

PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL



UNITED STATES COAST GUARD

Vol. 21, No. 10 • October 1964

CG-129



PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

Published monthly at Coast Guard Headquarters, Washington, D.C., 20226, 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 November 20, 1962.

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PUBLIC HEALTH AWARD



FOR THE FOURTH consecutive year Moore-McCormack Lines has been awarded the Special Citation of the U.S. Public Health Service in recognition of superior sanitation maintained aboard the company's extensive fleet during 1963.

The Citation was presented to H. R. Glennon, Jr., executive vice president of Moore-McCormack by M. C. Hope, assistant chief, program planning, of the Public Health Service at ceremonies held recently aboard the *SS Mormocpride* at the Moore-McCormack terminal, foot of 23d Street, Brooklyn, N.Y.

Standing (left to right): Mr. R. S. Mark, Chief, Interstate Carriers Branch, U.S. Public Health Service, Washington, D.C.; Mr. Bel Barisic, vice president, National Maritime Union; Mr. H. R. Glennon, Jr., executive vice president, Moore-McCormack Lines, Inc.; Mr. M. C. Hope, Assistant Chief, program planning, U.S. Public Health Service, Washington, D.C.; Mr. William T. Moore, president, Moore-McCormack Lines, Inc.

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FRONT COVER

"Out Bound" the Tank Ship *F. S. Bryant* nears the Golden Gate on her outward passage. Photo: Jon Brenneis Courtesy Standard Oil Co. of California.

BACK COVER

The first poster of a series to be published by the American Waterways Operators, Inc.

DIST. (SDL No. 79)

A: a aa bc(2); remainder (1)
 B: n(35); c(16); eq(5); f(4); h(3); g(2); remainder (1)
 C: a b (less Quonset Pt.) c d e f g i m o u (1)
 D: i(5); a b c d e f g h k l q r v w (1)
 E: o (New London only) (1)
 F: p(13)
 List 141M
 List 111

OCTOBER 1964



REVISED RULES OF THE ROAD RATIFIED: EFFECTIVE DATE, SEPTEMBER 1, 1965

The Secretary General of the Inter-Governmental Maritime Consultative Organization has fixed September 1, 1965 as the date the International Regulations for Preventing Collisions at Sea, 1960 (commonly called the "1960 International Rules of the Road") become effective. The Secretary General's action was taken in light of substantial unanimity having been reached in acceptance of the revised rules by member governments.

As a means of early acquainting the merchant marine with the pending rules, the "Proceedings" here presents them in their entirety. A series of explanatory articles comparing the 1960 rules with the to-be-superseded 1948 rules will be inaugurated next issue.

A number of important revisions have been made. The most significant revision concerns conduct in restricted visibility. A new rule 16(c) was adopted to provide for safe navigation by a vessel which detects another vessel outside of visual or audible range. Though not mentioning radar specifically, this rule—when considered together with the preliminary paragraphs to part C and the annex entitled "Recommendations on the Use of Radar Information as an Aid to Avoiding Collisions at Sea"—resolves several important questions which presently exist concerning a vessel navigating with the aid of radar.

Other changes of interest are: (a) Vessels are defined by their length rather than by tonnage; (b) the use of a white light synchronized with the prescribed whistle signals is permitted; (c) requirements for special lights for ships unable to get out of the way of approaching vessels because of the nature of their work were extended to ships replenishing at sea and ships engaged in the launching or recovery of aircraft; (d) a new provision was added concerning lights and shapes for minesweeping vessels; (e) rule 9, lights for fishing vessels, was almost completely rewritten; (f) rule 17, the sailing rule, was modernized; (g) rule 22 was strengthened to require that a vessel which is directed by these rules to keep out of the way of another vessel shall, so far as possible, take positive early action to comply with this obligation; (h) a new rule was added requiring that in a narrow channel a power-driven vessel of less than 65 feet in length shall not hamper the safe passage of a vessel which can navigate only inside such channel; (i) a requirement that a tug and tow carry a prescribed shape in daylight was adopted; (j) specific authorization was provided for the permissive use of navigation lights in daylight in restricted visibility; (k) a definition of "engaged in fishing" was added to include fishing with nets, lines or trawls but not fishing with trolling lines; and (l) the permissive use of colored masthead identity lights by sailing vessels was authorized.

REGULATIONS FOR PREVENTING COLLISIONS AT SEA

PART A.—PRELIMINARY AND DEFINITIONS

RULE 1

(a) These rules shall be followed by all vessels and seaplanes upon the high seas and in all waters connected

therewith navigable by seagoing vessels, except as provided in rule 30. Where, as a result of their special construction, it is not possible for seaplanes to comply fully with the provisions of rules specifying the carrying of lights and shapes, these provisions shall be followed as closely as circumstances permit.

(b) The rules concerning lights shall be complied with in all weathers from sunset to sunrise, and during such times no other lights shall be exhibited, except such lights as cannot be mistaken for the prescribed lights or do not impair their visibility or distinctive character, or interfere with the keeping of a proper lookout. The lights prescribed by these rules may also be exhibited from sunrise to sunset in restricted visibility and in all other circumstances when it is deemed necessary.

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

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

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

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

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

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

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

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

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

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

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

(xi) the term "short blast" means a blast of about 1 second's duration;

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

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

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

feet higher than the other and in such a position that the forward light shall always be shown lower than the after one. The horizontal distance between the two white lights shall be at least three times the vertical distance. The lower of these two white lights or, if only one is carried, then that light, shall be placed at a height above the hull of not less than 20 feet, and, if the breadth of the vessel exceeds 20 feet, then at a height above the hull not less than such breadth, so however that the light need not be placed at a greater height above the hull than 40 feet. In all circumstances the light or lights, as the case may be, shall be so placed as to be clear of and above all other lights and obstructing superstructures.

(iv) On the starboard side a green light so constructed as to show an unbroken light over an arc of the horizon of $112\frac{1}{2}^{\circ}$ (10 points of the compass), so fixed as to show the light from right ahead to $22\frac{1}{2}^{\circ}$ (2 points) abaft the beam on the starboard side, and of such a character as to be visible at a distance of at least 2 miles.

(v) On the portside a red light so constructed as to show an unbroken light over an arc of the horizon of $112\frac{1}{2}^{\circ}$ (10 points of the compass), so fixed as to show the light from right ahead to $22\frac{1}{2}^{\circ}$ (2 points) abaft the beam on the portside, and of such a character as to be visible at a distance of at least 2 miles.

(vi) The said green and red sidelights shall be fitted with inboard screens projecting at least 3 feet forward from the light, so as to prevent these lights from being seen across the bows.

(b) A seaplane underway on the water shall carry:

(i) In the forepart amidships where it can best be seen a white light, so constructed as to show an unbroken light over an arc of the horizon of 220° of the compass, so fixed as to show the light 110° on each side of the seaplane, namely, from right ahead to 20° abaft the beam on either side, and of such a character as to be visible at a distance of at least 3 miles.

(ii) On the right or starboard wing tip a green light, so constructed as to show an unbroken light over an arc of the horizon of 110° of the compass, so fixed as to show the light from right ahead to 20° abaft the beam on the starboard side, and of such a character as to be visible at a distance of at least 2 miles.

(iii) On the left or port wing tip a red light, so constructed as to show an unbroken light over an arc of the horizon of 110° of the compass, so fixed as to show the light from right ahead to 20° abaft the beam on the portside, and of such a character as to be visible at a distance of at least 2 miles.

RULE 3

(a) A power-driven vessel when towing or pushing another vessel or seaplane shall, in addition to her sidelights, carry two white lights in a vertical line one over the other, not less than 6 feet apart, and when towing and the length of the tow, measuring from the stern of the towing vessel to the stern of the last vessel towed, exceeds 600 feet, shall carry three white lights in a vertical line one over the other, so that the upper and lower lights shall be the same distance from, and not less than 6 feet above or below, the middle light. Each of these lights shall be of the same construction and character and one of them shall be carried in the same position as the white light prescribed in rule 2(a)(i). None of these lights shall be carried at a height of less than 14 feet above the hull. In a vessel with a single mast, such lights may be carried on the mast.

