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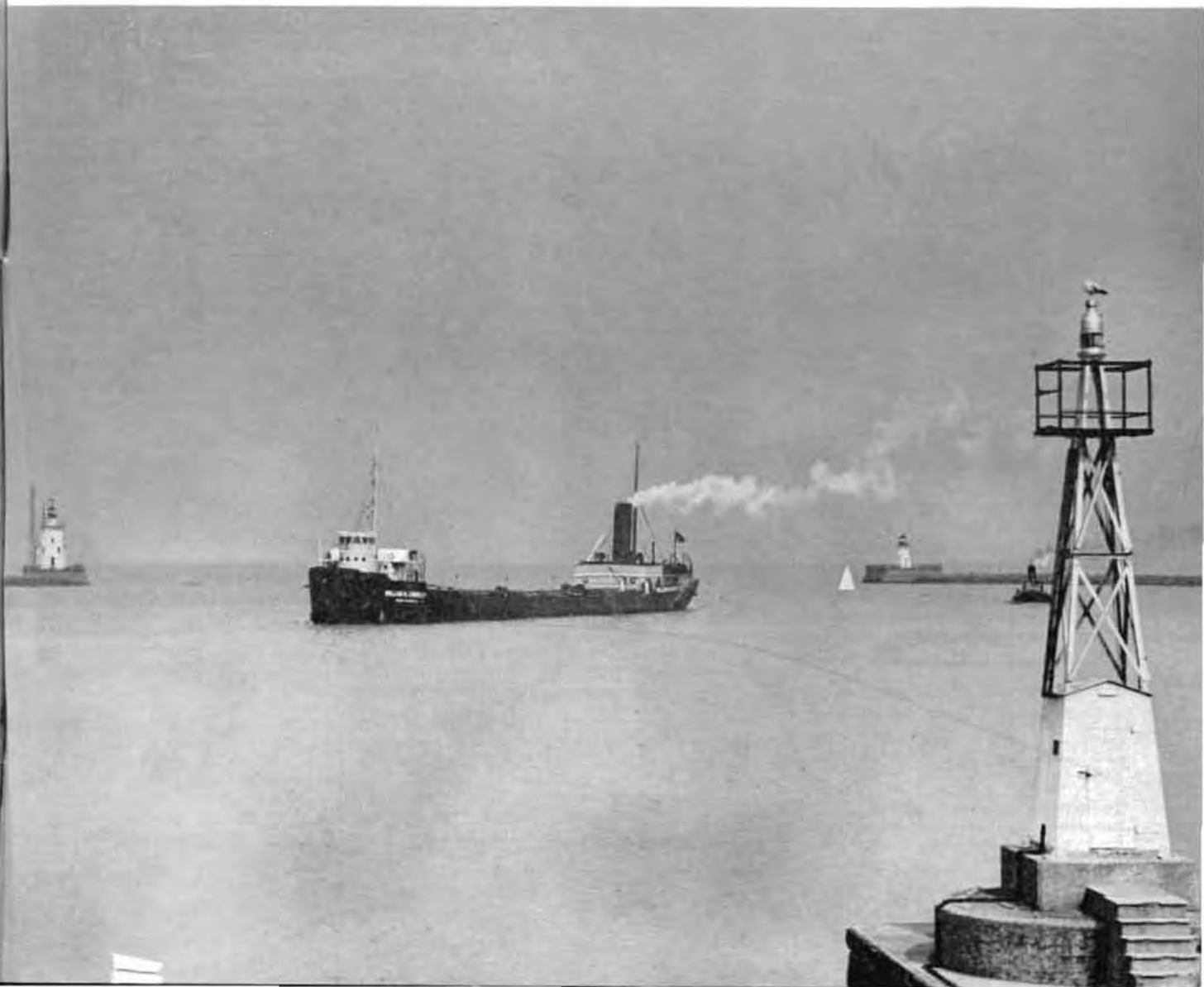

Proceedings of the

MERCHANT MARINE COUNCIL

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Mention of source will be appreciated.

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FAILURES OF PROPELLER SHAFTS ON LIBERTY TYPE VESSELS

The record number of failures at sea of tailshafts on Liberty vessels is quite abnormal and is a matter of considerable concern to all interested parties. During a 12-month period, March 1947 to March 1948 1,017 shafts were examined and of this number 224 or 22 percent had to be renewed for various reasons. The American Bureau of Shipping has made a detailed study of these failures and states that the natural frequency of the propelling system has been determined on the Liberty type ships. It has also been found that the vibratory torsional stresses set up at the critical revolutions for the third order harmonic are of sufficient magnitude to contribute to the failure of the propeller shaft if the engine is operated for a sufficient length of time at or near this speed. In addition to Bureau tests the Burmeister & Wain Co. has made available the results of several other tests and these indicate that the third order peak will occur on different ships at slightly varying revolutions but for vessels with engines located amidship and fitted with the original built-up crankshafts and solid bronze propellers this peak will occur within the range of 74 to 78 r. p. m. The attention of owners and operators of Liberty type colliers with engines located aft is directed to the last paragraph of this article.

The failures occur at the large end of the propeller shaft cone which is the point of maximum stress concentration and the Bureau has investigated a number of methods for reducing the stresses. Some of these proposals have been discarded as being impracticable for various reasons but should any of the owners develop methods for overcoming this condition which they feel will be more advantageous than the methods suggested the Bureau will be pleased to consider such proposals and make available to the owners such technical data as may be of assistance in their development.

As a result of the study the Bureau recommends that steps be taken as outlined below.

(1) *Sealing arrangement.*—Existing arrangements for sealing the propeller shaft have not proved entirely satisfactory. If sea water has access to the steel shaft the endurance limit of the material is appreciably reduced and failure may result from corrosion fatigue. There have been numerous failures from this cause and the Bureau feels an outside packing gland should be fitted when the propeller shaft is next drawn for examination. The space in the counterbore should be filled with red-lead putty or some similar compound. Typical seals of this type are illustrated in section 37 of our rules.

(2) *Key and keyway.*—It has been found that the fine cracks caused by ordinary fatigue are very difficult to detect by normal visual examination so it is suggested that magnetic powder testing or other positive means of detection be used when existing shafts are drawn for inspection. The keyway and adjoining areas should be examined with particular care.

Since tool marks, nicks, scratches and the like all act as local stress raisers care should be taken to see that all such marks are carefully re-

moved or blended into the shaft contour. All sharp corners on the keyway should be removed by grinding. There has been evidence of the key bearing excessively at the sides at the forward end of the keyway in a number of cases and it is felt that this condition should be relieved by slotting the key longitudinally for several inches or by other suitable means.

(3) *Engine speed and peak stresses.*—As stated above the magnitude of the third order critical is sufficient to contribute to eventual failure of the propeller shaft if the engine is operated for a long enough time at or near the peak. In order to alleviate this condition it is suggested that one of the following steps be taken.

(*a*) *Reduced revolutions.*—Unless satisfactory steps are taken to alter the present propelling system, owners and operators of vessels classed with this Bureau are requested to issue instructions to limit the engine speed to a maximum of 66 r. p. m.

(*b*) *New propeller.*—A propeller designed to absorb increased horsepower at 66 r. p. m. will provide higher ship speed than the present propeller at this r. p. m. The WR^2 of the propeller is not particularly critical so that the natural frequency of the system can be raised only slightly by decreasing the WR^2 of the new propeller. The limiting factor in this method is the torque that can be safely transmitted by the shafting. This limits the maximum horsepower to 2,200 IHP at 66 r. p. m.

(*c*) *Flywheel.*—The natural frequency of the system can be lowered by fitting a flywheel at the after end of the engine. With a flywheel having a WR^2 of 16 million pound-inch^2 the torsional stresses can be reduced sufficiently to operate the engine at the maximum designed speed of 76 r. p. m. without other changes. The size of the flywheel may be reduced by fitting counterweights to the existing crank webs.

(*d*) *Larger lineshaft.*—The natural frequency of the system can be raised by fitting lineshafting having a larger diameter than the original shafting. The allowable engine speed can be raised to 72 r. p. m. by replacing two sections of the present 13½-inch lineshaft with 17-inch shafting, with no other changes in the main drive. This arrangement will permit normal operation in those services where 68–69 r. p. m. loaded, and 70–72 r. p. m. light, have been usual. By further modification along these lines, the full design speed of 76 r. p. m. can be obtained if desired.

(4) *Periodical propeller shaft examinations.*—A year ago the period between propeller shaft surveys for Liberty type vessels was reduced from 3 to 2 years. On the occasion of the next propeller-shaft examination the recommendations in (1) and (2) above should be carried out. Where changes have also been made in accordance with (3) (*b*), (3) (*c*), or (3) (*d*), the shafts may be returned to the regular 3-year schedule. Where no changes have been made to the propelling system the engine should be operated in accordance with (3) (*a*) above and the period between propeller shaft examinations should not exceed 2 years.

While the above recommendations are considered by the Bureau to be of primary importance, study also developed several other suggestions which may be of interest to the owners.

When new propeller shafts are fitted it would be desirable to increase the keyway fillets to at least 3/16-inch radius, to break all sharp corners and to provide a good machined finish. The keyway should be shortened, with at least 2 inches clearance between the end of the liner and the start of the keyway. It is also recommended that the key be relieved at the forward end, as described in (2) above, and that the forward key retaining screw be eliminated.

Instructions should be issued to reduce speed when racing occurs, in order to avoid the high stresses to which shafting is subjected under racing conditions in heavy weather. It is suggested that a governor may be helpful in this connection.

It is suggested that periodic checks be made to maintain reasonably good division of power not only between cylinders but also between top and bottom ends of each cylinder, as it has been found that some engines are badly out of balance and this may have been a contributing factor in some instances of propeller shaft failures.

Liberty colliers with machinery aft do not require any changes in the main drive and may be operated at the designed rpm. On the occasion of the next propeller-shaft examination, however, the sealing arrangement should be changed to the outside gland referred to in (1) above. The propeller shafts on these vessels may be returned to the regular 3-year survey schedule immediately.

HEAD AND HEAD WITH RADAR

In the January 1948 issue of the "Proceedings" there appeared an article under the above heading with a request that comment be made by anyone who had encountered similar circumstances. Mr. R. M. Melbye, master of the *J. L. Hanna*, Standard Oil Co., of Calif., made the following comment: "Two vessels are meeting end-on or nearly end-on and I have a radar. Suppose I change course to the right, say 5°, and the distance between the ships is 8 miles and provided he continues on his course, we would pass less than a mile when abeam. Now, when we have closed in to about 4 miles, he hears our whistle, which he thinks he hears on his starboard bow. He may alter his course to port and then you have the makings of a collision."

