

PROCEEDINGS

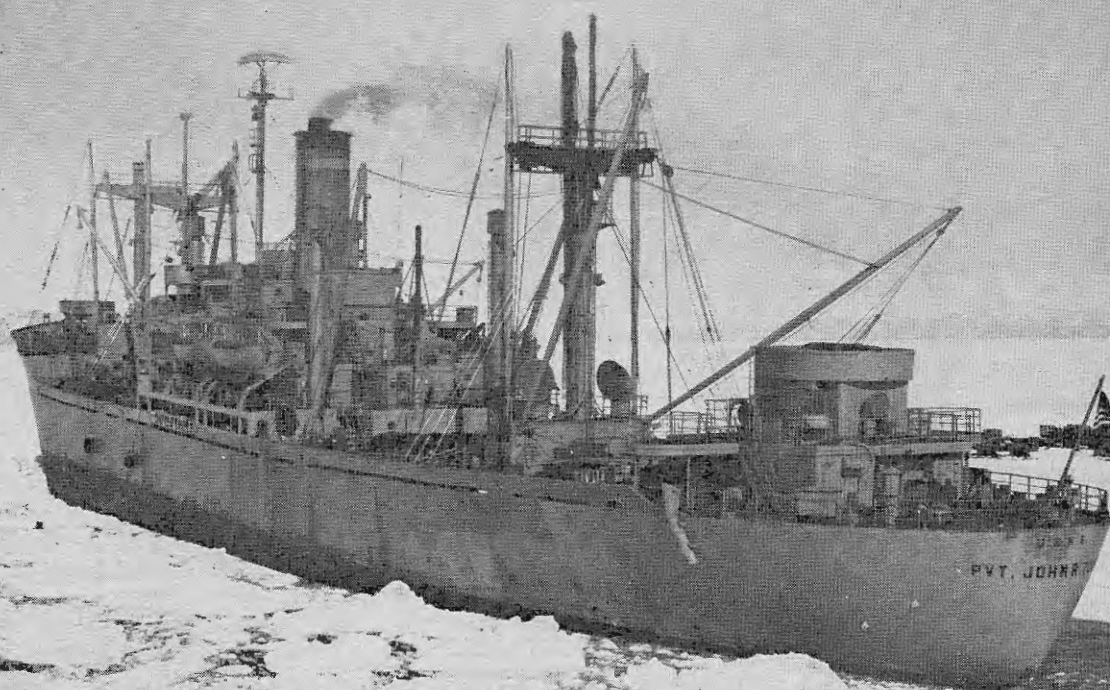
OF THE MERCHANT MARINE COUNCIL



UNITED STATES COAST GUARD

Vol. 18, No. 1 • January 1961

CG-129



Features

OCEAN VESSELS IN THE ST. LAWRENCE SEAWAY
A REVIEW OF MERCHANT MARINE LICENSING PROGRAMS

PROCEEDINGS

OF THE

MERCHANT MARINE COUNCIL

Published monthly at Coast Guard Headquarters, Washington 25, D.C., under the auspices of the Merchant Marine Council, in the interest of safety at sea. Special permission for republication, either in whole or in part, with the exception of copyrighted articles or pictures, is not required provided credit is given to the Proceedings of the Merchant Marine Council. Use of funds for printing this publication has been approved by the Bureau of the Budget October 3, 1957.

The Merchant Marine Council of
The United States Coast Guard

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20 Readers PASS IT ALONG

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FRONT COVER

The civilian manned USNS *Pvt. John R. Towle* unloading cargo at McMurdo Sound, Antarctica during Deepfreeze 60 as taken from the USCGC *Eastwind*. Vessels of U.S. Navy, Military Sea Transportation Service, and Coast Guard are currently engaged in Operation Deepfreeze 61 to support the U.S. Antarctic Scientific Research Program under the auspices of the National Scientific Foundation—a planned program of scientific observation and research.

BACK COVER

The winning poster by Lynwood Adams in the 1960 Maritime Day Poster Project. The poster has accomplished much to highlight the fact that merchant vessels are vital to our economy.

NOTICE: The Feature "Nautical Queries" will be resumed after all items in the Rules of the Road Exercise have been printed.

DIST. (SDL NO. 72)

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COUNCIL ACTIVITIES

1961 MERCHANT MARINE COUNCIL AGENDA

THE MERCHANT MARINE COUNCIL will hold a Public Hearing on Monday, March 27, 1961, commencing at 9:30 a.m., in the Departmental Auditorium, between 12th and 14th Streets on Constitution Avenue, N.W., Washington, D.C., for the purpose of receiving comments, views, and data on the proposed changes to the vessel inspection rules and regulations as set forth in Items I to XII, inclusive, of the Merchant Marine Council Public Hearing Agenda CG-249, dated March 27, 1961. This Agenda contains the changes proposed, and for certain items the present and proposed regulations are set forth in comparison form, together with the reasons for the changes where necessary.

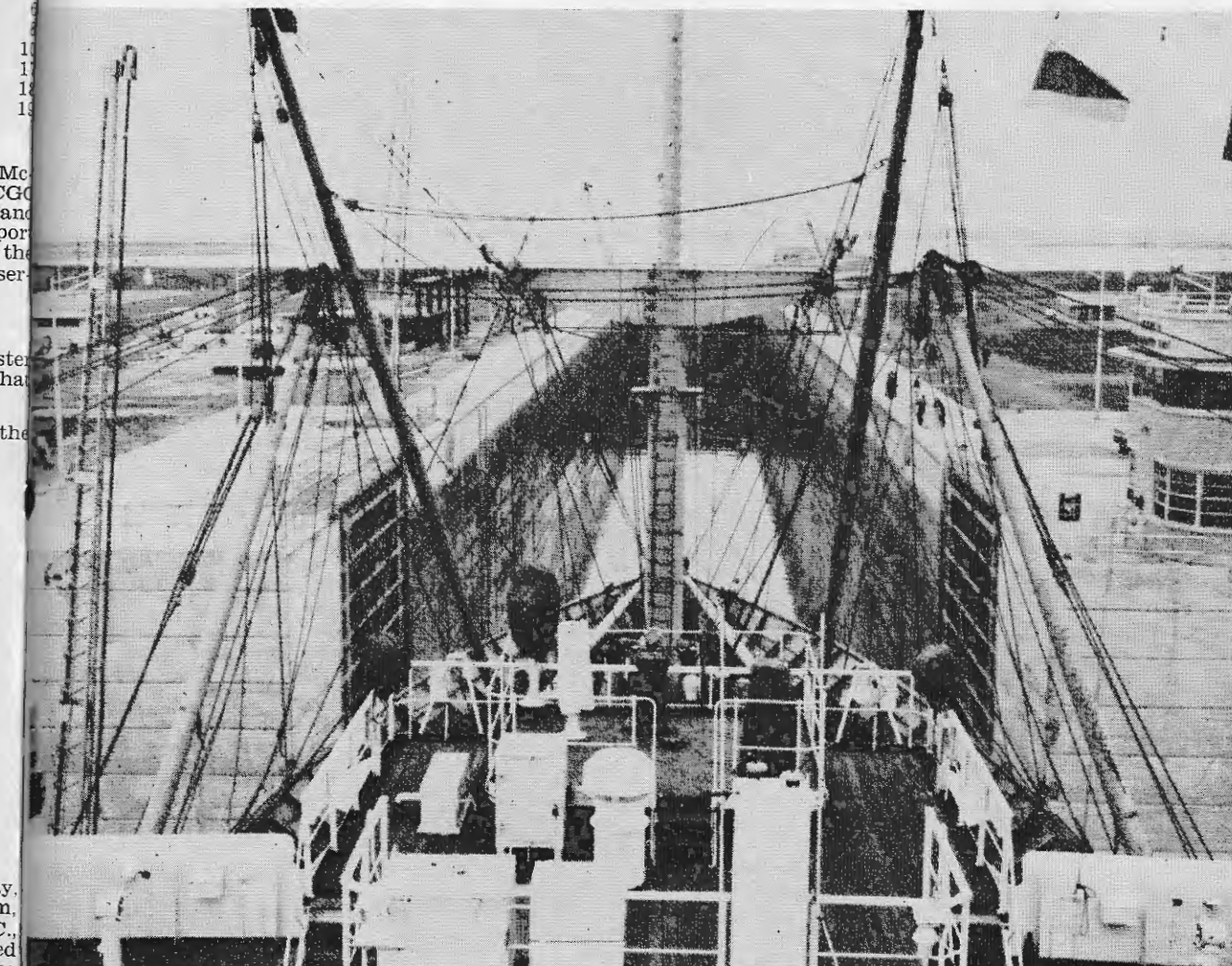
Copies of the Merchant Marine Council Public Hearing Agenda (CG-249) are mailed to persons and organizations who have expressed a continued interest in the subjects under consideration and have requested that copies be furnished to them. Copies of this Agenda will be furnished, upon request to the Commandant (CMC), U.S. Coast Guard, Washington 25, D.C., as long as they are available. After the supply of extra copies is exhausted, copies will be available for reading purposes only in Room 4104, Coast Guard Headquarters, or at the offices of the various Coast Guard District Commanders.

Comments on the proposed regulations are invited. Each person who desires to submit written comments, views or suggestions in connection with the proposed regulations as set forth in the Agenda should submit them so that they will be received prior to March 20, 1961 by the Commandant (CMC), U.S. Coast Guard Headquarters, Washington 25, D.C. Comments, views or suggestions may be presented orally or in writing at the Public Hearing before the Merchant Marine Council on March 27, 1961. If it is believed a comment, view, or suggestion clarifies or improves a proposed regulation or amendment, it is changed accordingly and, after adoption by the Commandant, the revised regulation is published in the Federal Register.

(Continued on page 12)

OCEAN VESSELS IN THE ST. LAWRENCE SEAWAY

By Captain A. Preede



THE OCEAN EVELYN enters Eisenhower Locks in the above picture by Captain Preede. Lock guard gates at let in open position.

Many of the problems encountered by oceangoing vessels in the St. Lawrence Seaway are being solved as their personnel gain experience in the use of this extraordinary water highway. In the last two seasons ocean vessels have had problems, some of which now have been solved.

VOYAGE OF THE OCEAN EVELYN

During the 1960 season Captain Preede sailed as an observer aboard the SS *Keystone State* and the SS *Ocean Evelyn*. The *Ocean Evelyn*, a 522-foot C-4, was the largest seagoing vessel ever to dock in the port of Toledo. The ship came through the Seaway without incident except for some problems in transiting the Welland Canal. The Master claimed

that in the Canal area the limit of 9 miles per hour, plus a 25-mile-per-hour wind, made maneuvering tricky. The vessel carried eight wooden fenders for the transit, but by the time the vessel was through the first three locks, the fenders were practically destroyed.