(b) The towing vessel shall also show either the stern light prescribed in rule 10 or in lieu of that light a small white light abaft the funnel or aftermast for the tow to steer by, but such light shall not be visible forward of the beam.

PART B.—LIGHTS AND SHAPES

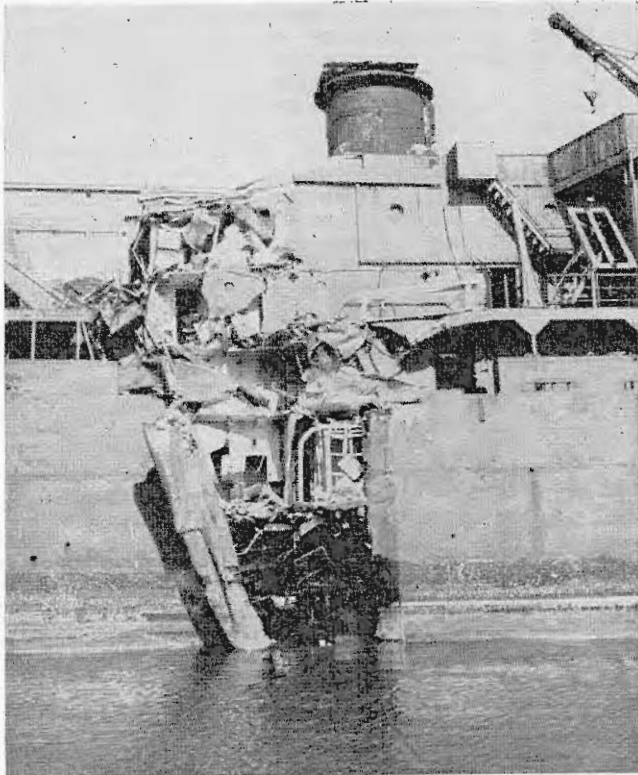
RULE 2

(a) A power-driven vessel when underway shall carry:

(i) On or in front of the foremast, or if a vessel without a foremast then in the forepart of the vessel, a white light so constructed as to show an unbroken light over an arc of the horizon of 225° (20 points of the compass), so fixed as to show the light $112\frac{1}{2}^{\circ}$ (10 points) on each side of the vessel, that is, from right ahead to $22\frac{1}{2}^{\circ}$ (2 points) abaft the beam on either side, and of such a character as to be visible at a distance of at least 5 miles.

(ii) Either forward or abaft the white light prescribed in subsection (i) a second white light similar in construction and character to that light. Vessels of less than 150 feet in length shall not be required to carry this second white light but may do so.

(iii) These two white lights shall be so placed in a line with and over the keel that one shall be at least 15



(c) Between sunrise and sunset a power-driven vessel engaged in towing, if the length of tow exceeds 600 feet, shall carry, where it can best be seen, a black diamond shape at least 2 feet in diameter.

(d) A seaplane on the water, when towing one or more seaplanes or vessels, shall carry the lights prescribed in rule 2(b) (i), (ii) and (iii); and, in addition, she shall carry a second white light of the same construction and character as the white light prescribed in rule 2(b) (i), and in a vertical line at least 6 feet above or below such light.

RULE 4

(a) A vessel which is not under command shall carry, where they can best be seen, and, if a power-driven vessel, in lieu of the lights prescribed in rule 2(a) (i) and (ii), two red lights in a vertical line one over the other not less than 6 feet apart, and of such a character as to be visible all round the horizon at a distance of at least 2 miles. By day, she shall carry in a vertical line one over the other not less than 6 feet apart, where they can best be seen, two black balls or shapes each not less than 2 feet in diameter.

(b) A seaplane on the water which is not under command may carry, where they can best be seen, and in lieu of the light prescribed in rule 2(b) (i), two red lights in a vertical line, one over the other, not less than 3 feet apart, and of such a character as to be visible all round the horizon at a distance of at least 2 miles, and may by day carry in a vertical line one over the other not less than 3 feet apart, where they can best be seen, two black balls or shapes, each not less than 2 feet in diameter.

(c) A vessel engaged in laying or in picking up a submarine cable or navigation mark, or a vessel engaged in surveying or underwater operations, or a vessel engaged in replenishment at sea, or in the launching or recovery of aircraft when from the nature of her work she is unable

to get out of the way of approaching vessels, shall carry, in lieu of the lights prescribed in rule 2(a) (i) and (ii), or rule 7(a) (i), three lights in a vertical line one over the other so that the upper and lower lights shall be the same distance from, and not less than 6 feet above or below, the middle light. The highest and lowest of these lights shall be of such a character as to be visible all round the horizon at a distance of at least 2 miles. By day, she shall carry in a vertical line one over the other not less than 6 feet apart, where they can best be seen, three shapes each not less than 2 feet in diameter, of which the highest and lowest shall be globular in shape and red in color, and the middle one diamond in shape and white.

(d) (i) A vessel engaged in minesweeping operations shall carry at the foretruck a green light, and at the end or ends of the foreyard on the side or sides on which danger exists, another such light or lights. These lights shall be carried in addition to the light prescribed in rule 2(a) (i) or rule 7(a) (i), as appropriate, and shall be of such a character as to be visible all round the horizon at a distance of at least 2 miles. By day she shall carry black balls, not less than 2 feet in diameter, in the same position as the green lights.

(ii) The showing of these lights or balls indicates that it is dangerous for other vessels to approach closer than 3,000 feet astern of the minesweeper or 1,500 feet on the side or sides on which danger exists.

(e) The vessels and seaplanes referred to in this rule, when not making way through the water, shall show neither the colored sidelights nor the stern light, but when making way they shall show them.

(f) The lights and shapes prescribed in this rule are to be taken by other vessels and seaplanes as signals that the vessel or seaplane showing them is not under command and cannot therefore get out of the way.

(g) These signals are not signals of vessels in distress and requiring assistance. Such signals are contained in rule 31.

RULE 5

(a) A sailing vessel underway and any vessel or seaplane being towed shall carry the same lights as are prescribed in rule 2 for a power-driven vessel or a seaplane underway, respectively, with the exception of the white lights prescribed therein, which they shall never carry. They shall also carry stern lights as prescribed in rule 10, provided that vessels towed, except the last vessel of a tow, may carry, in lieu of such stern light, a small white light as prescribed in rule 3(b).

(b) In addition to the lights prescribed in section (a), a sailing vessel may carry on the top of the foremast two lights in a vertical line one over the other, sufficiently separated so as to be clearly distinguished. The upper light shall be red and the lower light shall be green. Both lights shall be constructed and fixed as prescribed in rule 2(a) (i) and shall be visible at a distance of at least 2 miles.

(c) A vessel being pushed ahead shall carry, at the forward end, on the starboard side a green light and on the portside a red light, which shall have the same characteristics as the lights prescribed in rule 2(a) (iv) and (v) and shall be screened as provided in rule 2(a) (vi), provided that any number of vessels pushed ahead in a group shall be lighted as one vessel.

(d) Between sunrise and sunset a vessel being towed, if the length of the tow exceeds 600 feet, shall carry where it can best be seen a black diamond shape at least 2 feet in diameter.

RULE 6

(a) When it is not possible on account of bad weather or other sufficient cause to fix the green and red sidelights,

these lights shall be kept at hand lighted and ready for immediate use, and shall, on the approach of or to other vessels, be exhibited on their respective sides in sufficient time to prevent collision, in such manner as to make them most visible, and so that the green light shall not be seen on the portside nor the red light on the starboard side, nor, if practicable, more than $22\frac{1}{2}^{\circ}$ (2 points) abaft the beam on their respective sides.