"In my opinion, when a vessel is equipped with radar, and so as not to establish a collision condition, change course sufficiently (Say 2 points) until you have made a departure from 2 to 3 miles from your original course. If the other vessel by change has hauled towards you, you can detect that in sufficient time to be able to keep well clear.

"If space does not permit a wide change, then stop and proceed as you would without radar.

"Never depend on what the other vessel will do or whether he is equipped with radar or not. Put ample distance between you and he and you will have no collision."

DETERMINING PREDICTED DISTANCE OFF ABEAM BY RADAR

By M. V. Foreman, Lt. Comdr. USCGR

Deck officers are accustomed to determining the predicted distance their vessel will pass off a light by utilizing the distance the ship has yet to run to abeam in conjunction with the relative bearing of the light or object. The advent of radar changes the method of accomplishing this, and although much simpler, may not be clearly understood by officers who have not yet had an opportunity to become acquainted with radar.

Radar simplifies the procedure of fixing the ship's position in that it furnishes both the range (distance) and bearing of a light or object. When running along a coast, it is naturally necessary to determine the distance the vessel will pass off a light or point while still some distance from it. Here the procedure when utilizing radar ranges and bearings differs from the usual method of determining distance off abeam.

Since radar furnishes the distance from the light, this range or distance is the hypotenuse of a right angle triangle and is somewhat greater than the distance the vessel must run to bring the light abeam (side adjacent). When this fact is clearly understood, solution for the predicted distance off abeam may be accomplished by reference to the Traverse Tables in Bowditch.

The tables are entered with the relative bearing of the light and with the range as the distance. The predicted

distance off abeam will then be found in the departure (side opposite) column. The distance the vessel must run to abeam (side adjacent) may also be obtained from the difference of latitude column.

Officers who use a slide rule can determine the sine of the relative bearing and multiply it by the range to obtain the predicted distance off abeam (side opposite=sine $< x$ hyp.). The most convenient method, however, is to set the right index of the S scale to the range on the A scale, and the indicator to the relative bearing on the S scale. The predicted abeam distance can then be read off the A scale under the indicator. It should be understood that the above is merely the method of determining in advance the distance a vessel will pass off a light when abeam by means of a single radar range and bearing. When abeam of the light, radar will give the bearing and distance off directly, thus fixing the vessel's position and obviating the necessity for the customary bow and beam bearing.

It may also be well to note, in connection with the many articles pertaining to the added responsibilities of radar equipped vessels under the Rules of the Road and Pilot Rules, that the fact that an approaching vessel is equipped with radar and is operating it can be determined. In such cases, a broken line will extend from the other vessel's "pip" to the center of the scope. It should be stressed that during periods of poor visibility radar will indicate the presence of another vessel in ample time to permit altering course sufficiently, if necessary, to pass at a distance far greater than that which would require compliance with the Rules of the Road. Furthermore, a definite agreement with respect to the method of passing may be reached by means of radio-telephone while the vessels are yet a considerable distance apart.

Much has been said of the value of plotting a series of radar ranges and bearings on an approaching vessel, taking into account your own course and speed, in order to determine his course and speed and whether risk of collision exists. While this is unquestionably desirable, merchant officers have neither the time nor facilities to utilize this procedure. It has been found that the same result can be accomplished by merely watching the other vessel's successive positions on your radar scope. If he approaches the center of the scope, risk of collision exists and avoiding action should be taken.

OCEAN WEATHER STATIONS

The ocean weather station program, began in 1940 at the direction of the President, as a joint Weather Bureau-Coast Guard operation; the Coast Guard providing the ships and communication facilities, including the shore radio station, and the Weather Bureau providing the observational personnel and the special instruments and equipment required.

The Governments of Belgium, Canada, France, Ireland, the Netherlands, Norway, Sweden, the United Kingdom, and the United States of America, being members of the International Civilian Aviation Organization have agreed to the establishment of 13 ocean weather stations in the Eastern Atlantic, Mid-Atlantic and Western Atlantic.

Coast Guard cutters assigned to this ocean weather station program usually remain at sea for a period of approximately 1 month. Usually four or five men from the weather bureau, assigned to the ocean weather station, assisted by Coast Guardsmen, obtain and transmit twice daily reports to Coast Guard Radio Washington and the Weather Bureau for distribution by them through the same channels as other weather information. This weather information is also sent via short wave to Europe. Part of this work entails surface observations every 3 hours, radio sonde observations (this observation is for the purpose of recording the temperature, humidity and pressure of the upper regions at various altitudes by means of radio sonde transmitters suspended from giant balloons taken daily at 1000 and 2100 GCT). The aviation interests engaged in ocean traffic make wide use of the information so received, basing their flights largely on these weather reports. Ultimately, when all 13 ocean weather stations are completely manned, the pay load of commercial air liners should show a marked increase over that formerly carried. No longer will it be necessary for airliners to carry great amounts of extra fuel because of unknown weather conditions along many parts of their route.

Surface vessels, too, benefit from the various services offered by the ocean station vessel, as they can make use of the up-to-the-minute weather information, as well as using the radio beacons to check on their position and speed. This advanced weather knowledge makes it possible for ships to get favorable winds by minor course changes, save enormously on fuel expended, as well as being able, because of time saved, to make more crossings per year. When fully manned, this proposed network will provide the best distress listening watch across the Atlantic on the 500-kilocycle band ever offered to merchant ships that might be in distress or badly in need of help.

Of the European nations that are committed to this ocean weather station program, England has two short hull corvette ships and the French Government has purchased four frigates from the United States for this purpose and when purchased were fully equipped with the necessary electronic equipment. The Netherlands and Belgium Governments, manning one station between them have also acquired American frigates and special equipment to fulfill their obligations.

DANGEROUS CARGO STOWAGE ON BOARD VESSELS

It has come to the attention of the Coast Guard that recently there was published a notice to foreign shipowners and marine interests relative to an outbreak of fire on board a foreign vessel at sea. It was established that the cause of the outbreak was due to the incorrect stowage of dangerous cargo.

The essence of the notice was the importance of masters of vessels to have in their possession all data relating to the carriage of dangerous cargo on board ships. The Merchant Marine Council concurs with this opinion.

Casualty reports covering fires on board vessels oftentimes indicate that lack of knowledge or failure to observe requirements of regulations are the cause of fires. The number of dangerous substances that are moving in commerce increase from day to day. It behooves the master of the vessel and his cargo officer to be aware of the characteristic hazard of the substance, the authorized types of containers, the authorized stowage, together with permissible admixtures in stowage with other dangerous cargo.

The Coast Guard recently revised regulations governing the Transportation of Explosives or Other Dangerous Articles on Board Vessels. Every master should have a copy of these regulations for his information and guidance. In event of a casualty the master's failure to observe the provisions of the regulations would be embarrassing to him and to the owners of his vessel.

These revised regulations may be secured by applying to the Superintendent of Documents, Government Printing Office, Washington, D. C. They are a sales publication priced at

$1.50, which remittance must accompany the request. In making application ask for "Explosives or Other Dangerous Articles on Board Vessels" (Revised July 1, 1947) CG 187.

HEARING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 728 cases during the month of February 1948. Of this number charges were preferred involving 18 licenses and 39 unlicensed men. No hearings were held because Examiners were not available.

RULES OF THE ROAD

THE MEANING OF WHISTLE SIGNALS, EXCEPT FOG SIGNALS

Steam Vessels Meeting

When steam vessels are approaching each other head and head, that is, end on, or nearly so, it shall be the duty of each to pass on the port side of the other; and either vessel shall give, as a signal of her intention, one short and distinct blast of her whistle, which the other vessel shall answer promptly by a similar blast of her whistle, and thereupon such vessels shall pass on the port side of each other. But if the courses of such vessels are so far on the starboard of each other as not to be considered as meeting head and head, either vessel shall immediately give two short and distinct blasts of her whistle, which the other vessel shall answer promptly by two similar blasts of her whistle, and they shall pass on the starboard side of each other. (Art. 18, Rule I, § 312.4.)

Steam Vessel Overtaking Another

When steam vessels are running in the same direction, and the vessel which is astern shall desire to pass on the right or starboard hand of the vessel ahead, she shall give one short blast of the steam whistle, as a signal of such desire, and if the vessel ahead answers with one blast, she shall direct her course to starboard; or if she shall desire to pass on the left or port side of the vessel ahead, she shall give two short blasts of the steam whistle as a signal of such desire, and if the vessel ahead answers with two blasts, shall direct her course to port; or if the vessel ahead does not think it safe for the vessel astern to attempt to pass at that point, she shall immediately signify the same by giving several short and rapid blasts of the steam whistle, not less than four, and under no circumstances shall the vessel astern attempt to pass the vessel ahead until such time as they have reached a point where it can be safely done, when said vessel ahead shall signify her willingness by blowing the proper signals. The vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the passing vessel. (Art. 18, Rule VIII, § 312.6.)

NOTE.—The proper signals referred to just before the last sentence in this article are: One blast if the overtaken vessel wishes to be passed on the starboard side, two blasts if she wishes to be passed on the port side. The signal must, of course, be answered by the overtaking vessel.

Crossing Steam Vessels

One short blast of the whistle * * * signifies intention of steam vessel which is to starboard of the other to hold course and speed. (§ 312.03.)

NOTE.—While the privileged vessel should blow the first whistle the courts have held that either vessel may blow first and the other vessel must then promptly answer.

If from any causes the conditions covered by this situation are such as to prevent immediate compliance with each other's signals, the misunderstanding or objection shall be at once made apparent by blowing the danger signal, and both steam vessels shall be stopped and backed if necessary, until signals for passing with safety are made and understood. (§ 312.7 (former Pilot Rule VII).)

NOTE.—In inland waters this rule changes the duty of the privileged vessel to hold course and speed to an obligation to take other remedial action as soon as there is a misunderstanding of signals.

Passing Whistles To Be Used Only When Vessels in Sight

The whistle signals provided in the rules under this article, for steam vessels meeting, passing, or overtaking, are never to be used except when steamers are in sight of each other, and the course and position of each can be determined in the daytime by a sight of the vessel itself, or by night by seeing its signal lights. In fog, mist, falling snow or heavy rain storms, when vessels cannot so see each other, fog signals only must be given. (Art. 18, Rule IX, § 312.3 (former Pilot Rule III).)