SS KEYSTONE STATE

During the voyage of the *Keystone State* the Master and pilot felt it was advisable to steam directly into the locks even though given a green light by the control station. In every case the vessel was landed at the approach wall and then moved on up to the lock entrance, keeping a line on the dock all the time. At certain angles

of approach the landing boom could not be used to put line handlers on the dock.

In one instance the ship's winches were not powerful enough to heave the vessel against the wind, and the windlass and capstan could not handle the lines rapidly enough for the vessel to be moved along the wall and into the locks under the prevailing conditions.

Captain Preede's report and recommendations were the result of these experiences. They are printed here through the courtesy of *States Marine Lines* in the hope that other vessels may have the benefit of the information contained in such records. The opinions expressed by Captain Preede are his own. ED.

SEAWAY PASSAGE

One of the greatest dangers in making the Seaway passage is the possibility of errors of judgment resulting from fatigue. Assuming the vessel starts from Montreal and makes an uninterrupted passage to Toledo, the Master is on the bridge in pilotage waters for over sixty hours. The balance of the deck gang, both officers and men, put in extremely long hours as all hands are at their stations during the passage through the Locks. While the men are able to get some rest between the Locks and during the passage through the Lakes, the Master gets none. Having the Chief Officer relieve him is no solution, as his presence on the bow is very important when the line handlers are put over on the dock. It is suggested that an Aide be placed aboard any vessels making this run so the Master can get some rest during the passage. The Aide should be a Master with experience in this type vessel, and he should be authorized to relieve the Master and accept full responsibility for portions of the run. Whether this should be done on a six-and-six basis, or whether the relief should be made only on the long stretches between the Locks must be decided on by the Office.

CREW MEMBERS AS LINE HANDLERS

The use of crew members as line handlers is very dangerous. Aside from the obvious danger to life and limb due to the method of putting the man on the dock there is the additional danger of accidents to the men on board the ship. With the double handicap of long hours and reduced complement occasioned by the loss of the men on the dock, accidents are much more likely to occur. It has been suggested by the AMMI that the

Seaway Authority provide line handlers at the Approach Walls as well as on the Lock itself. If this is not done, it might well be a good investment to send line handlers on by car from lock to lock to take the vessel's lines. It is doubtful if this would cost much more than the present method, for during the round trip the immediate cost—two line handlers, at Two Dollars each at each lock—results in a total cost of One Hundred Twenty Dollars.

NYLON MOORING LINES

An accident that happened on the *Keystone State* emphasizes one of the dangers of using nylon mooring lines. At one of the Locks, while proceeding along the approach wall toward the locks, the eye of the spring line (nylon) slipped off the bollard on the dock and snapped back all the way to the fo'c'sle head, where the eye struck one of the seamen on the head. The man was knocked unconscious, but quickly recovered; he was sent below to rest and returned to duty for his next scheduled watch. This accident could have been far more serious.

The immediate causes of the accident were:

(a) The shape of the bollard—round, with no "ears"

(b) The weather—wet—making the bollard slippery

(c) The short eye on the line making it impossible for the men to take a round turn on the bollard.

The basic cause of the accident was of course, the elasticity of the line.

VALUE OF ELECTRIC MEGAPHONE

The electric megaphones supplied the *Keystone State* for the passage amply proved their value during the run. While the more expensive megaphone which was used on the bridge was superior to the others, all of the megaphones were quite satisfactory and it is doubtful if the increased cost of the expensive type could be justified by the results. It is suggested that two electric megaphones of whatever type the office approves be placed on any C-4 making the run and three megaphones are used to give orders to the men at the winches on deck, to the bow and stern, and to the men on the dock.

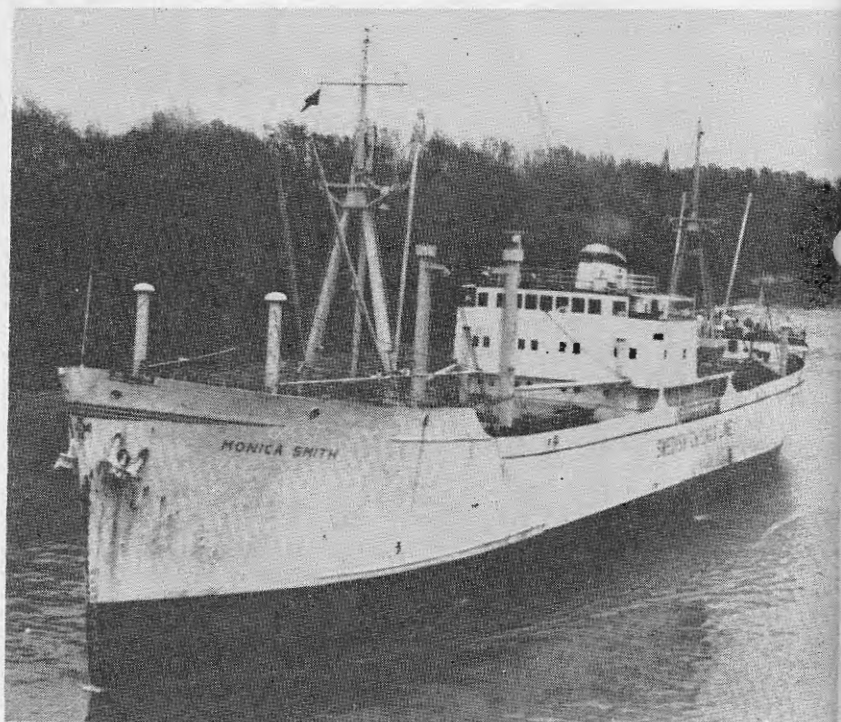
¹ The uses of nylon lines present hazards unique to nylon's physical properties. This is particularly true under conditions conducive to heavy strain such as while underway with headway while moving or maneuvering into locks. Knowledge of nylon's properties and care in its regard should eliminate such casualties. See "Handling Nylon Lines," *Proceedings of the Merchant Marine Council*, December 1959, pages 240-241.

ABOUT THE AUTHOR

CAPTAIN PREEDE began his seagoing career on United States vessels in 1923 and has sailed as Master since 1942. Since 1955, when he joined States Marine Lines, he has sailed as Master aboard various ships.

He holds a commission as Commander, USNR. He was born in Latvia at the turn of the century and has been a naturalized citizen since 1922.

Captain Preede was selected by States Marine Lines to make this report because of his wide experience and prudent capabilities as an accurate observer. The illustrations are taken from this report courtesy States Marine Lines.



MONICA SMITH, small oceangoing vessel fitted with rubbing bars for Seaway transit.

SHIP'S WINCHES

The ship's winches are not satisfactory substitutes for tension winches in this run. They do not have sufficient power to heave the ship in, they work too slowly to be used in this case. Consideration should be given to equipping any vessels that are to make this run regularly with tension winches.

FAIRLEADS

Present information is that by the end of this navigation season all ships will be equipped with PORT COLBORNE type fairleads. These fairleads are said to cost about \$1,000.00 each, and the AMMI is protesting any requirement such as this in the case of vessels using the Seaway on an occasional basis. It is probable that they will be required by the authorities of all vessels on regular runs to this area and they are definitely superior to the closed chocks on our ships. It is obvious in some instances that the angle at which the wires lead causes strain to both wires and chocks—and in fact one wire was broken during the passage as a result of this. The wire parted at the chock, indicating that the cause was a poor lead. (A secondary factor was the nature of the winches used; when the current is shut off the cargo winches the magnetic brake is engaged, and if a sudden strain comes on the wire it may part. This is not the case with a tension winch. While experienced seamen can keep a strain on the wire with the cargo winches, it is very likely that resistors will burn out after a period of continuous use in this manner.)

RUBBING BARS

As will be seen in the picture of a a-going vessel the *Monica Smith*, many vessels are being fitted with rubbing bars to protect the hull during passage through the locks. These bars are only effective along the sides of the vessel—they do very little good at the bow and stern. On the laker *T. R. Wilson* the rubbing bars are carried around the bow. This is effective due to the difference in construction of the bows of these ships. The *Keystone State* was provided with thirty additional portable fenders and the increased numbers should be placed on all ships in future.

In the various opinions expressed prior to the passage of the *Ocean Evelyn* through the Seaway considerable damage was anticipated to the ships. While strong cross winds will undoubtedly make approaches to the locks dangerous, in many ways, these



SHIP'S LINE tender landing on lock wall at St. Lambert Lock.

vessels are far better adapted to the run than are smaller, shorter vessels. The length of the vessel prevents her twisting in the locks and thus avoids damage to the propeller.

RECOMMENDATIONS

The use of tug boats even if available would be impracticable as there is no room for them to maneuver. It

is suggested that line handlers be stationed on the docks in the approaches to the locks on both sides of the channel. This would facilitate getting the vessel's lines ashore and prevent the ship being blown across the channel when the winds set her off. Under present conditions if the wind is blowing a vessel off the waiting wall side, (Continued on page 12)

A REVIEW OF MERCHANT MARINE LICENSING PROGRAMS

By Captain Roderick Y. Edwards, USCG

ON THE NIGHT of July 25, 1956, the Swedish passenger liner *Stockholm* and the pride of the Italian Merchant Marine, the SS *Andrea Doria*, were involved in collision. Many lives were lost and many persons were injured. The *Andrea Doria* sank the next day, and the cost of repairing the *Stockholm* was estimated at \$1,000,000.

On March 1, 1959, the SS *Constitution*, one of our finest American Flag passenger vessels, and the Norwegian motor tanker *Jalanta* were involved in collision while navigating in fog. The *Jalanta* was nearly cut in half. Fortunately, no lives were lost.

Again in 1959, on March 26, while navigating in fog, another fine American passenger vessel, the SS *Santa Rosa*, and the American tanker *Valchem* were involved in collision. Four members of the crew of the *Valchem* were lost and several other people were injured.

These recent, spectacular collisions involved top passenger liners which are built and operated under the most stringent safety standards, manned by able and well trained officers and crew and equipped with the latest navigational devices. The investigation in each of these casualties revealed no material failure prior to the collision; hence one can conclude only that the primary cause in each was personnel failure.

STUDY OF MARINE CASUALTIES

Recently the Coast Guard concluded an extensive study of marine casualties. This study included two of the three I have mentioned as well as 197 others involving vessels of all types. The study is statistical and factual and does not in itself draw conclusions. It does show clearly, however, that (1) the number of collisions due to mechanical breakdown is insignificant when compared with those due to personnel failures, and (2) that in each case of personnel failure there is a violation of the Rules of the Road. Other factors may be present such as radar fault, but this in no way detracts from the fact that there is a violation of the Rules of the Road in practically every casualty.

Recognition that the majority of collisions result from personnel failure in some form tends to focus attention on licensing standards and quite properly raises a question as to their adequacy.

LICENSING FUNCTION

The licensing function in this country originated with the Act of 1852 which concerned itself with the safety of life of passengers on board vessels propelled wholly or in part by steam. The language of the Act speaks of a person's eligibility for a license in terms of his character, habits of life, and knowledge and experience.