(b) To make the use of these portable lights more certain and easy, the lanterns containing them shall each be painted outside with the color of the lights they respectively contain, and shall be provided with proper screens.

RULE 7

Power-driven vessels of less than 65 feet in length, vessels under oars or sails of less than 40 feet in length, and rowing boats, when underway shall not be required to carry the lights prescribed in rules 2, 3, and 5, but if they do not carry them they shall be provided with the following lights—

(a) Power-driven vessels of less than 65 feet in length, except as provided in sections (b) and (c), shall carry:

(i) In the forepart of the vessel, where it can best be seen, and at a height above the gunwale of not less than 9 feet, a white light constructed and fixed as prescribed in rule 2(a) (i) and of such a character as to be visible at a distance of at least 3 miles.

(ii) Green and red sidelights constructed and fixed as prescribed in rule 2(a) (iv) and (v), and of such a character as to be visible at a distance of at least 1 mile, or a combined lantern showing a green light and a red light from right ahead to $22\frac{1}{2}^{\circ}$ (2 points) abaft the beam on their respective sides. Such lantern shall be carried not less than 3 feet below the white light.

(b) Power-driven vessels of less than 65 feet in length when towing or pushing another vessel shall carry:

(i) In addition to the sidelights or the combined lantern prescribed in section (a) (ii) two white lights in a vertical line, one over the other not less than 4 feet apart. Each of these lights shall be of the same construction and character as the white light prescribed in section (a) (i) and one of them shall be carried in the same position. In a vessel with a single mast such lights may be carried on the mast.

(ii) Either a stern light as prescribed in rule 10 or in lieu of that light a small white light abaft the funnel or aftermast for the tow to steer by, but such light shall not be visible forward of the beam.

(c) Power-driven vessels of less than 40 feet in length may carry the white light at a less height than 9 feet above the gunwale but it shall be carried not less than 3 feet above the sidelights or the combined lantern prescribed in section (a) (ii).

(d) Vessels of less than 40 feet in length, under oars or sails, except as provided in section (f), shall, if they do not carry the sidelights, carry, where it can best be seen, a lantern showing a green light on one side and a red light on the other, of such a character as to be visible at a distance of at least 1 mile, and so fixed that the green light shall not be seen on the portside, nor the red light on the starboard side. Where it is not possible to fix this light, it shall be kept ready for immediate use and shall be exhibited in sufficient time to prevent collision and so that the green light shall not be seen on the portside nor the red light on the starboard side.

(e) The vessels referred to in this rule when being towed shall carry the sidelights or the combined lantern prescribed in sections (a) or (d) of this rule, as appropriate, and a stern light as prescribed in rule 10, or, except the last vessel of the tow, a small white light as pre-

scribed in section (b) (ii). When being pushed ahead they shall carry at the forward end the sidelights or combined lantern prescribed in sections (a) or (d) of this rule, as appropriate, provided that any number of vessels referred to in this rule when pushed ahead in a group shall be lighted as one vessel under this rule unless the overall length of the group exceeds 65 feet when the provisions of rule 5(c) shall apply.

(f) Small rowing boats, whether under oars or sail, shall only be required to have ready at hand an electric torch or a lighted lantern, showing a white light, which shall be exhibited in sufficient time to prevent collision.

(g) The vessels and boats referred to in this rule shall not be required to carry the lights or shapes prescribed in rules 4(a) and 11(e) and the size of their day signals may be less than is prescribed in rules 4(c) and 11(c).

RULE 8

(a) A power-driven pilot-vessel when engaged on pilotage duty and underway:

(i) Shall carry a white light at the masthead at a height of not less than 20 feet above the hull, visible all round the horizon at a distance of at least 3 miles and at a distance of 8 feet below it a red light similar in construction and character. If such a vessel is of less than 65 feet in length she may carry the white light at a height of not less than 9 feet above the gunwale and the red light at a distance of 4 feet below the white light.

(ii) Shall carry the sidelights or lanterns prescribed in rule 2(a) (iv) and (v) or rule 7 (a) (ii) or (d), as appropriate, and the stern light prescribed in rule 10.

(iii) Shall show one or more flareup lights at intervals not exceeding 10 minutes. An intermittent white light visible all round the horizon may be used in lieu of flareup lights.

(b) A sailing pilot vessel when engaged on pilotage duty and underway:

(i) Shall carry a white light at the masthead visible all round the horizon at a distance of at least 3 miles.

(ii) Shall be provided with the sidelights or lantern prescribed in rules 5(a) or 7(d), as appropriate, and shall, on the near approach of or to other vessels, have such lights ready for use, and shall show them at short intervals to indicate the direction in which she is heading, but the green light shall not be shown on the portside nor the red light on the starboard side. She shall also carry the stern light prescribed in rule 10.

(iii) Shall show one or more flareup lights at intervals not exceeding 10 minutes.

(c) A pilot vessel when engaged on pilotage duty and not underway shall carry the lights and show the flares prescribed in sections (a) (i) and (iii) or (b) (i) and (iii), as appropriate, and if at anchor shall also carry the anchor lights prescribed in rule 11.

(d) A pilot vessel when not engaged on pilotage duty shall show the lights or shapes for a similar vessel of her length.

RULE 9

(a) Fishing vessels when not engaged in fishing shall show the lights or shapes for similar vessels of their length.

(b) Vessels engaged in fishing, when underway or at anchor, shall show only the lights and shapes prescribed in this rule, which lights and shapes shall be visible at a distance of at least 2 miles.

(c) (i) Vessels when engaged in trawling, by which is meant the dragging of a dredge net or other apparatus through the water, shall carry two lights in a vertical line, one over the other, not less than 4 feet nor more than 12 feet apart. The upper of these lights shall be green and

the lower light white and each shall be visible all round the horizon. The lower of these two lights shall be carried at a height above the sidelights not less than twice the distance between the two vertical lights.

(ii) Such vessels may in addition carry a white light similar in construction to the white light prescribed in rule 2(a) (i) but such light shall be carried lower than and abaft the all-round green and white lights.

(d) Vessels when engaged in fishing, except vessels engaged in trawling, shall carry the lights prescribed in section (c) (i) except that the upper of the two vertical lights shall be red. Such vessels if of less than 40 feet in length may carry the red light at a height of not less than 9 feet above the gunwale and the white light not less than 3 feet below the red light.

(e) Vessels referred to in sections (c) and (d), when making way through the water, shall carry the sidelights or lanterns prescribed in rule 2(a) (iv) and (v) or rule 7(a) (ii) or (d), as appropriate, and the stern light prescribed in rule 10. When not making way through the water they shall show neither the sidelights nor the stern light.

(f) Vessels referred to in section (d) with outlying gear extending more than 500 feet horizontally into the seaway shall carry an additional all-round white light at a horizontal distance of not less than 6 feet nor more than 20 feet away from the vertical lights in the direction of the outlying gear. This additional white light shall be placed at a height not exceeding that of the white light prescribed in section (c) (i) and not lower than the sidelights.

(g) In addition to the lights which they are required by this rule to carry, vessels engaged in fishing may, if necessary in order to attract the attention of an approaching vessel, use a flareup light, or may direct the beam of their searchlight in the direction of a danger threatening the approaching vessel, in such a way as not to embarrass other vessels. They may also use working lights but fishermen shall take into account that specially bright or insufficiently screened working lights may impair the visibility and distinctive character of the lights prescribed in this rule.

(h) By day, vessels when engaged in fishing shall indicate their occupation by displaying where it can best be seen a black shape consisting of two cones each not less than 2 feet in diameter with their points together one above the other. Such vessels if of less than 65 feet in length may substitute a basket for such black shape. If their outlying gear extends more than 500 feet horizontally into the seaway vessels engaged in fishing shall display in addition one black conical shape, point upwards, in the direction of the outlying gear.

NOTE: Vessels fishing with trolling lines are not "engaged in fishing" as defined in rule 1(c) (xiv).

