of 62 nations that participate in the voluntary maritime safety program.

Photo courtesy Photo Hawaii

REAR ADMIRAL T. J. FABIK, USCG, Commander, 14th Coast Guard District; left, reads commendation presented for heroic sea rescue to Captain Joseph D. Cox, Master of the SS *President Wilson* and Chief Officer Carl Larkin. Arthur A. Chase, American President Lines' Manager in Hawaii is at right.

MARAD SETS MOORING IMPROVEMENT STUDY

A contract for a year-long mooring improvement study has been awarded by the Maritime Administration to a New York consulting engineer firm. The project is part of an overall program of the Maritime Administration aimed at reducing marine costs by improving operating efficiency.

In addition to evolving more efficient mooring methods at lower cost, the study is expected to result in suggestions for increasing personnel safety. Need for the study is particularly important now in view of the constantly increasing size of ships, highly congested dock areas, and increasing pressure to reduce in-port time.

The study contemplates no basic changes in shoreside equipment. It will concentrate on shipboard equipment and systems. A major consideration of the study will be employment of equipment which can be used with a minimum of instruction and despite language barriers.

⚓ ⚓ ⚓

The first "open-ocean" commercial hydrofoil type vessel is under construction at the Maryland Shipbuilding and Drydock Co., and is scheduled for delivery to Northwest Hydrofoil Lines of Seattle in December.

The keel of the 40-ton, 75-passenger vessel has been laid and the hull is nearly 50 percent completed. After delivery, the company hopes to break it in with a 6-month trial period around the Hawaiian Islands.

The cruising speed of the new 70-foot craft will be about 40 knots.

⚓ ⚓ ⚓

Bay pilots aboard vessels approaching Baltimore from both Cape Henry and the Chesapeake and Delaware Canal are now able to talk directly with each other and with the port's Maritime Exchange headquarters.

A ship-to-ship and ship-to-shore radio communications system has been inaugurated at the Port of Baltimore, with a total of 80 portable transistor radio sets.

The range of each set extends for a radius of 8–10 miles. Captain Howland S. Roberts, president of the Association of Maryland Pilots, said this range would eventually be increased to 30 miles.

COAST GUARD HONORS PACIFIC RESCUERS

Rear Admiral T. J. Fabik, USCG, Commander, 14th Coast Guard District, made formal presentation of commendation to officers and crew of the SS *President Wilson* September 1, 1964, in official Coast Guard ceremonies aboard the liner. The Coast Guard honored Captain Joseph D. Cox, Master of the *President Wilson*, Chief Officer Carl Larkin and crewmembers for the courageous rescue of 18 Greek sailors who had to abandon their sinking ship in a Pacific storm 600 miles southeast of Tokyo on February 3, 1964.

There was no loss of life although the entire 26-man crew of the *Agia Erini L.*, a freighter of Liberian registry, had to jump into heavy seas when the order to abandon ship was given.

The SS *President Wilson* and four other ships had responded to the ship's distress calls and were standing by on the morning of February 3.

An hour and a half after the rescue operations began, all 18 survivors and 14 men of the *President Wilson* lifeboat had been pulled aboard the liner. A Norwegian freighter rescued the eight other Greek sailors.

nautical queries

DECK

Q. What are the requirements of the regulations with respect to the manning of lifeboats?

A. There shall be for each lifeboat a number of certificated lifeboatmen equal to that specified in the tables of the regulations.

The master shall appoint a first and second in command for each lifeboat. On all services other than rivers, these persons shall be either licensed deck officers or certificated lifeboatmen.

The master shall assign to each motor-propelled lifeboat a man capable of working the motor.

The master shall assign to each lifeboat carrying a wireless and searchlight, a man capable of operating such equipment.

The master shall assign to one or more officers the duty of seeing that the lifeboats and liferafts are at all times ready for immediate use.

Q. a. What precaution must be noted by the ship's officers when working cargo at a hatch when only part of the portable hatch beams or pontoons are removed?

b. What is the purpose of the wooden ceilings under the square of the hatch opening on freight vessels?