The scope of the licensing program has been greatly broadened since 1852. From the examining and licensing of only a few steamboat men, the program, by Congressional direction, has grown to include the crews of practically everything that floats and carries passengers or freight. Similarly, the scope of the requisite knowledge has been broadened by technical development in the operation and management of all types of vessels.

STANDARDS OF A PARTICULAR TRADE

The establishment of standards for licensed officers has in the past followed the advances and broadening of the industry. The standards have been traditionally general in nature and designed to be minimal. There has been no attempt to establish standards for a particular trade or other peculiar needs of a specialized operation. Generally speaking, they have followed the concept that persons meeting them should be able to carry out the navigating and operating responsibilities normally accruing to the grade for which the person is licensed. The additional training and knowledge required by a specific type of vessel or trade has been considered to be in the province of the industry.

We require each candidate for a deck license to answer questions in the operation of all vessels and upon successful completion of the examination he is licensed to serve on all vessels. At the same time we recognize that a person whose service has been exclusively in freight vessels does not by passing the examination become the most highly qualified tank vessel officer. Similarly, a person whose whole experience has been on deck in a tanker does not become by passing an examination the most highly qualified passenger ship officer.

NO SUBSTITUTE FOR EXPERIENCE

In providing avenues by which a person can meet the established

standards the Coast Guard and its predecessor agencies have held to the following principle. A competent Merchant Marine Officer is the product of actual sea experience and training. There can be several combinations of experience and training, but one without the other is not enough. Further, although training can be acquired formally or in some instances on the job there is no substitute for actual operating sea experience. Proof that we are wedded to this principle is present in the requirements for candidates in all grades, and the examination questions themselves reflect it.

To sum up we believe that seamen are made at sea under actual operating conditions but that the needs of the industry today require supplementary training in some form. To illustrate this point, our regulations call for a person to have 3 years' sea experience before he can sit for a Third Mate's or Third Assistant Engineer's license, but if the person has undergone an extensive and specialized training program designed for the development of Merchant Marine officers the required sea time is lessened. However, in the belief that there is no substitute for experience under actual operating conditions in positions of greater responsibility, we require such service experience for all higher grades.

SIMULATION OF EMERGENCIES

It would be desirable if all the questions asked a candidate were specifically directed to all the problems he might be called up to solve in the course of his employment. It has been suggested that our examining procedure is deficient because candidates are not required to give evidence of their competency under the worst possible conditions. The phrase "worst possible conditions" probably has a different meaning to each of us. To me it could mean command of a fully loaded passenger vessel which was afire and in a sinking condition in the vicinity of Iceland in midwinter. To complicate things all boats had been lost in heavy weather and the radio had been inoperable for several days. To simulate such a condition would certainly pose a problem and even if appropriate questions could be developed the correct answers would certainly be debatable.

We certainly hope that no shipmaster will ever be confronted with a situation such as the one I have just mentioned. In any event we believe that the attention of the candidate should be focused on disaster prevention measures rather than corrective measures after the fact. However, this concept does not reject the desirability of simulation of emergencies in the testing of candidates.

The task of maintaining the questions current and consonant with the needs of the industry cannot be approached lightly. The jettisoning of questions on practice and procedures, which have been present in Marine transportation for many years, without first giving considerable thought to the adequacy of the replacement is certainly ill advised.

MULTIPLE CHOICE ANSWER

Our present program calls for the elimination of dead wood either in the questions themselves or the method and procedures employed. Recently, we eliminated several complete subjects which in themselves were nothing more than mental gymnastics and which were already present in other forms that have meaning. We are at present converting the questions from the traditional narrative type to the multiple-choice answer type. At first the conversion will be limited to those subjects which readily lend themselves to such conversion, but ultimately we hope to extend it to all but the mathematical subjects. Additionally, and I am sure this will please

many of you who know what is involved in passing one of these examinations, we no longer require a candidate to write the question as well as the answer.

RECENT PROGRAMS

Two new programs looking to the continued proficiency of deck officers have been developed. The first concerns radar competency. That deck officers navigating radar equipped ships should be qualified in the use of radar is indisputable. The recommendations of the 1960 International Conference for Safety of Life at Sea speak forcibly on the subject of radar competency. To the end that all American radar equipped vessels of over 300 gross tons, navigating on ocean, coastwise, or Great Lakes routes are manned by officers qualified in the use of radar, a new regulation has been adopted. This regulation, set forth in 46 CFR 157.20-32, appeared in the Federal Register and becomes effective on all such vessels certificated after 1 May 1962.

RADAR COMPETENCY

A large number of deck officers have on their own volition become qualified and presently have evidence of the fact either in the form of a letter from the Coast Guard or a certificate of graduation from an approved school. In addition all persons that have raised their licenses or who have been originally licensed since 1 January 1959 qualified themselves. In

spite of this assurance that a good number of officers were radar qualified it was deemed advisable to set the effective date of this new regulation sometime in the future so that all interested parties could be given adequate notice.

This regulation will not require masters to prove their competency in radar who obtained their licenses before 1 January 1959 and who have no intention of sailing on radar equipped ships. Neither will it require Mates to qualify who never intend to raise their licenses in grade or sail on radar equipped vessels. It will, however, insure that officers who do sail on certain radar equipped ships will have to take the necessary steps to qualify themselves. The qualification procedure is quite simple. The Maritime Administration Schools at New York, San Francisco, and New Orleans have been approved by the Commandant, and certificates of graduation are accepted as proof of qualification. The course of study takes one week of full time attendance. Alternatively, officers may, if they desire, train themselves and take our examination. This examination concerns itself solely with the navigational and operational aspects of radar and does not concern itself with higher technical maintenance problems.

RULES OF THE ROAD

The other significant licensing program with which we are presently concerned is that looking to the continued proficiency of licensed deck officers in the application of the Rules of the Road. As I have indicated before, present casualty studies have proved conclusively that in practically every collision there is a failure to observe the Rules of the Road. Supplementing this we find a disturbing number of failures in this subject on the part of those persons seeking either to raise their licenses or extend their scope. In all honesty we do not believe that all deck officers involved in collision willfully violate the Rules nor do we believe that all these officers are unfamiliar with them. However, that there are elements of both seems to be the only reasonable conclusion.

That a deck officer should have complete mastery of the proper application of the Rules of the Road is a well established fact and in keeping therewith a new regulation was adopted. This new regulation will require that each officer applying for renewal of his license demonstrate his knowledge of the application of the

ABOUT THE AUTHOR



CAPTAIN RODERICK Y. EDWARDS, a former merchant marine officer, began his sea career in 1928. He was licensed as Third Mate in 1931 and Master in 1938. He joined the Bureau of Marine Inspection & Navigation as hull inspector in 1941 and was commissioned Lieutenant Commander in the Coast Guard in 1943.

During World War II Captain Edwards saw action in the European theater. Since that time he has served in the Merchant Marine Hearing Unit in New York and the Program Planning Division at Coast Guard Headquarters. In 1949 he was appointed Officer in Charge, Marine Inspection and Captain of the Port of Philadelphia, and in 1957 as Assistant Chief, Merchant Vessel Inspection Division in the Office of Merchant Marine Safety at Coast Guard Headquarters. He has been Chief of the Merchant Vessel Personnel Division since 1959.

Captain Edwards presented this paper at a panel discussion of the Marine Section, National Safety Council at their annual meeting in Chicago in October 1960.

Rules of the Road. This demonstration is not an examination in the sense of the word. It is educational in principle and will be so applied. The licensed deck officer applying for renewal of his license will merely be required to execute a statement signifying that he has read the applicable Rules within the 3 months next preceding the date of application for renewal and will be required to give answers to a limited number of multiple-choice type questions concerning specific situations. In answering these questions the applicant will have

available to him the Rules of the Road and, further, the questions will show which Rules apply. Properly administered this procedure will take a very short period of time and, we believe and fervently hope, will bring forcibly to the attention of all concerned the essence of the Rules. This new procedure will extend only to those persons who are actively engaged in their profession either at sea or in positions ashore and will not affect in any way those persons who have swallowed the anchor and are presently not associated with the industry. As has

always been the case, these latter persons will be required to pass an examination in the Rules.

You can be assured that your comments, criticisms, and recommendations are earnestly solicited and are at all times gratefully received. It is only through a reasonable exchange of ideas between those in industry, both management and labor, and the Coast Guard that we can ever be sure that our standards, methods, and procedures are properly designed and carried out in the interest of safety.

RENEWAL OF DECK OFFICERS' LICENSES

RULES OF THE ROAD EXERCISE

The procedure whereby deck officers actually engaged in their profession will renew their licenses was explained in the November issue of the PROCEEDINGS and in Navigation and Vessel Inspection Circular 7-60. The multiple-choice-type questions, which are to be answered as a demonstration of the deck officers' knowledge of the Rules of the Road, will be reprinted here until all of the questions contained in the exercise have been used.

INTERNATIONAL RULES OF THE ROAD

6. The day signal of a basket is displayed by:

- (a) Dredges
- (b) Trawlers
- (c) Cable layers
- (d) Boats tending divers

(See Rule 9)

7. A sailing vessel of 20 tons or upward under way makes her fog signal on a:

- (a) Bell
- (b) Gong
- (c) Whistle
- (d) Foghorn

(See Rule 15)

8. In a narrow channel, power-driven vessels shall whenever possible:

- (a) Stay in the middle
- (b) Keep to the left
- (c) Keep to the right

(See Rule 25)



9. Which of the circles sketched has a white sector showing the arc of visibility of a stern light?

(See Rule 10)

INLAND RULES OF THE ROAD

6. Rowing boats under sail or oars must show:

- (a) Side lights
- (b) Mast lights
- (c) Stern light
- (d) A white light in time of prevent collision

(See Article 7)

7. In fog, an anchored vessel must ring the bell every:

- (a) Minute for five seconds
- (b) Two minutes for five seconds
- (c) Three minutes for ten seconds

(See Article 15)

8. Risk of collision can best be determined by:

- (a) Checking the distance of an approaching vessel
- (b) Carefully watching the compass bearing of an approaching vessel
- (c) Watching the other vessel for any signals he may give
- (d) Observing the range of the approaching vessel's masts or mast lights

(See Preliminary to Steering and Sailing Rules)

10. On each of the vessels towed at night, as sketched, you should see, looking from abeam:

- (a) A green light

- (b) A red light
- (c) A masthead light
- (d) A forward white light

(See Rule 5)



9. A vessel signifies intention to pass a dredge by blowing:
- One short blast
 - Two short blasts
 - Three short blasts
 - One long blast

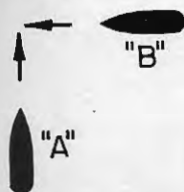
(See Pilot Rule 80.26)

10. Passing within 200 feet of floating plants in channels, maximum speed is:
- Three miles per hour
 - Four miles per hour
 - Five miles per hour
 - Six miles per hour

(See Pilot Rule 80.27)