RULE 10

(a) Except where otherwise provided in these rules, a vessel when underway shall carry at her stern a white light, so constructed that it shall show an unbroken light over an arc of the horizon of 135 degrees (12 points of the compass), so fixed as to show the light $67\frac{1}{2}^\circ$ (6 points) from right aft on each side of the vessel, and of such a character as to be visible at a distance of at least 2 miles.

(b) In a small vessel, if it is not possible on account of bad weather or other sufficient cause for this light to be fixed, an electric torch or a lighted lantern showing a white light shall be kept at hand ready for use and shall, on the approach of an overtaking vessel, be shown in sufficient time to prevent collision.

(c) A seaplane on the water when underway shall carry on her tail a white light, so constructed as to show an

unbroken light over an arc of the horizon of 140° of the compass, so fixed as to show the light 70° from right aft on each side of the seaplane, and of such a character as to be visible at a distance of at least 2 miles.

RULE 11

(a) A vessel of less than 150 feet in length, when at anchor, shall carry in the forepart of the vessel, where it can best be seen, a white light visible all round the horizon at a distance of at least 2 miles. Such a vessel may also carry a second white light in the position prescribed in section (b) of this rule but shall not be required to do so. The second white light, if carried, shall be visible at a distance of at least 2 miles and so placed as to be as far as possible visible all round the horizon.

(b) A vessel of 150 feet or more in length, when at anchor, shall carry near the stem of the vessel, at a height of not less than 20 feet above the hull, one such light, and at or near the stern of the vessel and at such a height that it shall be not less than 15 feet lower than the forward light, another such light. Both these lights shall be visible at a distance of at least 3 miles and so placed as to be as far as possible visible all round the horizon.

(c) Between sunrise and sunset every vessel when at anchor shall carry in the forepart of the vessel, where it can best be seen, one black ball not less than 2 feet in diameter.

(d) A vessel engaged in laying or in picking up a submarine cable or navigation mark, or a vessel engaged in surveying or underwater operations, when at anchor, shall carry the lights or shapes prescribed in rule 4(c) in addition to those prescribed in the appropriate preceding sections of this rule.

(e) A vessel aground shall carry the light or lights prescribed in sections (a) or (b) and the two red lights prescribed in rule 4(a). By day she shall carry, where they can best be seen, three black balls, each not less than 2 feet in diameter, placed in a vertical line one over the other, not less than 6 feet apart.

(f) A seaplane on the water under 150 feet in length, when at anchor, shall carry, where it can best be seen, a white light, visible all round the horizon at a distance of at least 2 miles.

(g) A seaplane on the water 150 feet or upwards in length, when at anchor, shall carry, where they can best be seen, a white light forward and a white light aft, both lights visible all round the horizon at a distance of at least 3 miles; and, in addition, if the seaplane is more than 150 feet in span, a white light on each side to indicate the maximum span, and visible, so far as practicable, all round the horizon at a distance of 1 mile.

(h) A seaplane aground shall carry an anchor light or lights as prescribed in sections (f) and (g), and in addition may carry two red lights in a vertical line, at least 3 feet apart, so placed as to be visible all round the horizon.

RULE 12

Every vessel or seaplane on the water may, if necessary in order to attract attention, in addition to the lights which she is by these rules required to carry, show a flareup light or use a detonating or other efficient sound signal that cannot be mistaken for any signal authorized elsewhere under these rules.

RULE 13

(a) Nothing in these rules shall interfere with the operation of any special rules made by the government of any nation with respect to additional station and signal

lights for ships of war, for vessels sailing under convoy, for fishing vessels engaged in fishing as a fleet or for seaplanes on the water.

(b) Whenever the government concerned shall have determined that a naval or other military vessel or waterborne seaplane of special construction or purpose cannot comply fully with the provisions of any of these rules with respect to the number, position, range or arc of visibility of lights or shapes, without interfering with the military function of the vessel or seaplane, such vessel or seaplane shall comply with such other provisions in regard to the number, position, range or arc of visibility of lights or shapes as her government shall have determined to be the closest possible compliance with these rules in respect of that vessel or seaplane.

RULE 14

A vessel proceeding under sail, when also being propelled by machinery, shall carry in the daytime forward, where it can best be seen, one black conical shape, point downwards, not less than 2 feet in diameter at its base.

PART C.—SOUND SIGNALS AND CONDUCT IN RESTRICTED VISIBILITY

PRELIMINARY

1. *The possession of information obtained from radar does not relieve any vessel of the obligation of conforming strictly with the rules and, in particular, the obligations contained in rules 15 and 16.*

2. *The annex to the rules contains recommendations intended to assist in the use of radar as an aid to avoiding collision in restricted visibility.*

RULE 15

(a) A power-driven vessel of 40 feet or more in length shall be provided with an efficient whistle, sounded by steam or by some substitute for steam, so placed that the sound may not be intercepted by any obstruction, and with an efficient foghorn to be sounded by mechanical means, and also with an efficient bell. A sailing vessel of 40 feet or more in length shall be provided with a similar foghorn and bell.

(b) All signals prescribed in this rule for vessels underway shall be given—

- (i) by power-driven vessels on the whistle;
- (ii) by sailing vessels on the foghorn;
- (iii) by vessels towed on the whistle or foghorn.

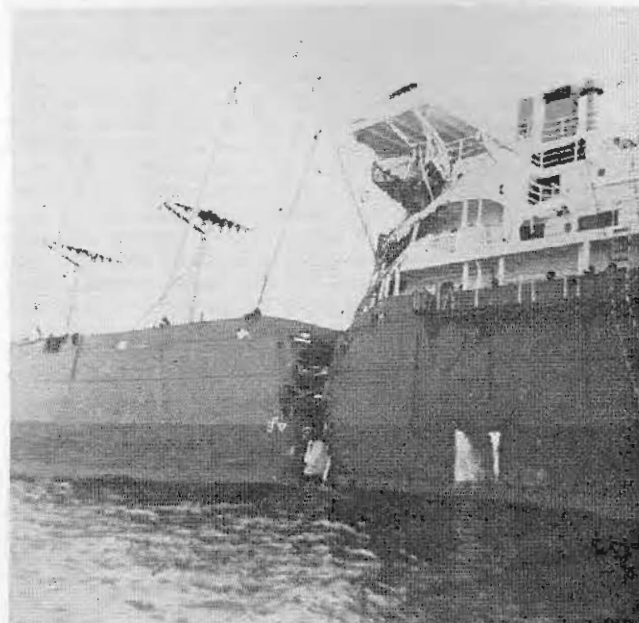
(c) In fog, mist, falling snow, heavy rainstorms, or any other condition similarly restricting visibility, whether by day or night, the signals prescribed in this rule shall be used as follows:

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

(ii) A power-driven vessel underway, but stopped and making no way through the water, shall sound at intervals of not more than 2 minutes two prolonged blasts, with an interval of about 1 second between them.

(iii) A sailing vessel underway shall sound, at intervals of not more than 1 minute, when on the starboard tack one blast, when on the port tack two blasts in succession, and when with the wind abaft the beam three blasts in succession.

(iv) A vessel when at anchor shall at intervals of not more than 1 minute ring the bell rapidly for about 5 seconds. In vessels of more than 350 feet in length the bell shall be sounded in the forepart of the vessel, and in addition there shall be sounded in the afterpart of the vessel,



at intervals of not more than 1 minute for about 5 seconds, a gong or other instrument, the tone and sounding of which cannot be confused with that of the bell. Every vessel at anchor may in addition, in accordance with rule 12, sound three blasts in succession, namely, one short, one prolonged, and one short blast, to give warning of her position and of the possibility of collision to an approaching vessel.

(v) A vessel when towing, a vessel engaged in laying or in picking up a submarine cable or navigation mark, and a vessel underway which is unable to get out of the way of an approaching vessel through being not under command or unable to maneuver as required by these rules shall, instead of the signals prescribed in subsections (i), (ii), and (iii) sound, at intervals of not more than 1 minute, three blasts in succession, namely, one prolonged blast followed by two short blasts.