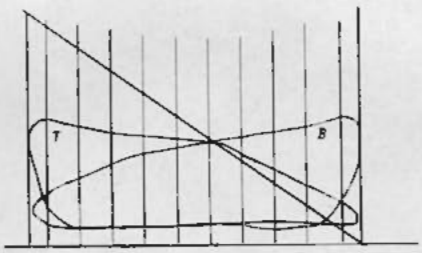
A. a. When only part of the portable beams or pontoons are removed from a vessel's hatches for working cargo, the remaining hatches or pontoons, particularly those immediately adjacent to the open part of the hatch, must be secured against being knocked out of their sockets or position by the hook or a draft of cargo. Beams may be lashed down, or if fitted with locking devices, these should be used. Pontoons may be fitted with locking bolts inserted through the hatch coaming in holes specially cut for that purpose, or if these are not available the locking bars used on top of the tarpaulins at sea should be secured over the pontoons for the same purpose. It is the duty of the ship's officers to see that these safety precautions are being observed.

b. The purpose of wooden ceiling in the square of the hatch on cargo vessels is to absorb part of the impact of loads dropped or lowered rapidly, and to distribute excess stresses thus created; thereby protecting the tank top, or inner bottom, against damage.

ENGINE

INDICATED HORSEPOWER

Q. Calculate the MEP top and bottom, of the following indicator diagram taken from a reciprocating steam engine with a 80 psi per inch spring. Determine the IHP at 60 r.p.m. with a 36-inch stroke and 30-inch diameter cylinder.



A. The average height of the ordinates in the top card is 0.90 inch. The MEP of the top card is $0.90 \times 80 = 72$ p.s.i. (answer). The average height of the ordinates in the bottom card is 0.925 inch. The MEP of the bottom card is $0.925 \times 80 = 74$ p.s.i. (answer). The average MEP is $(72 + 7\frac{1}{4}) + 2 = 73$ p.s.i.

$$IHP = \frac{73 \times 3 \times 30 \times 30 \times 0.7854 \times 60 \times 2}{33{,}000}$$

IHP = 562.91 (answer).

Q. What care should the zinc protectors installed in the sea water circuit of all condensers receive?

A. All zinc protectors installed in the sea water circuits of all condensers and heat exchangers should be thoroughly scaled at least once every 2 months, and oftener if possible, to assure that active metallic zinc surface in lieu of corrosion scale adhering to the metal is exposed to the sea water at all times. Whenever zincs are examined or cleaned, the condition of the metallic contact between the zinc and its support should be investigated as it is essential to maintain good metallic contact in order that the electrical circuit will not be interrupted. Zincs more than one-half deteriorated should be replaced.

Q. What will be the effect upon condenser operation if air is allowed to collect in appreciable quantities in the upper part of the water chests?

A. If air is allowed to collect in the upper part of the water chests in appreciable quantities, part of the cooling surface is made ineffective and circulating water flow is restricted. In aggravated cases, sufficient air will collect to cause a reduction in vacuum. If only a few tubes are affected, there will be no noticeable effect on vacuum, but overheating and expansion of the dry tubes may break the tube joints at the tube sheet and cause salt water leakage into the condensate.

Q. How may the vacuum in a condenser be determined without using the vacuum or absolute pressure gages? How is the accuracy of this method affected when the astern turbine is operating?

A. A good indication of the vacuum in the condenser may be determined by measuring the temperature of the steam entering the condenser and determining the absolute pressure of the steam by its temperature from the saturated steam tables. When the turbine is running astern, the steam may be highly superheated and under these conditions the temperature may not accurately represent the vacuum in the condenser.

Q. How would you regulate a condenser to operate most efficiently after the vessel had cleared port and settled down to steady operating conditions.

A. Regulate the quantity of the circulating water by the speed of the pump and the amount the injection is opened, so that as little water as possible, without causing a loss of vacuum, is passing through the condenser; but make sure that all tubes in the condenser are completely filled with water by trying the cocks at the top of the water boxes at each end of the condenser. There should be a rise in the temperature of the overboard discharge of from 15° to 20°, and from 5° to 8° less than the temperature corresponding to the vacuum obtained. Run the air pump just fast enough to maintain the vacuum or the condensate pump at a set speed sufficient to overcome the head created by the vacuum and the friction in the pipes, and run only sufficient air ejectors to maintain the vacuum. It will often be found that after the vacuum is raised, one air ejector may be cut out and the same vacuum maintained with fewer ejectors.

AMENDMENTS TO REGULATIONS

[EDITOR'S NOTE.—The following regulations have been promulgated or amended since the last issue of the PROCEEDINGS. A complete text of the regulations may be found in the Federal Register indicated at the end of each article. Copies of the Federal Register containing the material referred to may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.]

RECIPROCITY FORMALIZED; EQUIPMENT EQUIVALENTS ACCEPTED FOR CANADIAN MOTORBOATS IN U.S.