GREAT LAKES RULES OF THE ROAD

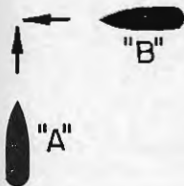
6. If you were in charge of navigation of "B," you should:



- Go under stern of "A"
- Back down on engines
- Stop
- Hold course and speed

(See Rule 20)

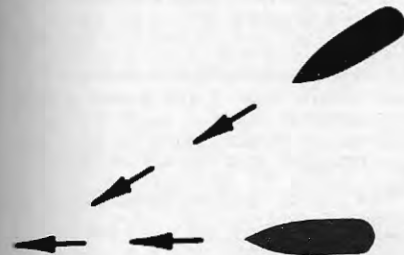
7. When collision cannot be avoided by "A" alone, "B" must:



- Cross under "A" 's stern
- Stop
- Back down
- Take such action as will aid to avert collision

(See Rule 27)

8. If in overtaking another vessel as sketched, you occasionally saw her mast lights and green side lights:



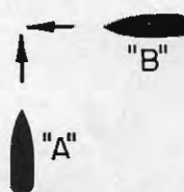
- The other vessel must keep clear of you
- You and the other vessel share equally the responsibility for keeping clear
- You should assume that it is your duty to keep clear

(See Rule 22 and Pilot Rule 90.8)

9. The Rule of Special Circumstances would apply in all but one of the following cases. To which one would it not apply?

- When meeting several vessels at one time
- When meeting a tug with tow bound downstream in a heavy current
- When meeting a vessel unable to maneuver in accordance with the Rules
- When meeting a vessel end on or nearly end on

10. In the situation sketched, one distinct blast by "B" means:



- I am directing my course to starboard
- I intend to hold course and speed and cross your bow
- I intend to go under your stern
- You should direct your course to starboard

(See Pilot Rule 90.10)

WESTERN RIVERS RULES OF THE ROAD

6. In fog, an anchored vessel must ring the bell every:

- Minute for five seconds
- Two minutes for three seconds
- Three minutes for ten seconds
- Four minutes for five seconds

(See Rule Numbered 15)

7. Risk of collision can best be determined by:

- Checking the distance of an approaching vessel
- Carefully watching the bearing of an approaching vessel
- Watching the other vessel for any signals he may give
- Observing the range of the approaching vessels' masts or mast lights

(See Preliminary to Steering and Sailing Rules)

8. A vessel intending to pass a dredge first blows:

- One distinct blast
- Three distinct blasts
- Four short and rapid blasts
- One long blast

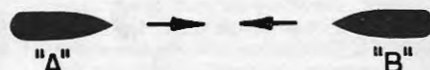
(See Western Rivers Pilot Rule 95.60)

9. Passing within 200 feet of floating plants in channels, maximum speed is:

- Three miles per hour
- Four miles per hour
- Five miles per hour
- Six miles per hour

(See Western Rivers Pilot Rule 95.61)

10. If you were in charge of navigation of "A," you should:



- Blow one distinct blast and turn right
- Blow two distinct blasts and turn left
- Hold course and speed, letting "B" take avoiding action
- Blow four short and rapid blasts

(See Rule Numbered 18)

WANTED: ACCIDENT CASE HISTORIES

The National Safety Council requests assistance in setting up a file consisting of a wide variety of accident case histories. The accident reports will be classified by agency in accordance with the American Standards Association method (*American Recommended Practice for Compiling Industrial Accident Causes*, Z16.2 Code).

The Council will record disabling injury accidents caused by agencies of the major groups, particularly machines of all types.

For this project the Council is not interested in recording accidents caused by tripping, and falls on the same level, or strains caused by lifting or unusual positions, etc.

A "fancy" write-up is not required. Just tell in your own words how the accident occurred, what caused it, and the method used to prevent recurrence.

Mail them to Industrial Department, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Send them at your convenience, one at a time or by bunch; on a current basis, or dig into your files. Names of companies, individuals, and location will be kept confidential.

NAVIGATION LIGHTS

By CDR N. L. Fendig, USCG

IMPROVEMENTS in the navigation lights of ships and boats have long been a desire of the mariner. It was a matter of concern at the recent SOLAS Conference. A number of nations, including the United States, sought agreement on minimum objective standards of candlepower and

A significant number of inquiries have been received by the Coast Guard from manufacturers and other interested parties asking how the recent SOLAS Convention will affect new developments designed to improve the safety of navigation.

The summary record of the committee which acted upon the matter of lights at the SOLAS Conference contains the following:

In adopting the following text for insertion in Rule 28, the Committee understood that it would have the effect of forbidding the use of other visual signals associated with sound signals provided their character was not such as to constitute a breach of Rule 1(b):—

(d) All whistle signals provided in Rule 28 (a) and (b) may be further indicated by a visual signal consisting of a white light so constructed and located as to be visible all around the horizon, of the same range of visibility characteristics as those lights required by Rule 2(a) (i) and (ii), and so devised that it will operate simultaneously and in conjunction with the whistle sounding mechanism, and remain ignited and visible during the same period as the sound signal.

CDR N. L. Fendig, USCG, discusses some of the aspects and problems involved in the efficiency and improvements of navigation lights in the following article. The possible use of automobile type headlights, flashing running lights and the like raises many questions. At present there does not appear to be sufficient information available to justify any conclusions as to their desirability or acceptability.

A "Rules of the Road Panel" of the Merchant Marine Council was recently established. It is expected that this new panel will study such problems as described in this article. ED.

color which could make more specific the requirements of the International Regulations for the Prevention of Collisions at Sea. That such standards were not adopted by the SOLAS Conference at the 1960 session in London may be attributed to the views of those nations which have many vessels still fitted only with oil lamps. However,



THE POSSIBLE USE of automobile headlights, flashing running lights and the like raises many questions. At present there does not appear to be sufficient information available to justify any conclusions as to their desirability or acceptability.

a recommendation was adopted looking toward improvements in navigation lights reading as follows:

Efficiency of Navigation Lights

The Conference, recognizing that

(i) the efficiency of the International Regulations for Preventing Collisions at Sea during the hours of darkness in all conditions when the Steering and Sailing Rules apply is dependent upon the ability of a mariner to see and to recognize, at a sufficient range to take appropriate action, the red, green, and white lights prescribed in those Regulations, and

(ii) while not regarding the minimum ranges of visibility as defined in those Rules as being inadequate, its freedom to increase those minimum ranges and thereby to provide an additional margin of safety to take account of the increased speeds of vessels is necessarily limited by the need to specify ranges capable of achievement by oil lamps suitable for installation on vessels recommends that the Organization, consulting as necessary with the International Standards Organization and the International Civil Aviation organization and seeking such other advice as may be appropriate, should collate information concerning transmissivity and chromaticity as they affect ships' navigation lights and if necessary initiate further studies on an international basis.

A recent article¹ raised a number of interesting questions on present lighting requirements. It also indicated that some of these current regulations have not been adequately publicized and the reasons for them not explained. One such regulation is 46 CFR 113.55-20 which requires that sidelight screens be painted with glossy black paint. The reasons for painting the screens in this manner are best expressed in the Paint and Color Manual of the U.S. Coast Guard which reads as follows:

In order to contain the reflected light from running light screens within the limits allowed by the Rules of the Road, light reflection from the forward part of the screen must be kept to a minimum. The geometry of light screens and the location of the light sources are such that only light emitted by specular reflection lies within the prescribed limits whereas light emitted by diffuse reflection from the forward part of the screen exceeds the prescribed limits.

Therefore, a paint providing high specular reflection and low diffuse reflection

¹ "Navigation Lights Can Be Legal," by Captain E. P. Perry, USN (Ret.), *Proceedings of the United States Naval Institute* for June 1960.

should be used. A high gloss black enamel performs this function best and therefore be used on running light cases.

The same article² suggested the use of neon type lamps as a means of limiting the arc of visibility of sidelights. While this suggestion is certainly constructive, improvement could well be attained in the brightness of such lights as well as in the delineation of their boundaries.

The presently used incandescent filament lamps are fitted with colored lenses to control the color of emitted light. Such lenses reduce the effective candlepower of the light. When thick lenses with dense colors are employed, the amount of light transmitted is estimated to be only about 7½% for the red side light and less than half of this small percent for the green side light.

Gaseous discharge neon lights can be manufactured to provide a source of red light. A mixture of argon and neon will produce green light. It would be unnecessary to interpose colored screens, and the lamp would emit its full candlepower using a cylindrical reflector on the vertical shaft of light. Fresnel lenses used with incandescent lamps would be unnecessary. Investigations are currently being conducted to ascertain if such systems offer any significant advantages over the incandescent filament lamps now in use, giving due consideration to all the various technical factors that may be involved.

The basic pattern of navigational lights has in some degree been questioned by the small boat industry which does not have the same attachment to the traditional system that the deep sea sailor has acquired over many years. In some instances, small boats have installed lighting quite similar to that used on automobiles, in addition to the required lights of the Rules of the Road.

Parabolic reflectors directing light straight forward as on cars give a fairly good indication of heading, especially when a slight haze defines the beam from the headlights. Where horizontal distance between headlights is standard, ability to discern proximity of a vessel may be enhanced. Our modern small boat sailors, accustomed to the ubiquitous motorcar, find such a lighting system familiar. They also benefit from the improved illumination of the water ahead of the small boat which may have to thread its way through narrow channels, other boats, and even swimmers. It must be noted that such lights are subject to the same

criticism as searchlights because of their tendency to blind other vessels. Such installations are also criticized for their divergence from long accepted patterns.

Repeated suggestions have been made urging the use of flashing navigational lights for vessels similar to those employed on aircraft. Such devices might show some advantages on the open sea. Lights of this character would create difficulty for a passing vessel attempting to distinguish them from a flashing buoy or other navigational aid. The limitations of vessels fitted only with oil lamps would present another obstacle to such a scheme.

It may well be that an openminded investigation of lighting systems would reveal our present scheme as best, but it is at least worthy of speculation that there may be some merit in some of these proposals for very basic changes. In its 1960 report the Maritime Research Advisory Committee of the National Academy of Sciences discussed the question as follows:

Project 24: Navigation Lights

Discussion: The entire question of navigation lights should be reviewed because of higher speed of vessels and the current availability of stronger and more efficient lights. One part of the marine problem stems from the lack of precision in defining light requirements, although minimum standards are now being recommended for adoption at the 1960 Safety of Life at Sea Conference. In addition to identity, color, and placement, there are other factors importantly affecting the visual detection of lights. This points to a requirement for design changes which should take into account a basic reexamination of the optical system; exploration of the possibilities of standardization of size; study of shapes; and consideration of different types of light systems.

In the action which it suggested, the Committee recommended the encouragement of research and engineering studies to determine navigation light specifications for use by manufacturers and Coast Guard inspection standards. A need for specific studies was pointed out with respect to the following:

- a. Use of running lights.
- b. Specification of color in red and green running lights.
- c. Placement of running lights.
- d. Effectiveness of flashing running lights.
- e. Evaluation of a turn indicator.
- f. Synchronizing whistle and light signals.