(vi) A vessel towed, or, if more than one vessel is towed, only the last vessel of the tow, if manned, shall, at intervals of not more than 1 minute, sound four blasts in succession, namely, one prolonged blast followed by three short blasts. When practicable, this signal shall be made immediately after the signal made by the towing vessel.

(vii) A vessel aground shall give the bell signal and, if required, the gong signal, prescribed in subsection (iv) and shall, in addition, give three separate and distinct strokes of the bell immediately before and after such rapid ringing of the bell.

(viii) A vessel engaged in fishing when underway or at anchor shall at intervals of not more than 1 minute sound the signal prescribed in subsection (v). A vessel when fishing with trolling lines and underway shall sound the signals prescribed in subsections (i), (ii), or (iii) as may be appropriate.

(ix) A vessel of less than 40 feet in length, a rowing boat, or a seaplane on the water, shall not be obliged to give the abovementioned signals but if she does not, she shall make some other efficient sound signal at intervals of not more than 1 minute.

(x) A power-driven pilot vessel when engaged on pilotage duty may, in addition to the signals prescribed in subsections (i), (ii), and (iv), sound an identity signal consisting of 4 short blasts.

RULE 16

(a) Every vessel, or seaplane when taxiing on the water, shall, in fog, mist, falling snow, heavy rainstorms, or any other condition similarly restricting visibility, go at a moderate speed, having careful regard to the existing circumstances and conditions.

(b) A power-driven vessel hearing, apparently forward of her beam, the fog signal of a vessel the position of which is not ascertained, shall, so far as the circumstances of the case admit, stop her engines, and then navigate with caution until danger of collision is over.

(c) A power-driven vessel which detects the presence of another vessel forward of her beam before hearing her fog signal or sighting her visually may take early and substantial action to avoid a close quarters situation but, if this cannot be avoided, she shall, so far as the circumstances of the case admit, stop her engines in proper time to avoid collision and then navigate with caution until danger of collision is over.

PART D.—STEERING AND SAILING RULES

PRELIMINARY

1. *In obeying and construing these rules, any action taken should be positive, in ample time, and with due regard to the observance of good seamanship.*

2. *Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing of an approaching vessel. If the bearing does not appreciably change, such risk should be deemed to exist.*

3. *Mariners should bear in mind that seaplanes in the act of landing or taking off, or operating under adverse weather conditions, may be unable to change their intended action at the last moment.*

4. *Rules 17 to 24 apply only to vessels in sight of one another.*

RULE 17

(a) When two sailing vessels are approaching one another, so as to involve risk of collision, one of them shall keep out of the way of the other as follows:

(i) When each has the wind on a different side, the vessel which has the wind on the portside shall keep out of the way of the other.

(ii) When both have the wind on the same side, the vessel which is to windward shall keep out of the way of the vessel which is to leeward.

(b) For the purposes of this rule the windward side shall be deemed to be the side opposite to that on which the mainsail is carried or, in the case of a square-rigged vessel, the side opposite to that on which the largest fore-and-aft sail is carried.

RULE 18

(a) When two power-driven vessels are meeting end on, or nearly end on, so as to involve risk of collision, each shall alter her course to starboard, so that each may pass on the portside of the other. This rule only applies to cases where vessels are meeting end on, or nearly end on, in such a manner as to involve risk of collision, and does not apply to two vessels which must, if both keep on their respective courses, pass clear of each other. The only cases to which it does apply are when each of two vessels is end on, or nearly end on, to the other; in other words, to cases in which, by day, each vessel sees the masts of the other in a line, or nearly in a line, with her own; and by night, to cases in which each vessel is in such a position as to see both the sidelights of the other. It does not apply, by day, to cases in which a vessel sees another ahead

crossing her own course; or, by night, to cases where the red light of one vessel is opposed to the red light of the other or where the green light of one vessel is opposed to the green light of the other or where a red light without a green light or a green light without a red light is seen ahead, or where both green and red lights are seen anywhere but ahead.

(b) For the purposes of this rule and rules 19 to 29 inclusive, except rule 20(c) and rule 28, a seaplane on the water shall be deemed to be a vessel, and the expression "power-driven vessel" shall be construed accordingly.

RULE 19

When two power-driven vessels are crossing, so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way of the other.

RULE 20

(a) When a power-driven vessel and a sailing vessel are proceeding in such directions as to involve risk of collision, except as provided for in rules 24 and 26, the power-driven vessel shall keep out of the way of the sailing vessel.

(b) This rule shall not give to a sailing vessel the right to hamper, in a narrow channel, the safe passage of a power-driven vessel which can navigate only inside such channel.

(c) A seaplane on the water shall, in general, keep well clear of all vessels and avoid impeding their navigation. In circumstances, however, where risk of collision exists, she shall comply with these rules.

RULE 21

Where by any of these rules one of two vessels is to keep out of the way, the other shall keep her course and speed. When, from any cause, the latter vessel finds herself so close that collision cannot be avoided by the action of the giving-way vessel alone, she also shall take such action as will best aid to avert collision (see rules 27 and 29).

RULE 22

Every vessel which is directed by these rules to keep out of the way of another vessel shall, so far as possible, take positive early action to comply with this obligation, and shall, if the circumstances of the case admit, avoid crossing ahead of the other.

RULE 23

Every power-driven vessel which is directed by these rules to keep out of the way of another vessel shall, on approaching her, if necessary, slacken her speed or stop or reverse.

RULE 24

(a) Notwithstanding anything contained in these rules, every vessel overtaking any other shall keep out of the way of the overtaken vessel.

(b) Every vessel coming up with another vessel from any direction more than $22\frac{1}{2}^{\circ}$ (2 points) abaft her beam, i.e., 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 sidelights, 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 these rules, or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

(c) If the overtaking vessel cannot determine with certainty whether she is forward of or abaft this direction from the other vessel, she shall assume that she is an overtaking vessel and keep out of the way.

RULE 25

(a) In a narrow channel every power-driven vessel when proceeding along the course of the channel shall, when it is safe and practicable, keep to that side of the fairway or midchannel which lies on the starboard side of such vessel.

(b) Whenever a power-driven vessel is nearing a bend in a channel where a vessel approaching from the other direction cannot be seen, such power-driven vessel, when she shall have arrived within one-half mile of the bend, shall give a signal by one prolonged blast on her whistle which signal shall be answered by a similar blast given by any approaching power-driven vessel that may be within hearing around the bend. Regardless of whether an approaching vessel on the farther side of the bend is heard, such bend shall be rounded with alertness and caution.

(c) In a narrow channel a power-driven vessel of less than 65 feet in length shall not hamper the safe passage of a vessel which can navigate only inside such channel.

RULE 26

All vessels not engaged in fishing, except vessels to which the provisions of rule 4 apply, shall, when underway, keep out of the way of vessels engaged in fishing. This rule shall not give to any vessel engaged in fishing the right of obstructing a fairway used by vessels other than fishing vessels.

RULE 27

In obeying and construing these rules due regard shall be had to all dangers of navigation and collision, and to any special circumstances, including the limitations of the craft involved, which may render a departure from the above rules necessary in order to avoid immediate danger.

PART E.—SOUND SIGNALS FOR VESSELS IN SIGHT OF ONE ANOTHER

RULE 28

(a) When vessels are in sight of one another, a power-driven vessel underway, in taking any course authorized or required by these rules, shall indicate that course by the following signals on her whistle, namely:

One short blast to mean "I am altering my course to starboard."

Two short blasts to mean "I am altering my course to port."

Three short blasts to mean "my engines are going astern."

(b) Whenever a power-driven vessel which, under these rules, is to keep her course and speed, is in sight of another vessel and is in doubt whether sufficient action is being taken by the other vessel to avert collision, she may indicate such doubt by giving at least five short and rapid blasts on the whistle. The giving of such a signal shall not relieve a vessel of her obligations under rules 27 and 29 or any other rule, or of her duty to indicate any action taken under these rules by giving the appropriate sound signals laid down in this rule.