NOTE.—This rule limits the use of one, two, and three blast signals to conditions of good visibility, and can be used in fog only after the vessels sight each other. It does not apply to the danger signal, which should be used in inland waters in fog as well as clear weather whenever necessary.

No matter how little the visibility, half of it belongs to the other vessel

Passing Whistles To Be Used Whenever Approach Is Within Half a Mile

The signals for passing, by the blowing of the whistle, shall be given and answered by pilots, in compliance with the rules in this part, not only when meeting "head and head" or nearly so, but at all times when the steam vessels are in sight of each other, when passing or meeting at a distance within half a mile of each other, and whether passing to the starboard or port. (§ 312.3 (former Pilot Rule III).)

NOTE.—This rule makes it a requirement in inland waters that whenever steam vessels approach within half a mile one or two blast signals shall be exchanged regardless of a change in course by either or both vessels. It does not mean that steam vessels must wait until within half a mile before signaling, but it does mean that in inland waters they must never approach that close without signaling. Signals should always be given in plenty of time to be effective, and usually at a much greater distance than half a mile.

Special Whistle for Steamer Passing Dredge or Pipe Line

Vessels intending to pass dredges or other types of floating plant working in navigable channels, when within a reasonable distance therefrom and not in any case over a mile, shall indicate such intention by blowing the passing signal prescribed in the local pilot rules for vessels under way, which shall be answered in the usual manner from said plant if the channel is clear and the approaching vessel may pass on the course indicated; otherwise the floating plant shall sound the alarm or danger signal and the approaching vessel shall slow down or stop and await further signal from the plant.

When the pipe line from a dredge crosses the channel in such a way that an approaching vessel, owing to excessive draft or for other reasons, cannot pass around the pipe line or dredge, a signal shall be given from the vessel by sounding four blasts of the whistle, which shall be answered by a like signal from the dredge. The pipe line shall then be opened for the passage of the vessel as soon as practicable; when the line is open ready for passage, the dredge shall so indicate by sounding the usual passing

signal, and the approaching vessel shall promptly pass the dredge. (§ 312.25.)

Great Lakes

Signals Indicating Course or Speed

In all weathers every steam vessel under way in taking any course authorized or required by these rules shall indicate that course by the following signals on her whistle, to be accompanied whenever required by corresponding alteration of her helm; and every steam vessel receiving a signal from another shall promptly respond with the same signal or, as provided in rule twenty-six:

One blast to mean, "I am directing my course to starboard."

Two blasts to mean, "I am directing my course to port." But the giving or answering signals by a vessel required to keep her course shall not vary the duties and obligations of the respective vessels.

[See rule 29 for orders to helmsmen.] (Rule 23, § 322.1 (first par.))

It will be noted that on the Great Lakes passing signals must be given in fog as well as in clear weather. The three-blast signal is not used to indicate reversing, but is the Great Lakes signal for a steam vessel under way in fog. The length of the blasts is not specified in this rule, but sections 322.5, 322.8, and 322.10 require short blasts by both steam vessels in the meeting situation, by an overtaking steam vessel, and by a giving way crossing steam vessel, respectively. It will also be noted that the rule requires exchange of signals whether either vessel changes course or not.

Warning Signals, Bend Signal

Whenever a steamer is nearing a short bend or curve in the channel, where, from the height of the banks or other cause, a steamer approaching from the opposite direction cannot be seen for a distance of half a mile, the pilot of such steamer, when he shall have arrived within half a mile of such curve or bend, shall give a signal by one long blast of the whistle, which signal shall be answered by a similar blast, given by the pilot of any steamer within hearing that may be approaching on the other side, and within half a mile of such bend or curve. Should such signal be so answered by a steamer upon the farther side of such bend, then the usual signals for meeting and passing shall immediately be given and answered; but, if the first signal of such pilot be not answered, he is to consider the channel clear and govern himself accordingly. (§ 322.6.)

Whenever a steam vessel is nearing a short bend or curve in the channel where, from the height of the banks or other cause, a steam vessel approaching from the opposite direction cannot be seen for a distance of half a mile, such steam vessel, when she shall have arrived within half a mile of such curve or bend, shall give a signal by one long blast of the steam whistle, which signal shall be answered by a similar blast given by any approaching steam vessel that may be within hearing. Should such signal be so answered by a steam vessel upon the farther side of such bend, then the usual signals for meeting and passing shall immediately be given and answered; but, if the first alarm signal of such vessel be not answered, she is to consider the channel clear and govern herself accordingly.

Vessels Moving From Dock

When a steamer is moved from its dock or berth, and other steamers are liable to approach such steamer from any direction, such steamer and any approaching steamer shall give the same signals as in case of steamers meeting at a bend; but immediately after clearing the dock or berth so as to be fully in sight they shall be governed by the rules in this part for passing. (§ 322.7.)

NOTE.—The long blast signal of 8 to 10 seconds is required by this rule to be blown by both vessels.

Danger Signal

If the pilot of a steam vessel to which a passing signal is sounded deems it unsafe to accept and assent to said signal, he shall not sound a cross signal; but in that case, and in every case where the pilot of one steamer fails to understand the course or intention of an approaching steamer, whether from signals being given or answered erroneously, or from other causes, the pilot of such steamer so receiving the first passing signal, or the pilot so in doubt, shall sound several short and rapid blasts of the whistle; and if the vessels shall have approached within half a mile of each other both shall reduce their speed to bare steerageway, and if necessary, stop and reverse. (Rule 26.)

NOTE.—The danger signal is a requirement on the Great Lakes and must be used to indicate danger in all kinds of visibility. Note the additional requirement of reducing vessels to bare steerageway if they have arrived within half a mile of each other, a fact to be judged whether or not the other vessel can be seen.

If, when steamers are approaching each other, the pilot of either vessel fails to understand the course or intention of the other, whether from signals being given or answered erroneously or from other causes, the pilot so in doubt shall immediately signify the same by giving the danger signal of several short and rapid blasts of the whistle, not less than five; and if both vessels shall have approached within half a mile of each other, both shall be immediately slowed to a speed barely sufficient for steerageway, and, if necessary, stopped and reversed, until the proper signals are given, answered, and understood, or until the vessels shall have passed each other. (§ 322.2.)

Cross Signals Forbidden

Steam vessels are forbidden to use what has become technically known among pilots as "cross signals"—that is, answering one whistle with two, and answering two whistles with one. In all cases, and under all circumstances, a pilot receiving either of the whistle signals provided in the rules in this part, which for any reason he deems injudicious to comply with, instead of answering it with a cross signal, shall at once sound the danger signal and observe the rule applying thereto (§ 322.2.) (§ 322.3.)

Steam Vessels Meeting

When steamers are approaching each other "head and head," or nearly so, it shall be the duty of each steamer to pass on the portside of the other; and the pilot of either steamer may be first in determining to pursue this course, and thereupon shall give, as a signal of his intention, one short and distinct blast of his whistle, which the pilot of the other steamer shall answer promptly by a similar blast of his whistle, and thereupon such steamers shall pass on the port side of each other. But if the courses of such steamers are so far on the starboard of each other as not to be considered by pilots as meeting "head and head," or nearly so, the pilot so first deciding shall immediately give two short and distinct blasts of his whistle, which the pilot of the other steamer shall answer promptly by two similar blasts of his whistle, and they shall pass on the starboard side of each other: *Provided, however,* That in all narrow channels where there is a current, and the rivers Saint Mary, Saint Clair, Detroit, Niagara, and Saint Lawrence, when two steamers are meeting, the descending steamer shall have the right of way, and shall, before the vessels shall have arrived within the distance of one-half mile of each other, give the signal necessary to indicate which side she elects to take. * * * (Rules 17, 24, § 322.5.)

NOTE.—In channels where there is a current, this rule gives the right of way to the descending steamer, in accordance with the demands of good seamanship, because the descending steamer is the less maneuverable of the two. In fairness to the up-bound steam vessel, the privileged

steam vessel should give the signal indicating the side on which to pass as soon as practicable.

Steam Vessel Overtaking Another

When steam vessels are running in the same direction, and the vessel which is astern shall desire to pass on the right or starboard hand of the vessel ahead, she shall give one short blast of the steam whistle, as a signal of such desire, and if the vessel ahead answers with one blast, she shall direct her course to starboard; or if she shall desire to pass on the left or port side of the vessel ahead, she shall give two short blasts of the steam whistle as a signal of such desire, and if the vessel ahead answers with two blasts, shall direct her course to port; or if the vessel ahead does not think it safe for the vessel astern to attempt to pass at that point, she shall immediately signify the same by giving several short and rapid blasts of the steam whistle, not less than five, and under no circumstances shall the vessel astern attempt to pass the vessel ahead until such time as they have reached a point where it can be safely done, when said vessel ahead shall signify her willingness by blowing the proper signals. The vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the passing vessel.

Every vessel coming up with another vessel from any direction more than two points abaft her beam—that is, in such a position, with reference to the vessel which she is overtaking, that at night she would be unable to see either of that vessel's side lights—shall be deemed to be an overtaking vessel; and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of the rules in this part, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally passed and clear.

As by day the overtaking vessel cannot always know with certainty whether she is forward of or abaft this direction from the other vessel she should, if in doubt, assume that she is an overtaking vessel and keep out of the way. (§ 322.8.)

LESSONS FROM CASUALTIES

AUTOMOBILE ACCIDENTS ON FERRYBOATS

Within recent years there have been numerous instances of death to occupants of passenger automobiles embarking and debarking from ferry vessels. The fact that these misfortunes continue, even though sporadic in location and time, imposes upon the seasoned mariner the responsibility of protecting the public from its oblivion of self-safety.

Ferryboating for the landsman is an opportunity to enjoy the environs of transportation by water. The pleasantry of his experience ought not to be blotted by the memory of disaster over the brink.

In Norfolk harbor one day a man and his wife were proceeding to board a ferry by car. The husband was driving and as they passed the ticket collector at the slip of the ferry the driver was having difficulty in maneuvering his car from the pier. As he drove onto the ferry a deckhand motioned him to take the automobile lane to the left. When about half way down the lane the car began to increase speed. Another deckhand, chocking cars at the off-shore end, flagged the oncoming car and waved it to stop. Yet, it continued.

The deckhand jumped to one side. As the car grazed him, it went through a chain barrier and an iron gate and plunged off the ferry into the river.