The SOLAS Conference adopted a recommendation seeking uniformity as far as practicable in the Rules of the Road. While no one questions the desirability of common standards,

these were not intended nor should they serve to impede continued thought and research directed at improving safety of navigation. Certainly as long as the Regulations for the Prevention of Collisions at Sea are based on relative bearings and headings of vessels, the most accurate and clearly visible indications of these factors are desirable.

SEAMAN RESCUED

Captain Kenneth Le Sieur, a surveyor for the National Cargo Bureau, snatched a young seaman by the hair and saved him from drowning in the Mississippi River, according to reports in the New Orleans press.

The seaman, whose identity was not available, fell into the river from a ship service launch while boarding his vessel in midstream. According to a passenger in the launch, Mr. L. J. Lamy, manager of Kerr Steamship Company's tanker department, the seaman "grabbed the companionway with one hand and was holding a package with the other hand. Then a wave arose and started to separate the two craft.

"We yelled to him to let go, but he didn't. Then he dropped into the river. Captain Le Sieur handed his watch and wallet to a bystander and dove in. Within several minutes the Captain made the rescue, and two lifejackets and a line went out to the pair. After he was back aboard, the young seaman could hardly talk. All he could do was to hug the Captain."

Captain Le Sieur was congratulated for his heroism by the New Orleans Steamship Association.

RADAR-TELEVISION AID TO NAVIGATION

A proposed aid to navigation system wherein a boat operator will be able to utilize a shore based harbor radar display, which is received on a standard TV set, is presently being investigated. Tests are being made to determine a method of converting the radar display to a TV picture with the best possible fidelity in reproduction. When the quality and usability of the TV picture are determined satisfactory, it is planned that the picture will be broadcast for full scale evaluation.



² Op. cit.

SEAWAY

(Continued from page 5)

it is extremely dangerous to land one of the crew men on the dock. In the first place with a breeze of any strength the vessel would have to have considerable headway on her to hold the bow up into the wind and get it close enough to the dock for the man to land. At this speed there is every likelihood that the man would be injured when he struck the dock.

Secondly, assuming the man does arrive on the dock safely by the time he gets clear of the bosun's chair and gets to his feet and runs to where the heaving line is and pulls the line ashore, the vessel may be past the point where the line could save her and the dock from damage.

It seems to me that this would be the most important single factor which could be done to improve navigation through these locks. Certainly the cost of even one line handler when divided between the number of ships passing through these locks in a day's time would be a very worthwhile investment.

LADDER OR CRUTCHES

How many times have we taken it upon ourselves to complete some minor chore and in doing so follow the line of least resistance? Oftentimes our thoughts travel no farther than to get the situation well in hand regardless of the possible hazards involved. The inevitable is ever present, and such was the case of this heedless electrician.

The setting took place on the boat deck of a cargo vessel which was completing its biennial inspection. Officers of this vessel had maintained safety regulations, and had carried out an efficient safety program of instruction; yet all this was obviously wasted in the case at hand.

The electrician was directed by the Chief Engineer to replace the covering plates of the lifeboat cutoff switches. With a twenty gallon garbage can close at hand, he chose it to stand on rather than a step ladder which was within twenty feet of the davit.

The results are apparent; the garbage can overturned spilling him to the deck. He suffered a broken leg, hospital care, and a place on a new shipping list.

Had this man made use of the proper means, namely a ladder, which was available and conveniently close by, he could still be employed aboard his vessel.

COUNCIL ACTIVITIES

(Continued from page 2)

In order to insure consideration of comments and facilitate checking and recording, it is essential that each comment be submitted on a separate Form CG-3287, showing the section number, the proposed change, the reason of basis, and the name, business firm or organization (if any), and the address of the submitter. A small quantity of Form CG-3287 is attached to each copy of the Agenda. Additional copies of this form may be obtained upon request from the Commandant (CMC), or from any Coast Guard District Commander or it may be reproduced by typewriter or otherwise.

Each item in the Agenda has been given a general title, intended to encompass the specific proposals presented. It is urged that each item be read completely because the application of proposals to specific employment or type of vessels may be found in more than one item. For example, Item VI contains proposals applicable only to tank vessels, but Items I, II, V, VIII, IX, X, and XI also contain proposals affecting tank vessels.

The items in the Agenda are:

Item No	Title
I. SHIPBOARD CARGO GEAR	
	Cargo and miscellaneous vessels
	Tank vessels
	Passenger vessels
II. POWER-OPERATED INDUSTRIAL TRUCKS	
	Use on tank vessels
	Use on cargo vessels
	Use on passenger vessels
	Use in handling dangerous cargoes
III. DANGEROUS CARGOES	
	List of explosives and other dangerous articles and combustible liquids
	Railroad vehicles, highway vehicles, vans or portable containers loaded with explosives or other dangerous articles and transported on board ocean vessels
	Cargo handling and stowage devices, U.S. Coast Guard container specifications
	Inflammable solids and oxidizing materials (nitro carbo nitrate)
	Corrosive liquids (titanium sulfate)
	Compressed gases (stowage)
	Poisonous articles (motor fuel anti-knock compound)
	Hazardous articles (baled cotton, vehicles with fuel tanks containing gasoline and solid caustic potash)
IV. MARINE ENGINEERING	
	Construction
	Unfired pressure vessels
	Piping systems and appurtenances
	Bilge and ballast piping
	Bilge and ballast systems in wood vessels
	Pumps and discharges
	Arc welding, gas welding, and brazing
	Main and auxiliary machinery
	Gas turbine installations
	Steering apparatus
	Nuclear vessels
	Repairs to boilers, unfired pressure vessels and appurtenances
	Installations, tests, inspections, markings, and official forms
	Safety and relief valves; construction and installation
	Non-pressure vessel tanks for refrigerated anhydrous ammonia
	Notice of casualty and voyage records of a nuclear vessel
V. ELECTRICAL ENGINEERING	
	Effective date of changes to regulations
	Reference publications
	Electrical systems; general requirements
	Emergency lighting and power system
	Communication and alarm systems and equipment
	Electrical equipment on tank vessels
	Electrical equipment on passenger and cargo vessels
	Electrically-operated whistles or sirens
	Specifications for fire-protective systems
VI. BULK GRAIN CARGOES	
	Feeders, bins, and bulkheads
	Loading and stowage requirements
	Vessels shifting ports
	Equivalents
VII. TANK VESSELS	
	Fire-fighting equipment
	Inspection of fire-fighting equipment
	Lamp and paint rooms and similar compartments
	Repairs or alterations to fire-fighting equipment
	Markings

XIII. FIRE-FIGHTING EQUIPMENT OF FIRE PREVENTION

- Structural fire protection for passenger vessels
- Structural fire protection for cargo vessels
- Specifications for interior finishes for merchant vessels
- Steam smothering systems
- Fire and boat drills
- Smoke detecting system for passenger vessels

XIV. LIFESAVING APPLIANCES

- Life preservers and wood floats for passenger vessels
- Weight testing of lifeboat installations on tank and cargo vessels
- Buoyant cushion specifications
- Inflatable life rafts specifications
- Rescue boat specifications

XV. CONSTRUCTION AND INSPECTION

- Passenger vessels: construction, arrangement, subdivision and stability
- Cargo vessels: stability
- Watertight sliding doors (and door controls), specification
- Gas freeing, inspections and testing required when making alterations, repairs, etc. involving hot work
- Factory inspections for dock coverings, bulkhead panels and incombustible materials
- Drydocking of cargo and passenger vessels

XVI. MANNING OF VESSELS

- Pilot house watch for tank and cargo vessels
- Minimum manning standards for certain special service vessels
- Officers for uninspected vessels

XVII. RULES OF THE ROAD

- Boundary lines of inland waters—Pacific Coast

TWO TALES OF WOE

The Military Sea Transportation Service has drills which simulate real emergencies. Steering casualty drills are always conducted in broad open expanses of water away from the shipping lanes.

In one such drill, the Damage Control Instructor, who was conducting the drill, cut off the power to the rudder angle indicator on the bridge. The Master was the only one on the bridge who was aware that the ship was answering her helm. The Mate mistook the rudder angle indicator failure for a steering power failure and ordered the steering casualty team into action. They rushed to the steering engine room, secured the power to the steering motor, started to hook up the hand steering aft, and frantically searched for indications of the trouble. Meanwhile the ship made lazy circles in the sea. The Master put an end to all of this by ordering power back on the steering engine. He then took the helm himself and waited for the red-faced Mate to return to the bridge.

Years ago, a somewhat similar happening put a tanker on the beach in the Willamette River. The engineers were working on the IC generator which supplies juice to the rudder angle indicator, the engine room telegraph, and the hand electric steering gear, as well as to other controls.

When they were finished, they started up the generator and shut the other one down, but they neglected to put the first generator on the line.

The ship was being steered by the hydraulic telemotor control and was unaffected by all this until the Quartermaster glanced at the rudder angle indicator and found it hard over in the off position. He concluded that he had no helm and sang out to that effect. Actually, the steering gear was working perfectly. The Master put the steering gear in hand electric and had the bypass opened on the telemotor. Right then things started happening. The ship headed for the shore. The current was off the engineroom telegraph. The buzzer which is supposed to ring when current goes off the telegraph wasn't working. Precious seconds were lost getting the engineroom on the phone. They finally got her going astern, and the Mate dropped both anchors, but to no avail. She piled up on the beach, high and dry. Fortunately, the beach was soft, and, after lightening her cargo off, they were able to pull her free with tugs. Miraculously, the ship was not damaged. Subsequently, orders were sent to the ships that they were not to make routine repairs to critical operating machinery involving switchovers when the ship was in narrow waters. These orders still stand. Another lesson obvious from above is that failure of the rudder angle indicator does not necessarily mean that the ship cannot be steered.

Courtesy Safety Bulletin of California Shipping Co.

TAKE NOTHING FOR GRANTED

Close cooperation is an absolute necessity in any organization. This is especially true of a vessel, particularly in dry dock, where the greater needs for safety are required by the unusual circumstances. These facts have been highlighted in a marine safe practices pamphlet of the PMA's Accident Prevention Bureau which underscores the following casualties:

"... Chief Engineer reported that while vessel was in shipyard an accident occurred which could have had serious results. The shipyard people had removed the feed stop valve body and had it laying on the first grating. With shipyard men working there, and passing back and forth, eventually it was pushed or in some way caused to fall off onto the floor plates. Fortunately, it did not strike anyone directly, but did hit two shipyard men on the bounce, resulting in slight lacerations. A direct hit could well have been fatal. The Master suggested that the lesson to be learned from this occurrence was that the valve should not have been left laying on the grating in an exposed position—it should have been lashed securely to the grating—personnel should not have been permitted to work beneath the men working overhead."

"In another case, a man in a shipyard was burning the overhead from a stage board, one end of which was secured in an open porthole. Sparks bounced off the board through the port and set fire to a settee in a stateroom. Everything in the room was destroyed."