(c) Any whistle signal mentioned in this rule may be further indicated by a visual signal consisting of a white

light visible all round the horizon at a distance of at least 5 miles, and so devised that it will operate simultaneously and in conjunction with the whistle-sounding mechanism and remain lighted and visible during the same period as the sound signal.

(d) Nothing in these rules shall interfere with the operation of any special rules made by the government of any nation with respect to the use of additional whistle signals between ships of war or vessels sailing under convoy.

PART F.—MISCELLANEOUS

RULE 29

Nothing in these rules shall exonerate any vessel, or the owner, master, or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

RULE 30

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

RULE 31

DISTRESS SIGNALS

(a) When a vessel or seaplane on the water is in distress and requires assistance from other vessels or from the shore, the following shall be the signals to be used or displayed by her, either together or separately, namely:

(i) A gun or other explosive signal fired at intervals of about a minute.

(ii) A continuous sounding with any fog-signalling apparatus.

(iii) Rockets or shells, throwing red stars fired one at a time at short intervals.

(iv) A signal made by radiotelegraphy or by any other signalling method consisting of the group . . . — — . . . in the Morse Code.

(v) A signal sent by radiotelephony consisting of the spoken word "Mayday."

(vi) The International Code Signal of distress indicated by N.C.

(vii) A signal consisting of a square flag having above or below it a ball or anything resembling a ball.

(viii) Flames on the vessel (as from a burning tar barrel, oil barrel, etc.).

(ix) A rocket parachute flare or a hand flare showing a red light.

(x) A smoke signal giving off a volume of orange-colored smoke.

(xi) Slowly and repeatedly raising and lowering arms outstretched to each side.

NOTE.—Vessels in distress may use the radiotelegraph alarm signal or the radiotelephone alarm signal to secure attention to distress calls and messages. The radiotelegraph alarm signal, which is designed to actuate the radiotelegraph auto alarms of vessels so fitted, consists of a series of 12 dashes, sent in 1 minute, the duration of each dash being 4 seconds, and the duration of the interval between 2 consecutive dashes being 1 second. The radiotelephone alarm signal consists of two tones transmitted alternately over periods of from 30 seconds to 1 minute.

(b) The use of any of the foregoing signals, except for the purpose of indicating that a vessel or seaplane is in distress, and the use of any signals which may be confused with any of the above signals, is prohibited.

ANNEX TO THE RULES—RECOMMENDATIONS ON THE USE OF RADAR INFORMATION AS AN AID TO AVOIDING COLLISIONS AT SEA

(1) Assumptions made on scanty information may be dangerous and should be avoided.

(2) A vessel navigating with the aid of radar in restricted visibility must, in compliance with rule 16(a), go at a moderate speed. Information obtained from the use of radar is one of the circumstances to be taken into account when determining moderate speed. In this regard it must be recognized that small vessels, small icebergs, and similar floating objects may not be detected by radar. Radar indications of one or more vessels in the vicinity may mean that "moderate speed" should be slower than a mariner without radar might consider moderate in the circumstances.

(3) When navigating in restricted visibility the radar range and bearing alone do not constitute ascertainment of the position of the other vessel under rule 16(b) sufficiently to relieve a vessel of the duty to stop her engines and navigate with caution when a fog signal is heard forward of the beam.

(4) When action has been taken under rule 16(c) to avoid a close quarters situation, it is essential to make sure that such action is having the desired effect. Altera-

tions of course or speed or both are matters as to which the mariner must be guided by the circumstances of the case.

(5) Alteration of course alone may be the most effective action to avoid close quarters provided that:

(a) There is sufficient sea room.

(b) It is made in good time.

(c) It is substantial. A succession of small alterations of course should be avoided.

(d) It does not result in a close quarters situation with other vessels.

(6) The direction of an alteration of course is a matter in which the mariner must be guided by the circumstances of the case. An alteration to starboard, particularly when vessels are approaching apparently on opposite or nearly opposite courses, is generally preferable to an alteration to port.

(7) An alteration of speed, either alone or in conjunction with an alteration of course, should be substantial. A number of small alterations of speed should be avoided.

(8) If a close quarters situation is imminent, the most prudent action may be to take all way off the vessel.

A limited quantity of advance copies of the 1960 International Rules of the Road have been forwarded to all Officers in Charge Marine Inspection for distribution to the shipping industry. Additional copies may be obtained by writing to Commandant MVI-4, U.S. Coast Guard, 1300 E Street, NW., Washington, D.C., 20026.

These rules will be incorporated in a new edition of "Rules of the Road, International—Inland" (CG-169), which will be distributed on and after the effective date of 1 September 1965.—Ed.

DANGERS IN HANDLING OF CHEMICAL CARGOES

A recent cargo vessel casualty at a West Coast port once again points up the inherent dangers in handling of chemical cargoes.

The Coast Guard investigation disclosed that the bodies of two seamen serving aboard the vessel were discovered by ship's personnel in the 'tween-deck in the vicinity of the cargo tank after the bulk liquid cargo of 283 tons of methylene chloride was discharged. The methylene chloride had been carried in an independent tank located in No. 4 cargo hold. The carpenter and an ordinary seaman were found dead in the vicinity of the methylene chloride cargo tank.

The tank containing the liquid methylene chloride was equipped with a kathabar ventilation and dehumidifying system. The kathabar ducts on the tank are blanked off at intake and at the exhaust when carrying liquid cargo. The ship's carpenter was instructed at time of vessel mooring to remove the blanks from the kathabar ducts after the methylene chloride was discharged. It was ascertained that the carpenter and an ordinary seaman removed the intake blank and were removing the exhaust blank prior to completing the discharge of the methylene chloride from the tank.

The findings indicate that the opening of the kathabar intake at the tank permitted dehumidified air under pressure to enter the tank. Thus, when the exhaust blank was removed the pressure forced methylene chloride fumes upon the seamen working in that immediate area. Both were overcome and succumbed of suffocation. Neither man was wearing a self-contained breathing apparatus.

Coast Guard Navigation and Vessel Inspection Circular No. 4-63 gives the following information on methylene chloride: "Reid Vapor Pressure 13.9, Vapor Density 2.9, Toxic Rating 2 (slightly toxic)." Remarks: "Will cause severe eye damage." The Manufacturing Chemists' Association, Inc., Chemical Safety Data Sheet on methylene chloride also points out the health hazards of the chemical. This publication describes the chief hazard of methylene chloride as loss of consciousness (anesthesia) following inhalation of the vapor. The investigation revealed that, despite this, vessel personnel were of the opinion that methylene chloride was nontoxic and nonpoisonous.

The MCA data sheet recommends several safety measures, the main one being employee education and training in the dangers and proper han-

dling of this chemical. It also recommends the use of self-contained breathing apparatus, positive pressure hose masks, or airline masks if there is a possibility of exposure to the vapor. It further states that the odor of the vapor cannot be relied upon to give adequate warning of unsafe concentrations and that a calibrated indicator, if available, should be used.

It is deemed that, in the case under consideration, the cause of death was not due to the toxic nature of the methylene chloride vapor, but to the density of the vapor, which caused it to fill up the void space below the exhaust opening. The anesthetic effect of the methylene chloride vapors probably contributed to the inability of the two men to escape.

This case points up the need for more intense education of all persons engaged in the handling of this chemical where the possibility of escaping vapors is present. This is especially true when working in confined spaces where the high vapor density will result in filling up the space and displacing the oxygen needed to sustain life. The safety factor gained by having two men work in such a potentially dangerous situation is lost if both men work in close proximity to an area permeated by methylene chloride vapor and the concentration exceeds 500 parts per million.