The wife escaped through the right front window of the car, and was rescued by deckhands and passengers using life rings, ladder and a pole. But her husband was pinned under the wheel of the car—and drowned.

When the car was retrieved some several hours later, it was found to have a hydromatic clutch (automatic transmission without clutch pedal). It was learned from the wife that the car had been borrowed for the trip, and that the husband had been accustomed to her conventional clutch and gear shift. Under such circumstances, it is quite likely that in a moment of confusion human reflexes would be conditioned to convention and thereby compound the confusion. Whether this was the case here, or it was a matter of mechanical difficulties, no one will ever know.

In New York, a Staten Island ferry had unloaded its passengers and motor vehicles and had commenced reloading. The ferry was put at slow ahead during these operations so as to keep its loading end snug up against the ferry-slip bridge. When about 18 automobiles had driven on board, the

Disaster Over the Brink.

master noticed the vessel drawing slowly away from the bridge. Just at this instant, a car driven by a man and accompanied by his wife, was about to pass on to the end of the ferry.

The port mooring line parted and the starboard line pulled off the winch drum, after which the ferry continued to move away until about ten feet off. The master put the pilothouse control lever at half ahead, and sounded three blasts on the whistle to attract attention of his deck hands. The deck hand taking tickets rushed towards the endangered car in a frantic and futile effort to warn the occupants to stop the vehicle. But as he did so, the car was in the process of toppling into the water between the ferry and the bridge.

Three hours later the car was raised from the water and both occupants therein were dead.

Although the investigation did not determine the parent cause for the ferry drawing from its slip, the master was considered inattentive to duty for failure to take prompt and effective action before the mooring lines failed.

In the Great Lakes area a ferry was crossing a river with automobiles and passengers. When about 500 to 600 feet from the Canadian shore, the driver of one car got out and went to the pilothouse to tell the master that he was going to start his car, as the self-starter was inoperative and it was necessary to use a hand crank. The master told the driver not to start the car until the vessel had docked. But the driver proceeded contrary to orders.

Four occupants were in the car at the time, none of whom was behind the wheel. As the engine started, the car backed up, knocked down the loading apron, and backed off into the water. The driver dropped the hand crank and attempted vainly to stop the car by grabbing on to the front fender. Despite these efforts, three occupants, all women, drowned.

Six months later, the car had not been found, although the bodies were recovered within 3 weeks.

Testimony by the one surviving occupant revealed that while the driver was cranking, his wife, sitting next to the driver's seat, must have accidentally knocked the gear shift into reverse. The engine was turned over several times before moving the car. "I went to the bottom of the river," stated the survivor, "but in some way reached the surface and was rescued. There was no blocking placed at the wheels of the car on the ferry, and the aprons at each end were elevated and held up by rope which broke on impact."

On an inland river of Kentucky, a State-owned ferry took aboard an automobile and two passengers, both of whom were apparently drunk. When about half way across the river toward the north shore, the driver started up his car, put it in gear and drove off the end of the ferry.

The car broke through the guard cable and went off the apron into the river nose down. It immediately sank from sight.

Although the driver escaped from the automobile and came to the surface, he later drowned before assistance could reach him. The second occupant was found in the car when it was recovered from the river 6 hours later.

It was the opinion of the ferryboat men that the driver probably thought the vessel had reached the other shore as the passage was very narrow at the ferry crossing.

In Tennessee, four persons (father and three sons) were drowned when their truck rolled off a cable ferry barge. This incident is so recent, that investigatory details are not yet available.

In the Portland, Oreg., area, on an electrically operated cable ferry, the second car to come aboard made a normal approach. It came down the decline of the slip in low gear at about 3 miles per hour, and was directed by the deck hand to take position on the starboard side close up to the safety cable. At about midway on the ferry, the attention of all persons was attracted by the sudden racing of the engine in the approaching car.

Still in low gear, the car sped along the deck, crashed through the safety cable and plunged into the river where it sank in 15 feet of water. In the car was a woman driver and her two daughters, one age 4 and the other 17.

Somehow, the older daughter came to the surface, but was unable to swim. While struggling for survival in the freezing water and strong tide, she was rescued by the timely and heroic efforts of two bystanders, who themselves dove into the water.

After 4 hours of work by an ambulance and a wrecker, the car was raised to the deck of the ferry where the bodies of the mother and younger daughter were found inside.

It was concluded that this unfortunate incident resulted from either a mechanical failure of the car, or by the slipping of the driver's foot from the brake pedal onto the accelerator.

In Seattle, Wash., blocks were placed under the rear wheels of the last automobile to board the ferry. The owner of the car, contrary to posted warning signs, did not set the brakes. As the ferry started forward, the car came back on the blocks, knocked them aside and rolled off the end. No one was in the car at the time.

There are other instances on record, comparable to those above, which depict the hazards of embarking and debarking motor vehicles from ferry vessels. Those related herein, seven in number, occurred within the past 2 years. When considering the vast number transported by ferries throughout the country, automobiles involved in casualties of this sort form an infinitesimal minority. The uncertainty of time and location of such mishaps and the almost certain death resulting therefrom, creates an apprehension in the public mind which is not easily overcome by mathematical persuasiveness. Most people are concerned with their own personal safety even though statistically their misfortunes may be minor.

It is to be noted that hardly ever is the responsibility for automobile disasters on ferryboats directly attributed to the negligence or inattention to duty of ferryboat personnel. This, however, does not relieve such personnel from an indirect responsibility for the safety of the traveling public. They should be always on guard, and should in fact discipline themselves towards this end, to detect any hesitancy, uncertainty, nervousness, operational difficulties, or other unusual features of passengers driving automobiles onto, and off, ferry vessels. Safety chains, cables, gates, aprons, blocks, etc., are not designed to combat the type of disasters described. Such equipment is suggestive in its prevention of casualties, rather than absolute. It would not be economically feasible nor operationally practicable to install equipment on the off-shore end of a ferry to guarantee that no vehicle ever passed it. As a consequence, ferryboat personnel themselves must seek to aggressively prevent unsafe automobile operation on ferry vessels.

It will do no good to rely solely on posted signs, chain cables, blocks, etc., and then take an attitude that one has done his best, and if something happens it's the automobile driver's fault. Modern attendants at sightseeing skyscrapers and other public places are trained, and have trained themselves, to scan visitors in such a way as to pick out likely unsafe persons—those who would commit suicide or other acts of disorder—and then keep a watchful eye on them until they have left their premises. Ferryboat personnel could, and should do likewise in connection with passenger-driven automobiles.

To many, even those who commute by ferry day after day, a ferryboat passage is a sightseeing experience. It can be a pleasant or unpleasant experience depending on the protective eye of ferryboat personnel.

APPENDIX

Amendments to Regulations

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

[CGFR 48-14]

PART 1—GENERAL ORGANIZATION AND JURISDICTION

SUBPART 1.10—FIELD ORGANIZATION

By virtue of the authority vested in me by the act of Aug. 29, 1916, ch. 417, 39 Stat. 601; 14 U. S. C. 95, the following amendments to the regulations are prescribed, to become effective April 1, 1948:

1. Section 1.10-1 is amended as follows: Change the number of Coast Guard Districts from "12" to "11".

2. Section 1.10-5 is amended to read as follows:

§ 1.10-5 *Coast Guard districts and offices.* The 11 Coast Guard districts comprise the areas indicated and have offices as specified in the table below:

Coast Guard District and Address of Coast Guard District Office

First—Maine, New Hampshire; Vermont except the counties of Orleans, Franklin, Grand Isle, Chittenden, and Addison; Massachusetts; Rhode Island; all U. S. Naval reservations on shore in Newfoundland: 1400 Customhouse, Boston 13, Mass.

Second—West Virginia, Kentucky, Tennessee, Oklahoma, Kansas, Nebraska, North Dakota, South Dakota, Iowa, Missouri; Pennsylvania south of latitude 41° N. and west of longitude 79° W.; those parts of Ohio and Indiana south of latitude 41° N.; Illinois, except that part north of latitude 41° N. and east of longitude 90° W.; Wisconsin south of latitude 46°20' N. and west of longitude 90° W.; Minnesota south of latitude 46°20' N.; and those parts of Arkansas, Mississippi, and Alabama north of latitude 34° N.: 232 Old Customhouse, Eighth and Olive Streets, St. Louis 1, Mo.

Third—The counties of Orleans, Franklin, Grand Isle, Chittenden, and Addison in Vermont; Connecticut; New York, except that part north of latitude 42° N. and west of longitude 74°39' W.; New Jersey; Pennsylvania east of longitude 79° W.; Delaware, including Fenwick Island: 42 Broadway, New York 4, N. Y.

Fifth—Maryland, Virginia, and North Carolina: Box 540, New Post Office Building, Norfolk 1, Va.

Seventh—South Carolina and Georgia; Florida, except that part west of the Apalachicola River; Panama Canal Zone; all of the island possessions of the United States pertaining to Puerto Rico and Virgin Islands; and all United States naval reservations in the islands of the West Indies and on the north coast of South America: P. O. Box 378, Coconut Grove Station, Miami 33, Fla.

Eighth—Texas and Louisiana; those parts of Alabama, Mississippi, and Arkansas south of latitude 34° N.; and that part of Florida west of the Apalachicola River: P. O. Box 282, New Orleans 9, La. (Custom House).

Ninth—Michigan; New York north of latitude 42° N. and west of longitude 74°39' W.; Pennsylvania north of latitude 41° N. and west of longitude 79° W.; those parts of Ohio and Indiana north of latitude 41° N.; Illinois north of latitude 41° N. and east of longitude 90° W.; Wisconsin, except that part south of latitude 46°20' N. and west of longitude 90° W.; and Minnesota north of latitude 46°20' N.: 1700 Keith Building, Cleveland 15, Ohio.

Eleventh—New Mexico and Arizona; Clark County in Nevada; and the southern part of California comprising the counties of Santa Barbara, Kern, and San Bernardino, and all counties south thereof: 706 Times Building, Long Beach 2, Calif.

Twelfth—Colorado and Utah; Nevada, except Clark County; and the northern part of California comprising the counties of San Luis Obispo, Kings, Tulare, and Inyo, and all counties north thereof: 907 Appraisers Building, 630 Sansome Street, San Francisco 26, Calif.

Thirteenth—Washington, Oregon, Idaho, Montana, Wyoming, and the Territory of Alaska: New World Life Building, 618 Second Avenue, Seattle 4, Wash.