"On a Liberty ship, two shipyard employees were killed and three were badly burned in an accident which took place in the shaft alley. The workmen were in the process of replacing a section of the steam line to the steering engine and the section was being lifted into place by a machinist, with two helpers assisting. Two pipefitters were nearby. Just at that time the ship's Chief Engineer opened the valve which controlled steam to this line. He had been told to check the rudder steering by the Port Engineer. Two hours before, the pipefitter leaderman had reported to the Chief Engineer that the steam line was still out, but nevertheless, without checking, the Chief Engineer opened the valve, apparently wide because hot water and steam shot out of the pipe without warning. It would have been a simple matter to ascertain the status of this line before opening the valve."

Never take anything for granted—and that goes double in the shipyard.

UNITED STATES COAST GUARD

ADDRESS REPLY TO:
COMMANDANT
U. S. COAST GUARD
HEADQUARTERS
WASHINGTON 25, D. C.



MVI
22 August 1960

Commandant's Action on

Marine Board of Investigation; explosion and fire on board the SS *Amoco Virginia*, tank barges *H. T. Co. No. 40* and *46* and *Gissel 1601* and *2001*, Houston Ship Channel, 8 November 1959 with loss of life

The record of the Marine Board of Investigation convened to investigate subject casualty, together with its Findings of Fact, Conclusions and Recommendations has been reviewed.

At about 0025, 8 November 1959, while the SS *Amoco Virginia* was loading at the Hess terminal, Houston, Texas, fire occurred on the surface of the water in the Houston Ship Channel and moved toward the vessel and to two barges alongside. Three or more explosions followed involving Numbers 5 and 6 cargo tanks on the *Amoco Virginia* and after rake compartment of the tank barge *H. T. Co. No. 40*. Fire spread over a major portion of the vessel and to Hess Terminal dock facilities. Six crew members including the master died of burns and one died of smoke inhalation. Eighteen crew members were treated for injuries. One fireman from the Houston Fire Department drowned in gasoline as a result of falling into Number 6 port wing tank. In addition to the damage to shore facilities the damage to vessels involved was in excess of \$2,000,000.

The SS *Amoco Virginia*, a tank vessel certificated for the carriage of Grade A cargo, arrived at the Hess Terminal at approximately 0415, 7 November 1959 and moored portside to Ship Dock No. 2, heading downstream. Ballast discharge began on arrival and was completed at 0750. The cargo inspector together with the day loading mate examined all cargo tanks and issued a dry certificate. The loading mate claimed that at this point he checked the overboard discharges in the pumproom to insure they were closed, set them up with a wrench, then chained and sealed them.

Loading of the cargo of Amoco water white gasoline, Housebrand gasoline and No. 2 heating oil was commenced at 0830. The cargo came at various times from Hess Terminal tanks and from barges moored to Ship Dock No. 1 located approximately 550 feet upstream of the Ship Dock No. 2 where the *AMCO Virginia* was moored and Barge Dock No. 2 located approximately 800 feet downstream of Ship Dock No. 2. At about 1635 7 November 1959 the tug *Pan Six* moored the barges *H. T. Co. No. 40* and *H. T. Co. No. 46* in tandem stern to stern along the starboard side of the *Amoco Virginia* with barge 46 downstream. The tug then moored starboard side to the upstream barge. At 1815 the *H. T. Co. No. 40* and *H. T. Co. No. 46* began discharging Housebrand gasoline direct to the *Amoco Virginia* through a common line.

By 2400 7 November loading of tanks 1, 2 and 3 across with Amoco gasoline was nearing completion. This cargo was coming through shore lines from the barge *Gissel 1601* moored downstream at Bargo Dock No. 2. Number 4 tanks across were loaded with Housebrand but were not topped off; 7 and 8 across were topped off with No. 2 heating oil; tanks 5 and 6 were partially filled with Housebrand but no cargo was going into those tanks at this time; 9 across was being loaded with Housebrand

through the stripping line from the barges alongside starboard. No cargo was being pumped from the terminal to the vessel, having previously been secured at 2357 7 November.

The weather was described as clear with light northerly air and vapor was observed rising from the channel. The tidal current was slack or ebbing slightly.

At 0010 8 November Number 9 tanks across were full. The hose connection from the barges *H. T. Co. No. 40* and *46* was then disconnected from the stripping line. Preparations were being made to reconnect the hose to the 4-5-6 loading line at the manifold when suddenly at about 0025 fire was observed broad on the starboard bow on the surface of the water near midchannel approximately 200 to 300 feet away. In the vicinity of the fire the diesel tug *Maye* was observed push-towing a loaded sand barge upstream. The fire, variously described as a wick or golden ribbon of flame approximately one foot wide and two to four feet high, burned toward the *Amoco Virginia* and set fire to the water area between the ship and the barges. There followed a flash on the starboard side of the *Amoco Virginia's* midship house, referred to by some as an explosion and others as a "whoosh," which shot flame high into the air and spread the fire over the entire midship house along the starboard side and on the water area completely surrounding the vessel. As far as can be determined at least three explosions occurred within the next ten minutes, the first of which was the least severe and appears to have occurred in the after rake compartment of the *H. T. Co. No. 40*. The other explosions occurred in Numbers 5 and 6 cargo tanks of the *Amoco Virginia*. In the meantime the fire had continued to spread over the water area on the eastern side of the channel from Ship Dock No. 1 upstream of *Amoco Virginia* to Barge Dock No. 2 downstream of the vessel.

The majority of the crew members abandoned the vessel over the gangway and the mooring lines. Seven men took refuge in the lower machinery space and one in the lower main pumproom until the fire subsided sufficiently to permit going ashore via the mooring lines aft. The tug *Pan Six* was able to get underway from alongside the *H. T. Co. No. 40* before the fire reached her.

Responding to the fire were the Houston Fire Department, U.S. Corps of Engineers, Coast Guard and regular and volunteer fire departments from all adjacent communities. Other emergency and law enforcement agencies also contributed their efforts. By 2000 8 November the fire was under control.

In the course of the investigation by the Board it was learned that at 0350 on 7 November while the tug *Sar Antonio* was shifting the barges *Gissel 1601* and the *Gissel 2001* the barges collided. The *1610*, loaded with Amoco gasoline, sustained a vertical crack about 12 inches long and 1-2 inch wide in the Number 5 port cargo tank extending from 24 to 36 inches below the main deck. The

personnel drove wedges in the hole and succeeded in reducing the resultant leak to a seepage. The barge was then moored to Ship Dock No. 1 and was pumped out until the level of the cargo within the tank was below the leak. This was accomplished by about 1000 7 November. It was also determined that a cargo hose conveying No. 2 heating oil from the H. T. Co. No. 50 to manifold at Ship Dock No. 1 was leaking onto the dock and into the water until pumping was secured at 1830 7 November.

The Board elicited testimony from the chief engineer of the *Pan Six* to the effect that about 2000 7 November he became aware of increasingly heavy accumulation of gasoline fumes. With the aid of a flashlight he inspected the barges H. T. Co. No. 40 and 46 for possible leaks and although he found none, he noted gasoline on the water along the side of the *Amoco Virginia* as far fore and aft as he could see with flashlight as well as between both barges. The gasoline appeared to have a reddish cast. According to the chief engineer the attention of the night loading mate was then directed to the gasoline in the water and when he asked where he thought the gasoline was coming from the night loading mate replied that he did not know. At sometime during the period the chief engineer observed liquid bubbling up in way of the *Amoco Virginia's* main pumproom and from the quantity he assumed the vessel was pumping something overboard. The chief engineer claimed that at approximately 2330 he again asked the night loading mate and inquired if the source of the gasoline had been located. He received the reply that it had not. The gasoline appeared to be moving downstream and spreading out forward of the *Amoco Virginia*. The chief engineer noticed no gasoline overboard of the barges nor around the *Pan Six*.

The master of the *Pan Six* testified that he also had noticed a heavy concentration of gasoline on the water between the ship and the barges and was aware that the chief engineer had reported this situation to the night loading mate on the *Amoco Virginia*. He stated further that at sometime after 2300 7 November he personally reported to the night loading mate that the gasoline was getting thick and further called his attention to the bubbling up of liquid which he presumed to be water alongside of the ship in way of the main pumproom. The night loading mate indicated that this was an overboard discharge. Not being familiar with tankers the master did not pursue the matter further.

An able bodied seaman, crew member of the *Amoco Virginia*, also testified that he saw red gasoline on the water alongside to starboard at about 2000 and that he called it to the attention of the night mate.

The Board took notice of the commendable action on the part of George W. Davis, chief mate on the *Amoco Virginia* who saved the life of Emmanuel Gatica, galleyman. Davis, upon finding Gatica in a state of shock on the mess deck, persuaded him to follow through the heavy smoke and down the mooring lines and into the water. When Davis discovered that Gatica could not swim he kept him afloat until a life preserver and other assistance was received from shore.

REMARKS

It is apparent that the fire resulted from the accumulation of a large quantity of inflammable liquid on the surface of the water, then spread to the *Amoco Virginia* and to shore facilities. Concurring with the Board, the evidence adduced indicates that this liquid material in all probability was Housebrand gasoline which had entered upon the water through the overboard discharge on the starboard side of the main pumproom. Had this liquid been water, as presumed by the master of the *Pan Six*, a small quantity of bubbles might have appeared on

the surface, but due to the depth of the overboard discharge below the waterline, the welling-up of fluid as described by the master and chief engineer of the *Pan Six* suggests a liquid of lesser specific gravity. Since the Number 9 tanks across were filled through the stripping line, accidental discharge could occur if valves to the overboard discharge were left open or were not fully closed. When the vessel was in drydock after the casualty these valves were examined and found to be in good condition.

The possibility that the leaking gasoline from the damaged barge *Gissel 1601* contributed to this casualty is considered remote. There is no evidence of any gasoline leaking into the water from the *Gissel 1601* after about 1000 7 November. By the time the casualty occurred fourteen hours later this gasoline would in all probability have completely dissipated. The No. 2 heating oil leaking from the cargo hose at Number 1 Ship Dock, although constituting prohibited contamination, does not appear to have contributed greatly to the hazard in view of the limited quantity which entered the water.

The preponderance of the testimony places the source of ignition near midchannel in the vicinity of the tow consisting of the diesel tug *Maye* pushing the loaded sand barge. The three open flame oil lanterns used as running lights on the bow of the barge are a likely source of ignition; however, other possible sources would also be present.

The explosion which occurred in the after rake compartment of the H. T. Co. No. 40 appears to have been caused by an accumulation of vapors in that compartment ignited by the fire outside. Since an examination of the barge after the casualty disclosed no leaking tanks, the gasoline or vapors probably entered the compartment, as suggested by the Board, through previously sustained collision damage which had resulted in a fracture of the shell plating just below the stern log.

The flash which occurred on the starboard side of the midship house of the *Amoco Virginia* appears to have been the ignition of the vapors generated by the loading and which hung over the vessel due to the stable atmospheric conditions obtaining.