A PILOT'S DILEMMA

BY JOHN F. CAMPBELL, MASTER MARINER

Rule 27: In obeying and construing these Rules due regard shall be had to all dangers of navigation and collision, including the limitations of the craft involved, and to any special circumstances, which may render a departure from the above Rules necessary in order to avoid immediate danger.

THERE ARE IN force today multifarious Rules and Regulations for preventing collisions between vessels at sea, and on the bays, sounds, rivers and lakes of the world. These Rules were in general written for the guidance of commanders, masters, mates, pilots and shiphandlers. It is, therefore, reasonable to expect that there exists a wide latitude in the background of the men that must look to the Rules for guidance. It is also within reason to assume that some will interpret the Rules differently than others; that some will perhaps read something into a Rule that does not exist, or interpret them at will to fit a given situation.

Rule 27 of the International Rules of the Road, and this Rule has been written into many local Rules, is universally known as the General Prudential Rule. This Rule, more than any other, has placed a heavy responsibility on those in charge of the navigation of all vessels, but especially upon those of the privileged vessels.

Notwithstanding interpretations of the General Prudential Rule by either Investigating Units or Admiralty Courts, practical shiphandlers tend to construe this Rule by reading it literally. However, after an incident, when all of the facts and circumstances leading up to and surrounding a marine accident case have been printed, and bound into volumes in the form of records and depositions, this Rule, as are all the others, is usually interpreted according to the strictest and nicest construction of its language. It would not be stretching a point to say—that admiralty not only looks upon the Navigation Rules as a guide to prevent collisions, but also as a means of avoiding even the risks of collision.

If the Navigation Rules were written to prevent even the risk of collision when, then, does Rule 27 apply? When is it not applicable? Where does the point of risk of collision begin? Where does it end? It is of the utmost importance that professionals keep in mind that admiralty looks upon the Navigation Rules as being *obligatory* upon vessels approaching each other from the time the necessity for precaution begins, and they

The following article on Rule 27 of the International Rules of the Road is presented for general interest. Captain Campbell's comments are his own, and do not necessarily represent the official views of the U.S. Coast Guard. In presenting different viewpoints and comments on the vital subject of Rules of the Road the "Proceedings" hopes that constructive discussion and concepts will result.—ED.

continue to be applicable as the vessels close—*up to the point* where there is a means and opportunity to avoid collision. They *do not apply* to a vessel required to keep her course after the approach is so close that a collision is inevitable, or, to vessels so remote from each other that measures of precaution are not manifest.

It is obvious, then, that mariners should be guided by Rule 27 only after the approach is so close that a collision is certain. To depart from the other Rules before this hypothetical point is reached, or, not be guided by it after this point, would place a heavy burden upon those who would disregard the action it requires.

Sometimes it is argued that Rule 27 was adhered to as an excuse for a departure from other Navigation Rules where an adherence to them would have prevented a collision, or, under the circumstances of the case, it would have been better seamanship not to comply. Arguments based on such erroneous premise are themselves in error because the Rule would not be applicable. Nor would it in any way affect the universal application of other Navigation Rules where it would be possible to apply them in order to avoid immediate danger.

Having gone thus far it is probably apparent to the reader that Rule 27 is indeed a pilot's dilemma. That it not only places a heavy burden upon those it is intended to guide, but it also has many legal ramifications.

Perhaps no two marine accident cases are entirely similar. Each would have to be evaluated and judged according to *all* the circumstances. However, the crux of the wording of Rule 27 lies within the terms *special circumstance, limitations of the craft involved and immediate danger*. The dilemma, then, is what is an individual's determination of this danger point? What value will admiralty place on this determination, and how heavily will the shiphandler's evaluation of the special circumstances weigh in the findings?

In spite of the fact that no two persons will act alike in a given set of circumstances, it is, however, not presumptuous on the part of admiralty when they base their findings on the premise that the reactions of "experts" should conform to some sort of a standard pattern. Also, it is not singular reasoning to expect that vessel prototypes, navigating in and under like circumstances, will respond in nearly the same manner. If such were not the cases, then, legal determinations in admiralty would be difficult, if not impossible, to render.

Supposing a privileged vessel departs from the Rules because she fears that the burdened vessel will not adhere to them? The preponderance of authority in admiralty cases has held that a privileged vessel would not be justified in departing from the Rules for this reason. A mariner cannot navigate safely by conjecture. For a privileged vessel to anticipate that another vessel will not give way, and so give way herself, could result in serious consequences.

There is an old adage that no one has the right of way through another vessel. Learned admiralty judges have expounded that—a vessel has no rights to stand into danger upon a right, though it may be a perfectly good right, obstinately, recklessly, without regard to the safety of others when injury to others could have been avoided by pursuing a different course. A quarter of a century of intimate knowledge in "affairs maritime," and many years of command responsibility, which includes a decade of piloting in confined waters, has pointed out that occasionally circumstances will arise when it might be foolhardy to follow a particular Navigation Rule. But whenever it does become necessary to depart from the Rules it must be borne in mind that the circumstances must be such that your actions can be distinctly *proved* and *established* as being necessary in order to avoid *immediate danger*.

Having gone this far, the reader will perhaps feel that Rule 27 is still a case of "damned if you do and damned if you do not." Although the slightest departure from the Navigation Rules may invariably be cause for a finding of contributory negligence, it is not expected that a mariner, even an "expert," should be required to display extraordinary skill, judgment and courage in *all* cases. And it might well be a good place here to digress for a definition of the term negligence and ordinary skill as they relate to Rule 27.

Negligence is correlated with duty. It ties in with this discussion, but has a significant relationship to a negative action—for those who, perhaps, feel that they might be exonerated for standing on a Rule and doing nothing. Although volumes can and have been written on the term negligence, it is not susceptible to a precise definition. It can, however, for our purpose be considered as a negative rather than a positive term. It can best be defined as implying the neglect of omitting doing something, or doing something which should not have been done at all.

For a libel in admiralty there has to be a negligent act. In almost all cases negligence is unintentional, but it is a means of establishing liability in order that the sufferer from the act may be entitled to a reparation for damages. It is, nonetheless, this writer's opinion, a term that should not be used by any Investigating Unit, from which there is no appeal, unless it is gross or manifest.

Ordinary care and skill is also a term not easily defined. If a mariner's judgment becomes an issue, then, every case must be tested by *all* the circumstances. It will have to suffice, for want of space, to say that admiralty expects the degree of skill and diligence which is generally to be found in persons who discharge their duties. This would imply, then, that persons entrusted with the responsibility of navigating vessels would be called upon to demonstrate a high degree of skill and care.

A close study should be given to the terms *special circumstance*, and the more recently added clause, *including the limitations of the craft involved*. Both of these clauses are admittedly open for unlimited interpretation. It has often been said, that no Navigation Rule was ever written that intended a vessel should stand into danger, and this is actually the case. Authoritative bodies have gone to such an extent to prevent collisions that they have promulgated Rules requiring vessels to either run ashore, or, to interpret Rule 27 liberally when navigating special craft.

An example of the first will be found in Article 21 [Section 5] *Rules of Navigation* issued by the Suez Canal Authority: 'Whenever a collision appears probable vessels must not hesitate to run aground, should this be necessary, to avoid it.' The second case, where the limitations of the craft are of import, is submarines. In U.S. Navy submarines, where collision can usually result in serious consequence, commanding officers are trained to take *early* avoiding actions, and to *liberally* interpret the General Prudential Rule to prevent

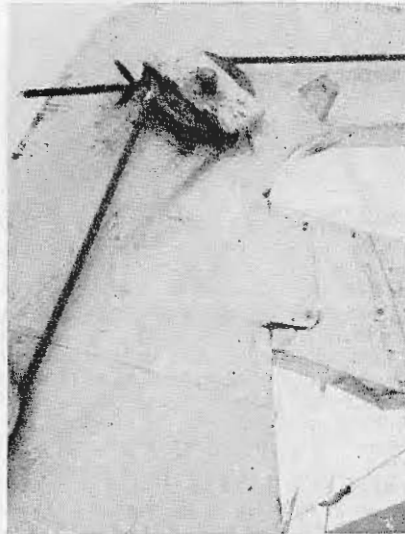
collision situations from even developing.