Fourteenth—Territory of Hawaii; and the Pacific Islands belonging to the United States west of longitude 140° W. and south of latitude 42° N.: P. O. Box 4010, Honolulu, T. H. (Federal Building).

3. Section 1.10-20 (a) is amended to read as follows:

§ 1.10-20 *Marine inspection districts and offices*—(a) *General.* For purposes of administering the marine inspection activities, local marine inspection offices are established within the several Coast Guard Districts. Each such office is responsible for a certain geographical area. The location of these offices and the Coast Guard District in which located are specified below:

Coast Guard District, Marine Inspection Office and Address

First

Boston—447 Commercial Street, Boston, Mass.; Portland, Maine—76 Pearl Street, Portland 3, Maine; Providence—409 Federal Building, Providence 3, R. I.

Second

St. Louis—216 Old Customhouse, St. Louis 1, Mo.; Cairo—425-427 New Post Office Building, Cairo, Ill.; Dubuque—301 Post Office and Courthouse, Dubuque, Iowa; Cincinnati—748 Federal Building, Cincinnati, Ohio; Louisville—Kentucky Home Life Building, Louisville, Ky.; Memphis — 322 Customhouse, Memphis 3, Tenn.; Nashville—1018 Stahlman Building, Nashville 3, Tenn.; Pittsburgh—1215 Park Building, Pittsburgh 22, Pa.; Point Pleasant—Post Office Building, Point Pleasant, W. Va.

Third

New York— 42 Broadway, New York 4, N. Y.; New London—302 New Post Office Building, New London, Conn.; New Haven—311 Federal Building, New Haven 10, Conn.; Albany—313 Federal Building, Albany 1, N. Y.; Philadelphia—801 Customhouse, Second and Chestnut Streets, Philadelphia 6, Pa.

Fifth

Norfolk—204 Customhouse, Norfolk, Va.; Baltimore—209 Chamber of Commerce Building, Baltimore, Md.

Seventh

Miami—501 Professional Building, Miami, Fla.; Tampa—406 Federal Building, Tampa, Fla.; Charleston—32 Customhouse, Charleston, S. C.; Savannah—205 Customhouse, Savannah 12, Ga.; Jacksonville—210 Federal Building, Jacksonville 1, Fla.; San Juan—Federal Building, San Juan, Puerto Rico.

Eighth

New Orleans—311 Customhouse, New Orleans 12, La.; Mobile—565 Courthouse and Customhouse, Mobile 9, Ala.; Port Arthur—410 Bluestein Building, Port Arthur, Tex.; Galveston—232 Customhouse, Galveston, Tex.; Corpus Christi—919 Jones Building, Corpus Christi, Tex.; Houston—310 Appraisers Store Building, Houston, Tex.

Ninth

Cleveland—1700 Keith Building, Cleveland 15, Ohio; Buffalo—440 Federal Building, Buffalo 3, N. Y.; Oswego—205 Federal Building, Oswego, N. Y.; Detroit—430 Federal Building, Detroit, Mich.; Duluth—311 Federal Building, Duluth, Minn.; Toledo—402 Courthouse and Customhouse, Toledo 2, Ohio; Saint Ignace—Municipal Building, Saint Ignace, Mich.; Chicago—Customhouse, 610 Canal Street, Chicago 7, Ill.; Ludington—National Bank of Ludington, Ludington, Mich.; Milwaukee—533 Federal Building, Milwaukee 2, Wis.

Eleventh

Long Beach—1119 Times Building, Long Beach 2, Calif.

Twelfth

San Francisco—227 U. S. Appraisers Building, San Francisco 26, Calif.

Thirteenth

Seattle—New World Life Building, Seattle 4, Wash.; Portland—1005 Failing Building, Portland 4, Oreg.; Ketchikan—Federal Building, Ketchikan, Alaska.

Fourteenth

Honolulu—210 Federal Building, Honolulu, T. H.

(39 Stat. 601; 14 U. S. C. 95)

Dated: March 25, 1948.

[SEAL] E. H. FOLEY, Jr.,
Acting Secretary of the Treasury.

[F. R. Doc. 48-2914; Filed, Apr. 1, 1948; 9:00 a. m.; 13 F. R. 1815, April 2, 1948]

TITLE 46—SHIPPING

Chapter I—Coast Guard: Inspection and Navigation

Appendix A—Waivers of Navigation and Vessel Inspection Laws and Regulations

[CGFR 48-10]

QUALIFIED MEMBERS OF ENGINE DEPARTMENT ON GREAT LAKES VESSELS

CANCELLATION OF GENERAL WAIVER

A notice regarding proposed changes in general waivers of navigation and inspection laws and regulations regarding manning requirements was published in the FEDERAL REGISTER dated March 23, 1948 (13 F. R. 1508), and a public hearing was held by the Merchant Marine Council on March 31, 1948, at Washington, D. C. The purpose of this hearing was to consider the comments, data, and views of all persons desiring to submit them on the manning requirements for merchant vessels during the orderly reconversion of the merchant marine from a wartime to a peacetime basis. All the comments, data, and views submitted were considered by the Merchant Marine Council and incorporated in its recommendations to the Commandant, United States Coast Guard, and have been incorporated, where practicable, in the revised waivers of navigation and vessel inspection laws and regulations regarding manning requirements.

Pursuant to the authority vested in me as Commandant, United States Coast Guard, by the act of March 31, 1947 (Pub. Law 27, 80th Cong., 1st session), as amended by the act of July 31, 1947 (Pub. Law 293, 80th Cong., 1st session), and as amended by section 2 of the act of February 27, 1948 (Pub. Law 423, 80th Cong., 2nd session), I hereby find it no longer necessary in the orderly reconversion of the merchant marine from wartime to peacetime operations to continue in effect beyond July 15, 1948, the waiver of navigation and vessel inspection laws and regulations which waived compliance with any law or regulation imposing requirements for carrying as members of the crews of Great Lakes vessels engaged in business connected with the conduct of the war certificated seamen rated as qualified members of the engine department, or forbidding service in the engine department of such vessels without a certificate of service as qualified member of the engine department (9 F. R. 4402; 46 CFR 1944 Supp., Chapter I, Appendix A):

Therefore, it is ordered, That the waiver of navigation and vessel inspection laws and regulations entitled "Qualified Members of the Engine Department on Great Lakes Vessels," dated April 22, 1944 (9 F. R. 4402; 46 CFR 1944 Supp., Chapter I, Appendix A) shall be canceled effective July 15, 1948: *Provided*, That nothing herein shall impair the continuing effectiveness of individual waivers effectuated on or before July 14, 1948, pursuant to said order of April 22, 1944, nor shall any penalty of law be imposed because of failure to comply with any provision of law or regulation the waiver of which was made effective pursuant thereto.

(Pub. Laws 27, 293, 80th Cong., 1st session, sec. 2, Pub. Law 423, 80th Cong., 2d session)

Dated: April 12, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard, Commandant.

[F. R. Doc. 48-3392; Filed, Apr. 16, 1948; 8:49 a. m. 13 F. R. 2070, April 17, 1948]

[CGFR 48-17]

CONDITIONAL WAIVER OF MANNING REQUIREMENTS

CANCELLATION OF GENERAL WAIVER

A notice regarding proposed changes in general waivers of navigation and inspection laws and regulations regarding manning requirements was published in the Federal Register dated March 23, 1948 (13 F. R. 1508), and a public hearing was held by the Merchant Marine Council on March 31, 1948, at Washington, D. C. The purpose of this hearing was to consider the comments, data, and views of all persons desiring to submit them on the manning requirements for merchant vessels during the orderly reconversion of the merchant marine from a wartime to a peacetime basis. All the comments, data, and views submitted were considered by the Merchant Marine Council and incorporated in its recommendations to the Commandant, United States Coast Guard, and have been incorporated, where practicable, in the revised waivers of navigation and vessel inspection laws and regulations regarding manning requirements.

Pursuant to the authority vested in me as Commandant, United States Coast Guard, by the act of March 31, 1947 (Pub. Law 27, 80th Cong., 1st sess.), as amended by the act of July 31, 1947 (Pub. Law 293, 80th Cong., 1st sess.), and as amended by section 2 of the act of February 27, 1948 (Pub. Law 423, 80th Cong., 2d sess.), I hereby find it no longer necessary in the orderly reconversion of the merchant marine from wartime to peacetime operations to continue in effect beyond July 15, 1948, the general waiver of navigation and vessel inspection laws and regulations which conditionally waived compliance with certain of the manning requirements with respect to merchant cargo and tank vessels to allow the substitution of seamen of lower rank or rating to fill vacancies in higher ranks or ratings (12 F. R. 3248):

Therefore, it is ordered, That the waiver of navigation and vessel inspection laws and regulations entitled "Conditional Waiver of Manning Requirements," dated May 14, 1947, and published in the Federal Register dated May 20, 1947 (12 F. R. 3248) shall be canceled effective July 15, 1948: *Provided*, That nothing herein shall impair the continuing effectiveness of individual waivers effectuated on or before July 14, 1948, pursuant to said order of May 14, 1947, nor shall any penalty of law be imposed because of failure to comply with any provision of law or regulation the waiver of which was made effective pursuant thereto.

(Pub. Laws 27, 293, 80th Cong., 1st session, and sec. 2, Pub. Law 423, 80th Cong., 2nd session)

Dated: April 12, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard, Commandant.

[F. R. Doc. 48-3394; Filed, Apr. 16, 1948; 8: 50 a. m. 13 F. R. 2070 April 17, 1948]

[CGFR 48-18]

ABLE SEAMEN EMPLOYED ON MERCHANT CARGO AND TANK VESSELS OTHER THAN GREAT LAKES VESSELS

CONDITIONAL WAIVER OF MANNING REQUIREMENTS

A notice regarding proposed changes in general waivers of navigation and inspection laws and regulations regarding manning require-

ments was published in the FEDERAL REGISTER dated March 23, 1948 (13 F. R. 1508), and a public hearing was held by the Merchant Marine Council on March 31, 1948, at Washington, D. C. The purpose of this hearing was to consider the comments, data, and views of all persons desiring to submit them on the manning requirements for merchant vessels during the orderly reconversion of the merchant marine from a wartime to a peacetime basis. All the comments, data, and views submitted were considered by the Merchant Marine Council and incorporated in its recommendations to the Commandant, United States Coast Guard, and have been incorporated, where practicable, in the revised waivers of navigation and vessel inspection laws and regulations regarding manning requirements.