By Commandant's action of August 27, 1964, reciprocity arrangements were formalized allowing Canadian owned and operated pleasure craft to temporarily operate in U.S. waters without complying with U.S. equipment regulations.

The Motorboat Act of 1940, as amended, in sections 526 to 526u, inclusive, in Title 46, U.S. Code, applies to all motorboats and certain mechanically propelled vessels on the navigable waters of the United States, Guam, Virgin Islands, the Commonwealth of Puerto Rico, and the District of Columbia and every motorboat or vessel owned in a State and using the high seas (46 U.S.C. 526u). This Act makes no distinction in its application between motorboats and vessels, which are either owned in foreign countries or owned in the United States, when on the navigable waters of the United States. On the other hand, section 3 of the Federal Boating Act of 1958 (46 U.S.C. 527a) specifically exempts from the numbering provisions in that Act those foreign motorboats and vessels which are temporarily using the navigable waters of the United States. With respect to commercial motorboats and vessels (not pleasure craft), the inspection laws provide for reciprocity in the inspections of foreign and domestic vessels when carrying specified valid certificates.

The Motorboat Act provides that motorboats and certain other vessels shall carry specified types of equipment. The Commandant of the Coast Guard establishes all necessary regulations required to carry out in the most effective manner all the provisions of this Act. Such regulations have the force of law.

The laws of the Dominion of Canada and the regulations of the Department of Transport, Ottawa, Canada, have been reviewed to determine regulation parallelism. It has been determined that (1) Canada exempts from its equipment requirements, those pleasure craft (uninspected motorboats and vessels) which are registered or licensed elsewhere than in Canada if such pleasure craft comply with the laws and regulations of the country in which they are registered or licensed when such craft are temporarily using Canadian waters and have the required Customs permit; and (2) those pleasure craft (uninspected motorboats and vessels) owned in Canada are required by the laws of the Dominion of Canada and the regulations of the Department of Transport to have equipment carried which generally parallel the basic requirements of the Motorboat Act of 1940 and regulations prescribed thereunder for uninspected motorboats and vessels, as well as other additional requirements.

The Canada Shipping Act, Small Vessels Regulations of the Dominion of Canada and the regulations of the Department of Transport, Ottawa, Canada, contain requirements which generally parallel those in the Motorboat Act of 1940 (46 U.S.C. 526–526a) and the regulations prescribed thereunder as they relate to pleasure craft (uninspected vessels) in the Coast Guard pamphlet "Rules and Regulations for Uninspected Vessels" (CG–258) in 46 CFR Parts 24 to 26, inclusive (Subchapter C—Uninspected Vessels). Therefore, the Canadian pleasure craft (uninspected motorboats and vessels), which temporarily use navigable waters of the United States and are equipped in accordance with the laws and regulations of Canada will not be required to meet the specific equipment requirements in the Motorboat Act and the regulations prescribed thereunder, but will be accepted as being equivalent thereto and hence in compliance with U.S. requirements.

Part 24 of Title 46 of the Code of Federal Regulations is amended by inserting after § 24.15–1 a new § 24.15–5 reading as follows:

* * * * *

§ 24.15–5 CANADIAN PLEASURE CRAFT TEMPORARILY USING NAVIGABLE WATERS OF THE UNITED STATES.

(a) Uninspected Canadian pleasure craft (uninspected vessels) temporarily using navigable waters of the United States may carry in lieu of the equipment required by the Motorboat Act of 1940 (46 U.S.C. 526–526u) and the regulations in this subchapter, the equipment as required by the laws of the Dominion of Canada and the regulations of the Department of Transport, Ottawa, Canada.

(F.R. September 1, 1964.)

Courtesy Maritime Reporter

ACCEPTABLE HYDRAULIC CAST ALUMINUM VALVES

Hydraulic cast aluminum valves which have passed high impact shock tests and accepted under the provisions of 46 CFR 55.07–1(e)(3).

Manufacturer	Valve type	Identity	Maximum allowable pressure (psi)
Republic Mfg. Co., 15655 Brookpark Rd., Cleveland, Ohio, 44135	Aluminum alloy	*85*1¼D**	1,000 psi

THE COMMANDANT OF THE UNITED STATES COAST GUARD
WASHINGTON

19 MAY 1964.

DEAR CAPTAIN MOLVER: It has come to my attention that you and members of your crew, on 18 February 1964, effected the successful rescue of nine men from the foundering British merchant vessel *Ambassador*, approximately 400 miles south-southeast of Cape Race, Newfoundland. As Commandant of the Coast Guard, the principal agency of the United States entrusted with safety of life and property at sea, I am pleased to commend you and the personnel aboard the Norwegian merchant vessel *Fruen* for your outstanding vigilance and performance in this rescue.