The direct cause of the first explosion in cargo tanks 5 and 6 could not be determined. The testimony of pertinent witnesses indicates that all tank tops were closed and flame screens were in place over all ullage openings. Of course, had one been ajar or failed to fit snugly, or been dirty, its purpose would have been defeated. On the other hand, there is also the possibility that a flame screen may have been dislodged by the explosion on the barge. In this connection it was noted that several flame screens on the vessel's after tanks had apparently been dislodged by explosions.

Concerning the Board's recommendations, it is considered that the failure of the night loading mate when notified of the presence of gasoline on the water to attempt to determine the source of the gasoline or otherwise take necessary precautions to insure himself that the loading could be continued with safety constitutes evidence of negligence. The failure of the master of the Tug *Pan Six* as officer in charge of the pumping operations of the barges H. T. Co. No. 40 and 46, to take timely and adequate precautions to insure the safety of the persons and vessels under his command when he became aware of the dangerous situation presented by the gasoline on the water, is also considered to constitute evidence of negligence. Accordingly, the Commander, 8th Coast Guard District is hereby directed to refer this case to the Officer in Charge, Marine Inspection, Houston, Texas, for further investigation of the failures of these officers and such other action as provided for in Title 46 CFR Part 137 as may be deemed appropriate.

With respect to the oil pollution aspects of the case, the Commander, 8th Coast Guard District is further directed to forward one copy of the Board's report to the District Engineer, U.S. Army Corps of Engineers for possible action in connection with the discharge of gasoline from the *Amoco Virginia* and the uncorrected leak in the discharge hose which conveyed Number 2 heating oil from the *H. T. Co. No. 50* to the manifold on Ship Dock No. 1.

The Board's recommendation that the J. S. Gissel & Co., owners of the tug *San Antonio* and tank barge *Gissel 1601*, be cited for violation of 33 USC 361 for failure to report the collision which resulted in damage to the *Gissel 1601* and spillage of gasoline is not concurred in. The provisions of 33 USC 361 require reporting of accidents for investigation and inspection purposes to determine cause and insure seaworthiness. There is no evidence in this

instance that the Coast Guard did not receive sufficient timely notice to meet these requirements. It is agreed, however, that this casualty points up the need for the earliest possible notification of accidental spillage of a commodity which might create a hazard to safety. The Merchant Marine Council presently has such a matter under consideration and accordingly this case will be referred to that body for study in this connection.

Recognition of the commendable action by the chairman, George W. Davis, who assisted galleyman Emmanuel Gatica to safety will be given.

Subject to the foregoing remarks, the record of the Marine Board of Investigation is approved.

A. C. RICHMOND,
Admiral, U.S. Coast Guard,
Commandant.

ITALIAN LINE'S 'VULCANIA' IN AMVER

Search and Rescue cases on the high seas may involve numerous hazards and risks to those performing the missions of mercy. Conditions at the scenes of distress can range from nearly calm to stormy and turbulent seas. On some occasions, what appears to be an ordinary rescue case becomes a very dangerous operation.

Italian Line's 25,000-ton motor ship *Vulcania* accomplished an errand of mercy in heavy seas on Sunday, November 6, when at 0030 the Captain of the Greek tanker *Lakmos* made a radio appeal to the luxury liner for medical assistance.

Communicating through Mackay Radio in New York, the Greek ship reported to the Coast Guard that crewman Michael Kaissanis was seriously ill from an attack of epilepsy and in a coma. Doctors at the U.S.

Public Health Service Hospital in New York stressed the need for immediate medical assistance and the AMVER Center was consulted for doctor-carrying vessels in the vicinity of the distress. One of the ships shown on the AMVER plot was the *Vulcania*, about 195 miles north of the Greek ship, which was then about 500 miles west of the Azores. The Master of the *Lakmos* radioed Senior Captain Attilio Urciuoli, Master of the luxury liner, for assistance and arranged a rendezvous.

A strong westerly wind causing heavy seas slowed down the *Vulcania* while she was proceeding toward the *Lakmos*. In an exchange of radio messages between the two vessels, the Master of the Greek tanker informed the *Vulcania* that because of heavy seas he was unable to lower a boat



to transport the sick seaman to the *Vulcania*. The assistance, therefore, would have to be limited to the furnishing of appropriate medicines and medical instructions. At 1300 the *Vulcania* took up a position near the *Lakmos* for rocketline transmission. Two attempts were foiled by extremely strong winds, but at 1442 rocketline communication was established between the two vessels and a package containing medicines with appropriate medical instructions was sent to the *Lakmos*. Captain Urciuoli of the *Vulcania* asked the Greek ship if the Master desired further assistance and was told that everything was satisfactory. The *Vulcania* then resumed her regular course to Halifax on her next port of call.

The *Lakmos* continued her passage to Philadelphia. The sick crewman was transferred to hospital facilities ashore for further treatment.

In this situation, very unfavorable weather conditions made help for crewman Kaissanis close, and yet far away. Only the resourcefulness of the masters of the *Vulcania* and the *Lakmos* brought the necessary medical aid to the seriously ill crewmember. What might appear to the casual observer as an ordinary medico case was actually a potentially dangerous operation; not an uncommon occurrence in search and rescue on the high seas.



A ROCKETLINE is fired from the Italian Line's luxury liner *Vulcania* to the Greek tanker *Lakmos* during an emergency at sea. A crewman on the *Lakmos* was seriously ill and needed immediate medical attention. The heavy seas made it impossible to lower a boat and the needed medicines and medical instructions were passed to the *Lakmos* via the line. Photo courtesy of Italian Line.

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 Registers containing the material referred to may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.]

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

[CGFR 60-36]

VESSEL INSPECTION

Miscellaneous Amendments

Pursuant to the notice of proposed rule making published in the Federal Register on February 18, 1960 (25 F.R. 1440-1448), and Merchant Marine Council Public Hearing Agenda dated April 4, 1960 (CG-249), the Merchant Marine Council held a public hearing on April 4, 1960, for the purpose of receiving comments, views and data. The proposals considered were identified as Items I through XII, inclusive.

This document is the last of a series covering the regulations and actions considered at the April 4, 1960, Public Hearing and annual session of the Merchant Marine Council. It includes the actions taken with respect to proposals in Items II, III, IV, VII, VIII, and IX. Certain proposals were grouped into one item to provide general identification. In this document are most of the proposals in these items. Those proposals within a specific item that are not included are either those on which previous actions may have been taken or the matters are still under consideration. The following proposals are included in this document and are adopted either as proposed in the Merchant Marine Council Public Hearing Agenda or as revised, which are noted:

Federal Register Document 60-10395; Filed Nov. 4, 1960, 8:47 a.m.; and printed Nov. 5, 1960)

SUBCHAPTER E—LOAD LINES

[CGFR 60-74]

PART 43—FOREIGN OR COASTWISE VOYAGE

Subpart 43.40—Zones and Seasonal Areas and Miscellaneous Requirements

"WINTER SEASONAL" ZONE OFF THE SOUTHERN COAST OF AUSTRALIA

§ 43.40-1 Boundaries of the zones and seasonal areas.

* * * * *

(e) The northern boundary of the southern "winter seasonal" zone is a line drawn from the east coast of South America along the parallel of latitude 40° S. to longitude 56° W., thence along a rhumb line to the point latitude 34° S., longitude 50° W., thence along the parallel of latitude 34° S. to the west coast of South Africa; from the east coast of South Africa at latitude 30° S. along a rhumb line to the point latitude 35°30' S., longitude 118° E., off the southern coast of Australia, thence along a rhumb line to Cape Grim, Tasmania, thence along the north coast of Tasmania to Eddystone Point, thence along a rhumb line to the west coast of South Island, New Zealand, at longitude 170° E., thence along the west, south, and east coasts of South Island to Cape Saunders, thence along a rhumb line to the point latitude 33° S., longitude 170° W.; and thence along the parallel of latitude 300° S. to the west coast of South America, Valparaiso, Cape Town, and Durban to be considered as being on the boundary line of the Southern "seasonal winter" and "summer" zones.

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a)

(Federal Register Document 60-10722; Filed No. 16, 1960, 8:52 a.m., and printed Nov. 17, 1960)

SUBCHAPTER N—EXPLOSIVES OR OTHER DANGEROUS ARTICLES OR SUBSTANCES AND COMBUSTIBLE LIQUIDS ON BOARD VESSELS

[CGFR 60-70]

PART 146—TRANSPORTATION OR STORAGE OF EXPLOSIVES OR OTHER DANGEROUS ARTICLES OR SUBSTANCES AND COMBUSTIBLE LIQUIDS ON BOARD VESSELS

Miscellaneous Amendments Respecting Dangerous Cargoes

(Federal Register Document 60-10986; Filed Nov. 25, 1960, 8:47 a.m.; and printed Nov. 26, 1960)

Notice

DEPARTMENT OF THE TREASURY Coast Guard

[CGFR 60-76]

ACCEPTANCE OF CERTIFICATES AND/OR REGISTERS ISSUED BY UNIVERSAL CARGO GEAR SURVEY AND CERTIFICATION BUREAU, INC.

(a) The valid current certificates and/or registers issued by the Universal Cargo Gear Survey and Certification Bureau, Inc., with home office at 149 Broadway, New York 6, New York, attesting to the tests and surveys of shipboard cargo gear on a passenger, cargo, or miscellaneous vessel conducted by or for such Bureau, may be accepted as prima facie evidence of the condition and suitability of such gear by the Coast Guard when performing an inspection of a vessel as further described in 46 CFR 71.25-25 or 91.25-25: *Provided, That:*

(1) Such certificates and/or registers shall be maintained currently and shall indicate that the described shipboard cargo gear for the particular vessel described therein complies with the standards respecting shipboard cargo gear as set forth in the Convention Concerning the Protection Against Accidents of Workers Employed in Loading or Unloading Ships (Revised) (International Labor Organization Convention No. 32); and,

(2) The dates when such tests or surveys were conducted, together with the signatures or initials of the competent persons performing them shall be recorded therein.

(b) This approval and permission to accept valid current certificates and/or registers of the Universal Cargo Gear Survey and Certification Bureau, Inc., shall become effective on the date of publication of this document in the Federal Register and shall be in effect until suspended, amended, or canceled by proper authority.

(Federal Register Document 60-10723; Filed Nov. 16, 1960, 8:52 a.m.; and printed Nov. 17, 1960)

SUBCHAPTER B—MERCHANT MARINE OFFICERS AND SEAMEN

[CGFR 60-72]

PART 12—CERTIFICATION OF SEAMEN

Merchant Mariner's Document Endorsement Simplification

The amendments to the regulations, as set forth in this document, are to permit a simplification and standardization of endorsements on merchant mariner's documents, which are issued to qualified merchant seamen as provided by law. A merchant mariner's document is a certificate of identification of the holder who is described therein, and by appropriate endorsements may state the capacities in which such holder may legally serve on board merchant vessels.