Pursuant to the authority vested in me as Commandant, United States Coast Guard, by the act of March 31, 1947 (Pub. Law 27, 80th Cong.), as amended by the act of July 31, 1947 (Pub. Law 293, 80th Cong.), and as amended by section 2 of the act of February 27, 1948 (Pub. Law 423, 80th Cong.), I hereby find it necessary in the orderly reconversion of the merchant marine from wartime to peacetime operations to waive compliance with the navigation and vessel inspection laws to the extent and upon the terms and conditions set forth in the succeeding numbered paragraphs:

1. *Waiver.* I hereby waive compliance with the provisions of section 13 of the act of March 4, 1915, as amended (38 Stat. 1169, sec. 1, 50 Stat. 199; 46 U. S. C. 672 (a)), to the extent that when properly qualified able seamen are not available to man merchant cargo and tank vessels of the United States other than those navigating the Great Lakes, to allow seamen examined and rated able seamen under said section after having served on deck 12 months at sea or on the Great Lakes, to compose not more than one-half of the number of able seamen required by such section to be shipped or employed on merchant cargo and tank vessels other than those navigating the Great Lakes.

2. *Terms and conditions.* The employment of seamen examined and rated able seamen after having served on deck 12 months at sea or on the Great Lakes, as herein authorized, shall be permitted only to the extent of the nonavailability of properly qualified able seamen, as determined after reasonable efforts made by the master, owner and others concerned to secure the employment of properly qualified able seamen, and in no event to exceed one-half the number of able seamen required by law to be employed on any merchant cargo and tank vessel other than those navigating the Great Lakes, and as specified in the vessel's certificate of inspection.

3. *Penalties.* The failure of the master of any vessel sailing with a deficiency in the required complement of able seamen to comply with the conditions required by this waiver shall be considered misconduct within the meaning of R. S. 4450, as amended, 46 U. S. C. 239, and shall constitute grounds for suspension or revocation of the license of such master; and shall subject him and the owners to all other penalties provided by law. No penalty shall be imposed as a consequence of any waiver made effective pursuant hereto.

4. *Effective date.* This order shall be in effect on and after July 15, 1948. (Pub. Laws 27, 293, 80th Cong., 1st session, and sec. 2, Pub. Law 423, 80th Cong., 2d session)

Dated: April 12, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-3391; Filed, Apr. 16, 1948; 8: 49 a. m. 13 F. R. 2070, April 17, 1948]

[CGFR 48-19]

ABLE SEAMEN EMPLOYED ON GREAT LAKES MERCHANT CARGO AND TANK VESSELS

CONDITIONAL WAIVER OF MANNING REQUIREMENTS

A notice regarding proposed changes in general waivers of navigation and inspection laws and regulations regarding manning requirements was published in the FEDERAL REGISTER dated March 23, 1948 (13 F. R. 1508), and a public hearing was held by the Merchant Marine Council on March 31, 1948, at Washington, D. C. The purpose of this hearing was to consider the comments, data, and views of all persons desiring to submit them on the manning requirements for merchant vessels during the orderly reconversion of the merchant marine from a wartime to a peacetime basis. All the comments, data, and views submitted were considered by the Merchant Marine Council and incorporated in its recommendations to the Commandant, United States Coast Guard, and have been incorporated, where practicable, in the revised waivers of navigation and vessel inspection laws and regulations regarding manning requirements.

Pursuant to the authority vested in me as Commandant, United States Coast Guard, by the act of March 31, 1947 (Pub. Law 27, 80th Cong.), as amended by the act of July 31, 1947 (Pub. Law 293, 80th Cong.), and as amended by section 2 of the act of February 27, 1948 (Pub. Law 423, 80th Cong.), I hereby find it necessary in the orderly reconversion of the merchant marine from wartime to peacetime operations to waive compliance with the navigation and vessel inspection laws to the extent and upon the terms and conditions set forth in the succeeding numbered paragraphs:

1. *Waiver.* I hereby waive compliance with the provisions of section 13 of the act of March 4, 1915, as amended (38 Stat. 1169, sec. 1, 50 Stat. 199; 46 U. S. C. 672 (a)), to the extent that when properly qualified able seamen are not available to man merchant cargo and tank vessels of the United States navigating the Great Lakes, to allow certificated ordinary seamen who have served a minimum of 8 months on deck at sea or on the Great Lakes, to compose not more than one-half the number of able seamen required by such section to be shipped or employed on any Great Lakes merchant cargo and tank vessel.

2. *Terms and conditions.* The employment of certificated ordinary seamen who had served at least 8 months on deck at sea or on the Great Lakes, as herein authorized shall be permitted only to the extent of the nonavailability of properly qualified able seamen, as determined after reasonable efforts made by the master, owner and others concerned to secure the employment of properly qualified seamen, and in no event to exceed one-half the number of able seamen required by law to be employed on any merchant cargo and tank vessel navigating the Great Lakes, and as specified in the vessel's certificate of inspection. Seamen employed under this waiver shall present to the master of the vessel at the time of being employed authentic evidence of at least 8 months' service on deck at sea or on the Great Lakes. This evidence shall consist of one or more certificates of discharge or other properly authenticated record of service showing the name of the vessel or vessels and the dates employed thereon.

3. *Penalties.* The failure of the master of any vessel sailing with a deficiency in the required complement of able seamen to comply with the conditions required by this waiver shall be considered misconduct within the meaning of R. S. 4450, as amended, 46 U. S. C. 239, and shall constitute grounds for suspension or revocation of the license of such master; and shall subject him and the owners to all other penalties provided by law. No penalty shall be imposed as a consequence of any waiver made effective pursuant hereto.

4. *Effective date.* This order shall be in effect on and after July 15, 1948. (Pub. Laws 27, 293, 80th Cong., 1st session, and sec. 2, Pub. Law 423, 80th Cong., 2d session)

Dated: April 12, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-3390; Filed, Apr. 16, 1948; 8:49 a. m., 20 F. R. 2071, April 17, 1948]

[CGFR 48-20]

EMPLOYMENT OF ALIENS AS UNLICENSED CREW MEMBERS ON SUBSIDIZED VESSELS

CONDITIONAL WAIVER OF MANNING REQUIREMENTS

A notice regarding proposed changes in general waivers of navigation and inspection laws and regulations regarding manning requirements was published in the FEDERAL REGISTER dated March 23, 1948 (13 F. R. 1508), and a public hearing was held by the Merchant Marine Council on March 31, 1948, at Washington, D. C. The purpose of this hearing was to consider the comments, data, and views of all persons desiring to submit them on the manning requirements for merchant vessels during the orderly reconversion of the merchant marine from a wartime to a peacetime basis. All the comments, data, and views submitted were considered by the Merchant Marine Council and incorporated in its recommendations to the Commandant, United States Coast Guard, and have been incorporated, where practicable, in the revised waivers of navigation and vessel inspection laws and regulations regarding manning requirements.

Pursuant to the authority vested in me as Commandant, United States Coast Guard, by the act of March 31, 1947 (Pub. Law 27, 80th Cong.), as amended by the act of July 31, 1947 (Pub. Law 293, 80th Cong.), as amended by section 2 of the act of February 27, 1948 (Pub. Law 423, 80th Cong., 2nd session), I hereby find it necessary in the orderly reconversion of the merchant marine from wartime to peacetime operations to waive compliance with the navigation and vessel inspection laws and regulations to the extent and upon the terms and conditions set forth in the succeeding numbered paragraphs:

1. *Waiver.* I hereby waive compliance with the provisions of sections 302 (a), (b) and (c) of the act of June 29, 1936 (49 Stat. 1992; 46 U. S. C. 1132 (a), (b) and (c), to the extent that when United States citizens with appropriate ratings are not available for employment in the unlicensed crew of subsidized vessels of the United States aliens not to exceed fifteen per centum of such entire unlicensed crew may be employed. The employment of aliens to supply such deficiencies, as herein authorized, shall be permitted only to the extent of the nonavailability of United States citizens, as determined after reasonable efforts made by the master, owner and others concerned to secure the employment of United States citizens, and in no event to exceed fifteen per centum of the entire unlicensed crew employed on any subsidized vessel of the United States: *Provided*, That such aliens as are employed under this waiver authority shall have served between December 7, 1941, and September 2, 1945, aboard vessels operated by the War Shipping Administration, the United States Maritime Commission, or the Army Transport Service, and shall present to the Shipping Commissioner or master of the vessel at the time of being employed authentic evidence of such service. This evidence shall consist of a certificate of discharge or other properly authenticated record of service showing the name of the vessel and the dates employed thereon.

2. *Penalties.* The failure of the master of any subsidized vessel sailing with a deficiency in the required complement of unlicensed crew members to comply with the conditions required by this waiver shall be considered misconduct within the meaning of R. S. 4450, as amended, 46 U. S. C. 239, and shall constitute grounds for suspension or revocation of the license of such master; and shall subject him and the owners to all other penalties provided by law. No penalty shall be imposed as a consequence of any waiver made effective pursuant hereto.

3. *Effective date.* This order shall be in effect on and after July 15, 1948. This order supersedes and cancels, effective July 15, 1948, the order dated July 31, 1947 (12 F. R. 5342), which permitted up to twenty-five per centum of the unlicensed crew of any subsidized vessel to be aliens under specified conditions, *Provided*, That nothing herein shall impair the continuing effectiveness of waivers effectuated on or before July 14, 1948, pursuant to said order of July 31, 1947, nor shall any penalty of law be imposed because of failure to comply with any provision of law or regulation the waiver of which was made effective pursuant thereto.

(Pub. Laws 27, 293, 80th Cong., 1st sess., and sec. 2, Pub. Law 423, 80th Cong., 2d sess.)

Dated: April 12, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-3393; Filed, Apr. 16, 1948; 8:50 a. m., 13 F. R. 2071, April 17, 1948]

[CGFR 48-21]

QUALIFIED MEMBERS OF THE ENGINE DEPARTMENT EMPLOYED ON GREAT LAKES MERCHANT CARGO AND TANK VESSELS

CONDITIONAL WAIVER OF MANNING REQUIREMENTS

A notice regarding proposed changes in general waivers of navigation and inspection laws and regulations regarding manning requirements was published in the FEDERAL REGISTER dated March 23, 1948 (13 F. R. 1508), and a public hearing was held by the Merchant Marine Council on March 31, 1948, at Washington, D. C. The purpose of this hearing was to consider the comments, data, and views of all persons desiring to submit them on the manning requirements for merchant vessels during the orderly reconversion of the merchant marine from a wartime to a peacetime basis. All the comments, data, and views submitted were considered by the Merchant Marine Council and incorporated in its recommendations to the Commandant, United States Coast Guard, and have been incorporated, where practicable, in the revised waivers of navigation and vessel inspection laws and regulations regarding manning requirements.