The report of the Commanding Officer, USCGC *Coos Bay* (WAVP–376) disclosed that the *Fruen* stood by the disabled *Ambassador* for 18 hours and, when the *Coos Bay* was delayed in arriving on scene by heavy seas, commenced rescue operations early the morning of the 18th. After firing several rocket lines from a position a few hundred feet to leeward of the rapidly drifting *Ambassador*, one line was finally secured. Several men were pulled across a life ring before this line parted. You performed the same feat again, and you were engaged in a third rescue attempt when the *Coos Bay* arrived on the scene. At this time, your third line parted and you advised that your vessel had no more line on board. By your efforts, nine survivors had been brought aboard the *Fruen*. While the remainder of the *Ambassador*'s crew was being rescued by the *Coos Bay*, you picked up one of that vessel's drifting life rafts, and you stood by to render any further assistance. After the rescue was completed, you remained in the area to warn shipping of the derelict until the tug *Elbe* arrived late in the evening.

The careful maneuvering of the *Fruen*, a vessel several thousand tons larger than the *Ambassador*, in strong winds and in seas too rough to launch lifeboats, and the resultant successful recovery of nine survivors, is seamanship of the highest order. The unselfish efforts of all personnel aboard the *Fruen* should afford you a large measure of personal satisfaction and is deserving of praise.

I take this opportunity to express to you my most sincere appreciation for the fine humanitarian service rendered on this occasion.

Sincerely yours,

E. J. ROLAND,
Admiral, U.S. Coast Guard.

NOTE: See the "Ambassador Story" in the July 1964 issue of the Proceedings of the Merchant Marine Council on page 111.

ARTICLES OF SHIPS, STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from September 1 to September 30, 1964, inclusive, for use on board vessels in accordance with the provisions of Part 147 of the regulations governing "Explosives or Other Dangerous Articles on Board Vessels" are as follows:

CERTIFIED

Alken-Murray Corp., 111 Fifth Ave., New York, N.Y., Certificate No. 602, dated September 4, 1964, ALKEN EVEN-FLO 510.

GNR Corp., 3 Church St., Palmer, Mass., Certificate No. 603, dated September 9, 1964, POLY-CLEAN.

The Penetone Co., Tenafly, N.J., Certificate No. 604, dated September 23, 1964, POWER CLEANER.

AFFIDAVITS

The following affidavits were accepted during the period from August 15, 1964, to September 15, 1964:

W. S. Rockwell Co., 200 Eliot St., Fairfield, Conn., 06433, VALVES.

Check-All Valve Mfg. Co., 520 Elm St., P.O. Box 835, Des Moines, Iowa, VALVES.

ITT General Controls Inc., Hammel-Dahl/Foster Division, 175 Post Road, Warwick Industrial Park, Warwick, R.I., VALVES.

Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif., 91755, FITTINGS.

ACCEPTABLE COVERED STEEL ARC WELDING ELECTRODES

The following are additions and deletions to the list of electrodes which are acceptable to the U.S. Coast Guard for use in welded fabrications.

Distributors and/or manufacturers	Brand	AWS class	Operating positions and electrode sizes (inches)				
			5/32 and smaller	3/16	7/32	1/4	5/16
Combustion Engineering, Inc., 1000 Prospect Hill Rd., Windsor, Conn.	E–8018B2–LC [1]	8018	1	2			
Do.	E–9018B3–LC [1]	9018	1	2			
Do.	E–7018 [1]	7018 [2]	1				
The following arc welding electrodes will be deleted in the revised edition of CG–190:							
Hedges-Walsh-Weidner Division, Combustion Engineering Co., 200 Madison Ave., New York 16, N.Y.	CECO A–1 [2]	E6030		3	3	3	
Do.	CECO A–2(½ Mo) [2]	E7030–A1		3	3	3	
Do.	CECO A–4	E6010	1	1			
Stoody Co., 11928 East Slauson Ave., Whittier, Calif.	Stoody 316–16	No. 316–16	1				

[1] Applicable only to product manufactured at Chattanooga, Tenn., plant.
[2] D.C. current only.
[3] Electrode also acceptable in 3/32" size.