The law requires that persons applying for merchant mariner's documents endorsed as "able seaman," "qualified member of the engine department," "lifeboatman" or "tankerman" must pass appropriate examinations and also give evidence of previous sea service. Further, persons desiring an endorsement as a "food handler" must pass a physical examination. In no other rating is an examination or proof of ability required, hence, endorsements other than those mentioned above cannot be construed to be certifications of competency. In order to eliminate the meaningless and useless endorsements of merchant mariner's documents in ratings for which no examination or proof of competency is required or authorized,

the regulations requiring that endorsements reflect the specific capacity or capacities in which a person may be employed is rescinded by this document, effective January 1, 1961. Original documents will be issued bearing standard entry rating endorsements which will permit employment in any unqualified rating. The term "unqualified rating" means any position which does not require the seaman to be in possession of a document endorsed for a rating as "able seaman," "qualified member of the engine department," "lifeboatman," "tankerman," or food handler "(F.H.)." This program will not affect existing upgrading procedures in the qualified ratings, but it will eliminate the requirement that sea-

men obtain meaningless endorsements, such as porter, bootblack, sculleryman, concessionaire, etc.

(Federal Register Document 60-11114; FR Nov. 29, 1960, 8:49 a.m.; and print Nov. 30, 1960)

EQUIPMENT APPROVED BY THE COMMANDANT

[EDITOR'S NOTE.—Due to space limitations, it is not possible to publish the documents regarding approval and terminations of approvals of equipment published in the Federal Register dated November 17, 1960 (CGFR 60-71). Copies of these documents may be obtained from the Superintendent of Documents, Washington 25, D.C.]

ACCEPTABLE COVERED STEEL ARC WELDING ELECTRODES

The following are additions to the list of electrodes which are acceptable to the United States Coast Guard for use in welded fabrications.

Distributors and/or manufacturers	Brand	AWS Class	Operating positions and electrode sizes (inch)				
			5/32 and smaller	3/16	7/32	1/4	5/16
Lincoln Electric Co., 22801 St. Clair Ave., Cleveland 17, Ohio.....	Electweld 7MP.....	E6012.....	1	1	2	2	
Do.....	JETWELD LH 70.....	E6018, E7018.....	1	2	2	2	
Westinghouse Electric Corp., East Pittsburgh, Pa.....	ZIP-12.....	E6012.....	1	1		2	
Metal & Thermit Corp., 120 Broadway, New York 15, N.Y.....	Murex Type N-13.....	E6012.....	1	1	2	2	

NOTE.—The brand names of the following electrodes listed in Equipment Lists, have been changed as follows:

"Murex Type 0308" changed to "Murex Ferro-core 308-16"

"Murex Type 0316" changed to "Murex Ferro-core 316-16"

"Murex Type 0347" changed to "Murex Ferro-core 347-16"

ACCEPTABLE HYDRAULIC CAST IRON VALVES

Manufacturer	Valve type	Identity	Maximum allowable pressure (p.s.i.)
Denison Engineering Division, American Brake Shoe Co., Columbus 16, Ohio.	Direct operating sequence valve, remote control.....	RH-33-36*	300
	Direct operating unloading valve.....	RI-33-36*	300
	Direct operating sequence and check valve, remote control.....	RC-33-36*	300
	Direct operating counter balance valve.....	RD-33-36*	300
	Check valve.....	DK-3-582M	300
	do.....	DP-3-582M	300
	do.....	DK-4-582M	500
	Pilot operated check valve.....	DK-3-332M	300
	Pilot operated 4-way valve.....	D1D-023-***-***	500
	do.....	D1D-063-***-***	500
	do.....	D1D-123-***-***	500
	Multirange flow-control valve.....	V1A-33-33*	500
	do.....	VA-33-33*	500
	Relief, sequence, unloading, or pressure reducing valve.....	R-3-33*	500
	4-way valve.....	DD-123-50**	500
	do.....	DD-123-51**	500
	do.....	DD-123-52**	500
	do.....	DD-123-53**	500
	do.....	DD-123-58**	500
	do.....	DD-063-0**	300
	do.....	DD-063-1**	300
	do.....	DD-063-2**	300
	do.....	DD-063-3**	300
	do.....	DD-063-8**	300

NOTE.—The asterisks (*) in the valve model numbers will be letter and/or number combinations designating variances in the valve which do not affect the accepted cast iron body. In addition the valve may be supplied with an additional letter and three numerals added to the model number. This indicates modifications to a stock valve, but does not affect the accepted cast iron body.

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from 1 November to 30 November 1960, inclusive, for use on board such 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

Fuels Research Corp., 2114 Curtis St., Denver 5, Colo., Certificate No. 41, dated November 16, 1960, BSC-1960.

AFFIDAVITS

The following affidavits were accepted during the period from 15 October 1960 to 15 November 1960:

Jaxon Flange Co., 213 E. Cortland St., Jackson, Mich., FLANGES.

Pennsylvania Flexible Metallic Tubing Co., Paoli, Pa., FITTINGS.

Screw and Bolt Corporation of America, P.O. Box 1708, Pittsburgh 12, Pa., BOLTING.

Joseph Kopperman & Sons, Inc., 10-16 New St., Philadelphia 6, Pa., FITTINGS.

FUSIBLE PLUGS

The regulations prescribed in Subpart 162.014, Subchapter Q Specifications, require that manufacturers submit samples from each heat of fusible plugs for test prior to plugs manufactured from the heat being used on vessels subject to inspection by the Coast Guard. A list of approved heats which have been tested and found acceptable during the period from 15 October 1960 to 15 November 1960 is as follows:

The Lunkenheimer Co., Cincinnati, Ohio, Heat Nos. 634 and 635.

Changes Published During November 1960

The following publications have been modified by Federal Register:

CG-115, CG-123, CG-256, CG-257, CG-258, CG-259, and CG-269 Federal Register, November 5, 1960.

CG-176, CG-190, CG-256, and CG-257 Federal Register, November 17, 1960.

CG-191 Federal Register, November 30, 1960.

*Affidavit limited to bulkhead seal expansion joints.

MARINE SAFETY PUBLICATIONS AND PAMPHLETS

The following publications and pamphlets are available and may be obtained upon request from the nearest Marine Inspection Office of the United States Coast Guard. The date of each publication is indicated in parenthesis following its title. The dates of the Federal Registers affecting each publication are noted after the date of each edition.

CG No.	Title of Publication
101	Specimen Examinations for Merchant Marine Deck Officers (7-1-58).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (8-1-58).
115	Marine Engineering Regulations and Material Specifications (3-1-58). F.R. 5-10-58, 4-25-59, 9-5-59, 3-17-60, 10-25-60, 11-5-60.
123	Rules and Regulations for Tank Vessels (12-1-59). F.R. 3-30-60, 10-25-60, 11-5-60.
129	Proceedings of the Merchant Marine Council (Monthly).
169	Rules of the Road—International—Inland (5-1-59). F.R. 5-21-59, 6-6-59, 5-20-60, 9-21-60.
172	Rules of the Road—Great Lakes (5-1-59). F.R. 6-1-59, 1-7-60, 3-17-60, 5-20-60, 9-21-60.
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids (7-2-51).
175	Manual for Lifeboatmen and Able Seamen, Qualified Members of Engine Department, and Tankerman (6-1-55).
176	Load Line Regulations (9-2-58). F.R. 9-5-59, 8-2-60, 11-17-60.
182	Specimen Examinations for Merchant Marine Engineer Licenses (12-1-59).
184	Rules of the Road—Western Rivers (5-1-59). F.R. 6-1-59, 6-6-59, 5-20-60, 9-21-60, 10-8-60.
190	Equipment Lists (4-1-60). F.R. 6-21-60, 8-16-60, 8-25-60, 8-31-60, 9-21-60, 9-28-60, 10-25-60, 11-17-60.
191	Rules and Regulations for Licensing and Certifying of Merchant Marine Personnel (5-1-59). F.R. 5-26-59, 6-20-59, 7-21-59, 8-15-59, 9-5-59, 1-8-60, 3-17-60, 3-30-60, 5-6-60, 7-8-60, 9-24-60, 11-30-60.
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (7-1-58). F.R. 3-30-60, 5-6-60.
220	Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels (4-1-57).
227	Laws Governing Marine Inspection (7-3-50).
239	Security of Vessels and Waterfront Facilities (7-1-58). F.R. 11-1-58, 12-18-58, 12-30-58, 9-19-59, 2-24-60, 3-30-60, 7-29-60.
249	Merchant Marine Council Public Hearing Agenda (Annually).
256	Rules and Regulations for Passenger Vessels (3-2-59). F.R. 4-25-59, 6-18-59, 6-20-59, 7-9-59, 7-21-59, 9-5-59, 1-8-60, 5-6-60, 8-18-60, 10-25-60, 11-5-60, 11-17-60.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (3-2-59). F.R. 4-25-59, 6-18-59, 6-20-59, 7-9-59, 7-21-59, 9-5-59, 5-6-60, 5-12-60, 10-25-60, 11-5-60, 11-17-60.
258	Rules and Regulations for Uninspected Vessels (9-1-59). F.R. 3-17-60, 11-5-60.
259	Electrical Engineering Regulations (9-2-58). F.R. 6-20-59, 7-21-59, 9-5-59, 1-8-60, 11-5-60.
266	Rules and Regulations for Bulk Grain Cargoes (5-1-59).
267	Rules and Regulations for the Numbering of Undocumented Vessels and the Reporting of Boating Accidents (5-1-59). F.R. 7-11-59, 7-18-59, 7-25-59, 9-5-59, 9-17-59, 10-2-59, 10-23-59, 11-19-59, 11-21-59, 12-5-59, 12-29-59, 1-1-60, 1-30-60, 2-13-60, 3-4-60, 3-17-60, 3-18-60, 4-6-60, 4-14-60, 4-20-60, 5-6-60, 5-11-60, 6-25-60, 6-29-60, 7-14-60, 7-29-60, 10-25-60.
268	Rules and Regulations for Manning of Vessels (9-1-60).
269	Rules and Regulations for Nautical Schools (3-1-60). F.R. 3-30-60, 8-18-60, 11-5-60.
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.
290	Pleasure Craft (7-1-59).
293	Miscellaneous Electrical Equipment List (3-7-60).
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (10-1-59). F.R. 10-25-60.
323	Rules and Regulations for Small Passenger Vessels (Not More Than 65 Feet in Length) (6-1-58). F.R. 9-29-60.
329	Fire Fighting Manual for Tank Vessels (4-1-58).

The Federal Register is a sales publication and may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. It is furnished by mail to subscribers for \$1.50 per month or \$15 per year, payable in advance. Individual copies desired may be purchased as long as they are available. The charge for individual copies of the Federal Register varies in proportion to the size of the issue and will be 15 cents unless otherwise noted on the table of changes.



AMERICAN SHIPS
AMERICA'S LIFELINE