Pursuant to the authority vested in me as Commandant, United States Coast Guard, by the act of March 31, 1947 (Pub. Law 27, 80th Cong.), as amended by the act of July 31, 1947 (Pub. Law 293, 80th Cong.), and as amended by the act of February 27, 1948 (Pub. Law 423, 80th Cong.), I hereby find it necessary in the orderly reconversion of the merchant marine from wartime to peacetime operations to waive compliance with the navigation and vessel inspection laws to the extent and upon the terms and conditions set forth in the succeeding numbered paragraphs:

1. *Waiver.* I hereby waive compliance with the provisions of section 13 of the act of March 4, 1915, as amended (46 U. S. C. 672 (e)), to the extent that when qualified members of the engine department in the rating of fireman are not available for employment on coal burning merchant cargo and tank vessels of the United States navigating the Great Lakes, to allow seamen certificated for other engine room ratings who have served a minimum of 3 months in the fireroom of coal burning Great Lakes vessels to serve as qualified members of the engine department in the rating of fireman on such vessels.

2. *Terms and conditions.* The employment of certificated seamen who have served at least 3 months in the

fireroom on coal burning Great Lakes vessels, as herein authorized shall be permitted only to the extent of the nonavailability of qualified members of the engine department in the rating of fireman, as determined after reasonable efforts made by the master, owner, or others concerned to secure the employment of properly qualified seamen. Any seaman employed under this waiver shall present to the master of the vessel at the time of being employed authentic evidence of at least 3 months' service in the fireroom of coal burning Great Lakes vessels. This evidence shall consist of one or more certificates of discharge or other properly authenticated record of service showing the name of the vessel or vessels and the dates employed thereon.

3. *Penalties.* The failure of the master of any Great Lakes merchant cargo or tank vessel sailing with a deficiency in the required complement of qualified members of the engine department to comply with the conditions required by this waiver shall be considered misconduct within the meaning of R. S. 4450, as amended, 46 U. S. C. 239, and shall constitute grounds for suspension or revocation of the license of such master; and shall subject him and the owners to all other penalties provided by law. No penalty shall be imposed as a consequence of any waiver made effective pursuant hereto.

4. *Effective date.* This order shall be in effect on and after July 15, 1948.

(Pub. Laws 27, 293, 80th Cong., 1st session, and sec. 2, Pub. Law 423, 80th Cong., 2nd session.)

Dated: April 12, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-3395; Filed, Apr. 16, 1918; 8:50 a. m.; 13 F. R. 2072, April 17, 1948]

Equipment Approved by the Commandant

United States Coast Guard

[CGFR 48-22]

APPROVAL OF EQUIPMENT

By virtue of the authority vested in me by R. S. 4405 and 4491, as amended (46 U. S. C. 375, 489), and section 101 of Reorganization Plan No. 3 of 1946 (11 F. R. 7875), as well as the additional authorities cited with specific items below, the following approvals of equipment are prescribed and shall be effective for a period of five years from date of publication in the FEDERAL REGISTER unless sooner canceled or suspended by proper authority:

BUOYANT CUSHIONS, STANDARD

NOTE: Cushions are for use on motorboats of classes A, 1, and 2 not carrying passengers for hire.

Approval No. 160.007/64/0, standard kapok buoyant cushion, U. S. C. G. Specification 160.007, manufactured by Camel Manufacturing Company, 329 South Central Street, Knoxville, Tenn.

(54 Stat. 164, 166; 46 U. S. C. 526e, 526p; 46 CFR 25.4-1, 28.4-8)

DAVITS, LIFEBOAT

Approval No. 160.032/100/0, gravity davit, Type 7-75, approved for maximum working load of 15,000 pounds per set (7,500 pounds per arm) using 2 part falls, identified by general arrangement Dwg. No. 3138-1 dated 31 January 1947 and revised 15 March 1947, submitted by the Welin Davit and Boat Division of the American Steel and Copper Industries, Inc., Perth Amboy, N. J.

(R. S. 4417a, 4426, 4481, 4488, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 474, 481, 1333, 50 U. S. C. 1275; 46 CFR 37.1-4, 59.3, 60.21, 76.15, 94.14, 113.23)

MECHANICAL DISENGAGING APPARATUS (FOR LIFEBOATS)

Approval No. 160.033/31/0, Rottmer Type A-2 releasing gear, approved for maximum working load of 37,540 pounds per set (18,770 pounds per hook), identified by hoist gear assembly Dwg. No. M-55-1, dated 29 July 1946 and revised 10 March 1948, manufactured by Marine Safety Equipment Corp., Point Pleasant, N. J.

(R. S. 4417a, 4426, 4488, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 481, 1333, 50 U. S. C. 1275; 46 CFR 37.1-7, 59.68, 76.62, 94.59)

LIFEBOATS

Approval No. 160.035/185/0, 26' x 8.3' x 3.6' steel oar-propelled lifeboat, 46-person capacity, identified by construction and arrangement Dwg. No. 3188 dated 1 November 1947 and revised 8 March 1948, submitted by the Welin Davit and Boat Division of the American Steel and Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/199/0, 26' x 9' x 3.83' steel hand-propelled lifeboat, 53-person capacity, identified by construction and arrangement Dwg. No. 3183 dated 15 October 1947 and revised 8 March 1948, submited by the Welin Davit and Boat Division of the American Steel and Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/200/0, 26' x 9' x 3.83' steel motor-propelled lifeboat with radio cabin, 43-person capacity, identified by construction and arrangement Dwg. No. 3186 dated 21 October 1947 and revised 8 March 1948, submitted by the Welin Davit and Boat Division of the American Steel and Copper Industries, Inc., Perth Amboy, N. J.

(R. S. 4417a, 4426, 4481, 4488, 4492, 35 Stat. 423, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 396, 404, 474, 481, 490, 1333, 50 U. S. C. 1275; 46 CFR 37.1-1, 59.13, 76.16, 94.15, 113.10)

LIFE PRESERVERS, CORK AND BALSA WOOD (JACKET TYPE)

Approval No. A-344, standard adult cork life preserver, manufactured by Elvin Salow Co., 379-381 Atlantic Avenue, Boston 10, Mass.

Approval No. A-345, standard child cork life preserver, manufactured by Elvin Salow Co., 379-381 Atlantic Avenue, Boston 10, Mass.

Approval No. A-346, standard adult balsa wood life preserver, manufactured by Elvin Salow Co., 379-381 Atlantic Avenue, Boston 10, Mass.

Approval No. A-347, standard child balsa wood life preserver, manufactured by Elvin Salow Co., 379-381 Atlantic Avenue, Boston 10, Mass.

(R. S. 4417a, 4426, 4488, 4492, 35 Stat. 428, 49 Stat. 1544, 54 Stat. 164, 166, 346, sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 396, 404, 481, 490, 526e, 526p, 1333, 50 U. S. C. 1275; 46 CFR 28.4-1, 33.6-1, 59.55, 60.48, 76.52, 94.52, 113.44)

Dated: April 13, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-3448; Filed, Apr. 19, 1948; 8:50 a. m., 13 F. R. 2111 Apr. 20, 1948]

APPROVAL AND TERMINATION OF APPROVAL OF EQUIPMENT

CORRECTION OF PRIOR DOCUMENT

By virtue of the authority vested in me by R. S. 4405 and 4491, as amended (46 U. S. C. 375, 489), and section 101 of Reorganization Plan No. 3 of 1946 (11 F. R. 7875), the following corrections shall be made in Coast Guard document CGFR 47-38, Federal Register Document 47-7118, filed July 30, 1947, and published in the Federal Register dated July 31, 1947, 12 F. R. 5185 et seq.:

1. Under the heading "Lifeboats," 12 F. R. 5211, the Approval No. 160.-035/115/0 should be canceled and the following substituted in its stead:

Approval No. 160.035/115/0, 26.0' x 7.67' x 3.42', wood, oar-propelled life-

boat, 40-person capacity, identified by Dwg. Job No. 2160, dated 19 January 1938, manufactured by Inter-Island Steam Navigation Company, Ltd., Honolulu, T. H.

2. Under the heading "Safety Valves," 12 F. R. 5216, 5217, in Approval No. 162.001/40/0, the size 1" should be deleted, and in Approval No. 162.001/52/0, the size 1" should be deleted, because the Marine Engineering Regulations in 46 CFR, Parts 50 to 57, inclusive (Subchapter F), prescribe the diameter limitation of 1½" minimum for safety valves for power boilers.

Dated: March 18, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-2597; Filed, Mar. 23, 1948; 8:51 a. m.; 13 F. R. 1568, March 24, 1948]

TERMINATION OF APPROVAL OF EQUIPMENT

TERMINATION OF APPROVAL OF SECONDARY BOILER FEEDWATER LEVEL INDICATORS

The following approvals are terminated because the items of equipment are no longer being manufactured:

Termination of Approval No. 162.-025/1/0, Reliance Eye-Hye secondary boiler water gauge, remote boiler water level indicator, "U" tube differential pressure gauge connected to primary water column gauge, model E-16, rating 1,500 p. s. i., Dwg. No. C-4522-6, manufactured by The Reliance Gauge Column Co., 5902 Carnegie Avenue, Cleveland, Ohio. Approval No. 162.025/1/0 was published in the Federal Register dated 31 July 1947, 12 F. R. 5234, as corrected 8 November 1947, 12 F. R. 7340.

Termination of Approval No. 162.-025/27/0, Reliance Eye-Hye secondary boiler water gauge, remote boiler water level indicator, "U" tube differential pressure gauge connected to primary water column gauge, model No. E-14, rating 1,500 p. s. i., Dwg. No. B-5279-1, manufactured by The Reliance Gauge Column Co. 5902 Carnegie Avenue, Cleveland, Ohio. Approval No. 162.025/27/0 was published in the Federal Register dated 8 November 1947, 12 F. R. 7340.

NOTE.—When Approval No. 162.025/1/0 was corrected by the approvals published in the Federal Register dated 8 November 1947, the models E-10, E-11, E-12, and E-13 were superseded by the models listed in the correction published 8 November 1947, 12 F. R. 7340. The termination of approvals covering models E-14 and E-16 removes from the active approval lists all the models originally published in the Federal Register 31 July 1947, 12 F. R. 5234 under Approval No. 162.025/1/0.