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 Sunday, Monday, and days following 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 may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. Subscription rate is $1.50 per month or $15 per year, payable in advance. Individual copies may be purchased so long as they are available. The charge for individual copies of the Federal Register varies in proportion to the size of the issue but will be 15 cents unless otherwise noted in the table of changes below. Regulations for Dangerous Cargoes, 46 CFR 146 and 147 (Subchapter N), dated January 1, 1964 and Supplement dated July 1, 1964 are now available from the Superintendent of Documents, price basic book: $2.50; supplement: 75 cents.

CG No.	TITLE OF PUBLICATION
101	Specimen Examination for Merchant Marine Deck Officers (7–1–63).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (8–1–62).
115	Marine Engineering Regulations and Material Specifications (3–1–63), F.R. 8–20–63, 10–26–63, 6–5–64.
123	Rules and Regulations for Tank Vessels (4–1–64). F.R. 5–16–64, 6–5–64.
129	Proceedings of the Merchant Marine Council (Monthly).
169	Rules of the Road—International—Inland (6–1–62), F.R. 1–18–63, 5–23–63, 5–29–63, 7–6–63, 10–2–63, 12–13–63, 4–30–64.
172	Rules of the Road—Great Lakes (6–1–62). F.R. 8–31–62, 5–11–63, 5–23–63, 5–29–63, 10–2–63, 10–15–63, 4–30–64.
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 (9–1–60).
176	Load Line Regulation (7–1–63). F.R. 4–14–64.
182	Specimen Examinations for Merchant Marine Engineer Licenses (7–1–63).
184	Rules of the Road—Western Rivers (6–1–62). F.R. 1–18–63, 5–23–63, 5–29–63, 9–25–63, 10–2–63, 10–15–63.
190	Equipment Lists (4–2–62). F.R. 5–17–62, 5–25–62, 7–24–62, 8–4–62, 8–11–62, 9–11–62, 10–4–62, 10–30–62, 11–22–62, 11–24–62, 12–29–62, 1–4–63, 1–8–63, 2–7–63, 2–27–63, 3–20–63, 4–24–63, 6–11–63, 6–15–63, 6–22–63, 6–28–63, 8–10–63, 10–16–63, 11–23–63, 12–3–63, 2–5–64, 2–11–64, 3–12–64, 3–21–64, 3–27–64, 4–29–64, 5–6–64, 5–19–64, 5–26–64, 7–2–64, 7–18–64, 7–28–64.
191	Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel (7–1–63). F.R. 9–18–63, 12–13–63, 6–5–64.
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (10–1–63).
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels (4–1–57).
227	Laws Governing Marine Inspection (6–1–62).
239	Security of Vessels and Waterfront Facilities (7–1–64).
249	Merchant Marine Council Public Hearing Agenda (Annually).
256	Rules and Regulations for Passenger Vessels (4–1–64). F.R. 6–5–64.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (11–1–62). F.R. 2–1–63, 2–6–63, 3–13–63, 4–4–63, 5–30–63, 8–20–63, 9–6–63, 10–2–63, 10–26–63, 6–5–64.
258	Rules and Regulations for Uninspected Vessels (1–2–64), F.R. 6–5–64, 6–6–64, 9–1–64.
259	Electrical Engineering Regulations (12–1–60). F.R. 9–23–61, 9–30–61, 5–2–62, 9–11–62, 8–20–63, 9–6–63, 6–5–64.
266	Rules and Regulations for Bulk Grain Cargoes (7–1–64).
268	Rules and Regulations for Manning of Vessels (2–1–63).
269	Rules and Regulations for Nautical Schools (5–1–63). F.R. 10–2–63, 6–5–64.
270	Rules and Regulations for Marine Engineering Installations Contracted for Prior to July 1, 1935 (11–19–52). F.R. 12–5–53, 12–28–55, 6–20–59, 3–17–60.
293	Miscellaneous Electrical Equipment List (6–1–64).
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (10–1–59). F.R. 10–25–60, 11–3–61, 4–10–62, 4–24–63.
323	Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (2–3–64) F.R. 6–5–64.
329	Fire Fighting Manual for Tank Vessels (4–1–58).

CHANGES PUBLISHED DURING SEPTEMBER 1964

The following has been modified by Federal Register: CG–258, Federal Register, September 1, 1964.

U.S. GOVERNMENT PRINTING OFFICE: 1964