CONDITIONS OF TERMINATION OF APPROVAL

The termination of approval of equipment made by this document shall be made effective upon the thirty-first day after the date of publication of this document in the Federal Register. Notwithstanding this termination of approval on any item of equipment, such equipment manufactured before the effective date of termination of approval may be used so long as it is in good and serviceable condition.

Dated: March 22, 1948.

J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-2635; Filed, Mar. 24, 1948; 8:46 a. m.; 13 F. R. 1588, March 25, 1948]

AFFIDAVITS

The following affidavits were accepted during the period February 15, 1948 to April 15, 1948:

The Kraissl Co., Inc., Terhune and Williams Avenue, Hackensack, N. J. Fittings.

Charles Ferran & Co., Inc., 1110 Magazine Street, New Orleans 13, La. Fittings.

FUSIBLE PLUGS

The Marine Engineering Regulations and Material Specifications require that manufacturers submit samples from each heat of fusible plugs to the Commandant 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 January 15, 1948 to April 15, 1948.

The Lunkenheimer Co., P. O. Box 360, Annex Station, Cincinnati 14, Ohio. Heat Nos. 304 to 310, inclusive.

CERTIFICATION OF ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from March 25, 1948 to April 25, 1948, inclusive, for use on board vessels in accordance with the provisions of part 147 of the Regulations Governing "Explosives or Other Dangerous Articles on Board Vessels":

Pall Mall Mfg. Co., 20 Vesey Street, New York 7, N. Y. dated 8 April 1948, Certification No. 247, "Pall Mall Lightning Metal Polish."

Virginia Smelting Co., West Norfolk, Va. dated April 23, 1948, Certification No. 248, "Lethalaire V-20 Formula."

ELECTRICAL APPLIANCES

The following list supplements that published by the United States Coast Guard under date of May 15, 1943, entitled "Miscellaneous Electrical Equipment Satisfactory for Use on Merchant Vessels," as well as subsequently published list, and is for the use of Coast Guard personnel in their work of inspecting merchant vessels. Other electrical items not contained in this pamphlet and subsequent listings may also be satisfactory for marine use but should not be so considered until the item is examined and listed by Coast Guard Headquarters. Before listings of electrical appliances are made, it is necessary for the manufacturer to submit to The Commandant (MMT), United States Coast Guard, Washington 25, D. C., duplicate copies of a detail assembly drawing, including a material list with finishes of each corrosive part of each item.

Manufacturer and description of equipment	Location apparatus may be used				Date of action
	Passenger and crew quarters and public spaces	Machinery cargo and work spaces	Open decks	Pump rooms of tank vessels	
Carpenter Products, Los Angeles, Calif.:					
Cable hanger assembly, drawing No. 1001-2, Alt. 2	x	x			4/14/48
Murlin Mfg. Co., Philadelphia, Pa.:					
Ceiling light trough, recessed, nonwatertight, A. T. S. No. 17, fixture No. 1265, Alt. 0	x				4/23/48
Edgelite sign, nonwatertight, types A-1, A-2, B-1, B-2, C-1, C-2, D-1, and D-2, A. T. S. No. 12, fixture No. 1268, Alt. 0	x				4/23/48
Standard Switchboard Co., Brooklyn, N. Y.:					
Power panel, direct current; 2/2 W., 125 volt and 2/2 W., 250 volt, type 2-KSS; 3/2 W., 250/125 volt, type 3-KSS; drawing No. CG-136, Alt. 1		x			4/ 6/48
Power panel, alternating current; 3/3 W., 220 volt, types 4-KSS and 4-KSD; drawing No. CG-138, Alt. 1		x			4/ 6/48
Power panel, direct current; 2/2 W., 125 volt and 2/2 W., 250 volt, type 2-KSD; 3/2 W., 250/125 volt, type 3-KSD; drawing No. CG-139, Alt. 1		x			4/ 6/48
Power panel, alternating current; 3/3 W., 460 volt, types 5-KSS and 5-KSD; drawing No. CG-140, Alt. 1		x			4/ 6/48

Merchant Marine Personnel Statistics

MERCHANT MARINE LICENSES ISSUED DURING MARCH 1948

DECK OFFICERS

REGION	Master										Chief mate										Second mate									
	Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	48	74	1	10	----	2	8	45	1	8	22	9	1	2	----	----	----	5	----	----	42	7	----	----	----	----	----	----	----	----
Gulf coast	7	29	----	3	----	----	1	4	5	2	11	1	----	1	----	----	----	----	1	1	14	5	----	----	----	----	----	----	----	----
Great Lakes and rivers	1	1	----	3	24	135	----	----	5	11	2	----	1	----	1	----	----	----	6	5	----	1	----	1	----	----	----	----	----	----
Pacific coast	21	39	----	1	----	4	3	19	----	1	17	5	----	----	----	----	1	1	1	----	22	9	----	----	----	----	----	----	----	----
Total	77	143	1	17	24	141	12	68	11	22	52	15	2	3	1	----	1	6	8	6	78	22	----	1	----	----	----	----	----	----

REGION	Third mate										Pilots						Master mate				Total		
	Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Great Lakes		B. S. & L.		Rivers		Uninspected vessels, high seas				Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	13	8	----	----	----	----	----	----	----	----	2	5	39	126	3	9	1	1	1	1	182	312	494
Gulf coast	10	2	----	----	----	----	----	----	----	----	----	2	11	18	8	6	----	----	----	----	68	74	142
Great Lakes and rivers	----	2	----	----	----	----	----	----	----	----	59	230	1	2	13	20	----	----	----	----	113	411	524
Pacific coast	2	6	----	----	----	----	----	----	----	----	7	7	6	12	1	3	----	----	----	----	81	107	188
Total	25	18	----	----	----	----	----	----	----	----	68	244	57	158	25	38	1	1	1	1	444	904	1,348

ENGINEER OFFICERS

REGION	Chief engineer, steam				First assistant engineer, steam				Second assistant engineer, steam				Third assistant engineer, steam				Chief engineer, motor			
	Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Unlimited		Limited	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	30	83	5	60	14	16	1	7	29	30	----	1	9	26	----	----	2	23	5	39
Gulf coast	10	34	4	10	4	5	----	----	9	3	----	----	3	3	----	----	1	6	3	3
Great Lakes and rivers	7	24	19	154	11	2	19	44	13	8	5	53	23	2	2	12	----	6	1	5
Pacific coast	11	55	----	8	6	4	----	2	8	17	----	----	7	10	----	----	1	13	4	22
Total	58	196	28	232	35	27	20	53	59	58	5	54	42	41	2	12	4	48	13	69

REGION	First assistant engineer, motor				Second assistant engineer, motor				Third assistant engineer, motor				Uninspected vessels				Total		
	Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Chief engineer		Assistant engineer		Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	2	2	1	4	3	1	----	----	3	25	1	----	1	----	----	----	106	317	423
Gulf coast	----	----	----	----	----	1	----	----	1	1	----	----	----	----	----	----	35	66	101
Great Lakes and rivers	----	1	2	2	----	----	1	----	1	3	----	----	----	----	----	----	104	316	420
Pacific coast	2	1	1	----	----	3	----	----	2	3	----	----	5	----	----	----	47	138	185
Total	4	4	4	6	3	5	1	----	7	32	1	----	6	----	----	----	292	837	1,129

ORIGINAL SEAMEN'S DOCUMENTS ISSUED MONTH OF MARCH 1948

REGION	(1) Staff officer	(2) Continuous discharge book	(3) U. S. Merchant mariner's documents	(4) AB any waters unlimited	(5) AB any waters 12 months	(6) AB Great Lakes 18 months	(7) AB tugs and towboats any waters	(8) AB * bays and sounds	(9) AB seagoing barges	(10) Lifeboatman	(11) Q. M. E. D.	(12) Radio operators	(13) Certificate of service	(14) Tankerman
Atlantic coast	112	2	1,091	73	207	4	0	0	0	437	264	20	886	8
Gulf coast	10	15	388	31	49	6	0	0	0	67	137	4	330	27
Pacific coast	31	0	720	44	80	2	0	0	0	632	179	11	467	10
Great Lakes and rivers	1	1	1,118	28	85	38	0	0	0	114	146	0	1,027	7
Total	154	18	3,317	176	430	50	0	0	0	1,250	726	35	2,710	52

* 12 months, vessels 500 gross tons or under not carrying passengers.

NOTE.—Columns 4 through 14 indicate endorsements made on U. S. merchant mariner's documents.

WAIVERS OF MANNING REQUIREMENTS FROM MARCH 1 TO MARCH 31 1948

Authority for These Waivers Contained in Navigation and Vessel Inspection Circular No. 8–47, Dated August 21, 1947

REGION	Number of vessels	Deck officers substituted for higher ratings	Engineer officers substituted for higher ratings	Able seamen substituted for deck officers	Ordinary seamen substituted for able seamen	Qualified members of engine department substituted for engineer officers	Wipers or coal passers substituted for qualified members of engine department	Wipers, coal passers or cadets substituted for engineer officers	Ordinary seamen or cadets substituted for deck officers	Total
Atlantic coast	231	3	7	----	332	2	93	----	----	437
Gulf coast	80	1	6	----	106	----	33	1	----	147
Pacific coast	56	----	2	----	65	1	33	----	----	101
Great Lakes	2	----	1	----	4	----	----	----	----	5
Total	369	4	16	----	507	3	159	1	----	690

CREW SHORTAGE REPORTS FROM MARCH 1 TO MARCH 31, 1948

These Reports Submitted in Accordance With Navigation and Vessel Inspection Circular No. 8–47, Dated August 21, 1947

REGION	Number of vessels	Ratings in which shortages occurred												Total
		Chief mate	Second mate	Third mate	Radio	Able seamen	Ordinary seamen	Chief engineer	First engineer	Second engineer	Third engineer	Qualified member engine department	Wiper or coal passer	
Atlantic coast	14	----	----	----	1	6	11	1	1	----	----	7	----	27
Gulf coast	5	----	----	----	----	1	2	----	----	----	1	2	2	8
Pacific coast	2	----	1	----	----	----	----	----	----	----	----	1	----	2
Great Lakes	11	----	----	2	----	4	----	----	1	4	4	2	----	17
Total	32	----	1	2	1	11	13	1	2	4	5	12	2	54

U. S. GOVERNMENT PRINTING OFFICE: 1948