The above has only been a brief outline of some facets of the General Prudential Rule. However, it is only one of many Rules governing the actions of those whose responsibility it is to navigate vessels. Before one steps into those shoes and its accompanying responsibility, he should have a good working knowledge of all

the Rules which govern his actions—ignorance is no excuse. Admiralty seems to lean heavily on the centuries old Chinese doctrine of *Li Ki*: "When a man comes into any Precinct, he ought to ask what is forbidden there, that he may not offend. When he comes into a Kingdom, he must inquire into the Customs and Manners, for otherwise he will offend the People..."

LESSONS FROM CASUALTIES

WIRE LIFEBOAT FALLS



AREA OF boat fall particularly susceptible to deterioration.

Recently, on separate occasions, wire lifeboat falls on freighters failed causing serious damage to the lifeboats and davits. It was fortunate that there was no resultant injury or loss of life.

In both instances an examination of the falls, which were $\frac{3}{4}$ inch 6 x 19 fibre core plow steel wire rope, revealed considerable internal deterioration. The fibre core was dry and the internal wires were rusty. The exterior of the falls appeared to be lubricated and free of "fish hooks." Measurements of the wire falls to ascertain the location of the breaks indicated that they had occurred in the way of the sheaves on the davit arms.

There was sufficient information to indicate that the falls were periodically slushed down and greased in the usual manner using recommended

lubricant preservatives. During this maintenance procedure, it was established that failure to renew and end-for-end wire falls at frequent intervals materially contributed to these casualties. Frequent inspection and lubrication of lifeboat falls, particularly in areas inaccessible while in the rigged in and stowed position should be included in any preventive maintenance programs.

It can therefore be reliably concluded that failure to renew and end-for-end wire falls at frequent intervals materially contributed to these casualties. Frequent inspection and lubrication of lifeboat falls, particularly in areas inaccessible while in the rigged in and stowed position should be included in any preventive maintenance programs.

BOSUN'S CHAIR

Prior to noon, while a C-3 freighter was moored to a pier, an able (bodied) seaman who was engaged in slushing down a topping lift fell from a height of about 20 feet. He was transported to a hospital in an unconscious state where he subsequently died about 9 days later.

With the cargo booms cradled, it is customary to shackle a bosun's chair to one or more topping lift wires, and secure one end of the hoisting lanyard to the shackle. The other end is rove through a pad eye or shackle atop the kingpost and led to the deck where it is tended by a man on deck.

The man assigned to work aloft, rigged the chair personally. He had frequently gone aloft on previous occasions and earlier that day had slushed down another topping lift.

After the casualty, an examination of the equipment revealed that the screw pin shackles that had been used were tightly screwed into the shackle and about the topping lift wire. The lowering line was in good condition, was not severed and the whippings at both ends were found intact.



RECOMMENDED RIGGING of bosun chair for slushing topping lift.

It was concluded that the experienced seaman had reeved the lowering line through the riding shackle and secured it to the bosun's chair. The lashings worked loose and the chair with the seaman fell to the deck.



FAULTY METHOD of rigging bosun's chair suspected of contributing to fatality.

Had he secured the bosun's chair to the riding shackle by means of the shackle itself, and then made the lowering lanyard fast to the shackle, it is conceivable that this seaman would still be with us today.

TAKE TIME TO BE SURE IT'S SAFE

Very few people will attempt to walk across an ice-covered pond without first making sure that the ice is thick enough to support their weight. However, in our everyday activities, most of us will take a great many risks that could result in a painful injury without giving it a second thought.

A great many of these injuries could be avoided just by taking a little extra time to make sure that it is safe to go ahead.

One such instance happened recently aboard ship while the vessel was underway.

In this instance, a first assistant engineer was bending a piece of 3/4-inch pipe in a machinist vise in the engineroom machine shop. The pipe slipped from the vise, striking him on the forehead above the right eye and opening a V-shaped wound about 1-inch long and causing some swelling of the area.

This injury, like a great many others, probably could have been



avoided if the injured man had first made sure the pipe couldn't slip.

Courtesy The Marine News

FIRE BELOW

Question: Where on a tank vessel carrying 100,000 barrels of gasoline are you most likely to have a fire?

Answer: In the quarters.

★ ★ ★ ★ ★

Question: Where in the quarters?

Answer: In mattresses or in wastepaper baskets.

★ ★ ★ ★ ★

Question: From what?

Answer: Smoking.

★ ★ ★ ★ ★

Question: How do you know this?

Answer: The record tells us so.

★ ★ ★ ★ ★

Last week a Company vessel was lying at a wharf in a California port. It was about 4 in the afternoon. The vessel had finished discharging crude oil and was awaiting the opening of a pontoon bridge.

Suddenly smoke was seen pouring out of a porthole of a room on the main deck on the offshore side. Obviously the room was on fire. The alarm was given. A portable foam extinguisher was turned into the room as was a portable CO₂ fire extinguisher.

A 2 1/2-inch fire hose was led in from the outside deck and the fire extinguished. Five fire trucks and a fire boat meantime showed up but the fire was out.

Investigation showed that the fire had originated in a wastepaper basket, spread to a set of rubberized nylon rain gear which burned freely, setting off, in turn, bed spreads, mattresses, clothes, and blankets. The amount of smoke was fantastic and greatly hampered fire fighting efforts.

The Master reported that his crew demonstrated courage and resourcefulness, making up what they may have lacked in technical fire fighting skill.

★ ★ ★ ★ ★

We discuss these matters publicly to see what lessons can be learned. What can we learn from this one?

It seems likely that the preliminary source of fuel was wastepaper in the wastepaper basket. These baskets should be emptied regularly. Masters should check this point on their routine inspection of the quarters.

Now what was the source of ignition? A few minutes prior to the fire, paper towels with soapless cleaner and baby oil on them, had been thrown into the basket. Because of the composition of the cleaner and the baby oil and because of the short time involved we can rule out spontaneous

combustion as a source of ignition. It is probable that the source of ignition was smoking materials discarded in the waste basket. Smokers had been in the compartment shortly before the fire was discovered. It is an unfortunate fact that some smokers go through the smoking ritual without really being conscious of what they are doing. It is also an unfortunate fact that many smokers use wastepaper baskets as ash trays.

WHAT FIRE GEAR WAS USED? WAS IT EFFECTIVE?

We understand that a foam extinguisher was discharged into the room at the wastebasket and after the smoke had cleared, it was found that the foam had been directed into the wrong corner.

We conclude that the foam extinguisher was not effective because it was misdirected and because at this time the fire had spread beyond the wastepaper basket.

A CO₂ extinguisher was also used. Such extinguishers are not effective on this type of fire.

A fire hose was led out from the alley way. Attempts to open the valve at the valve hydrant were unsuccessful. The Master is of the opinion that in the smoke and confusion the man, even though experienced, was turning the valve the wrong way. Examination of the valve after the fire showed nothing wrong with it.

A fire hose from the main deck was led into the alley way. It was too short to reach the room. Another length was connected, and, before the water was turned on, led into the alley way. The water was turned on full blast. The men on the nozzle could not handle it. The water was shut off and then turned back on with less force. The fire was quickly extinguished with water. This means of extinguishment was effective.

A professional approach would have been to form a fire party on a weather deck, lay out hose of ample length and assign two men to the nozzle with men spaced along the hose to handle it. The water would be started prior to entering the alley way. The men would then be ordered to advance on the fire. A second crew with another string of hose would backup the first crew to assist them should they get in trouble.

As stated the amount of smoke was fantastic. It filled the alley way and the upper parts of the engine room and greatly complicated the fire fighting. A self-contained air-breathing apparatus which was part of the ship's equipment was brought. By the time they had figured out how to work the thing the fire was out.

This shows the need for training and constant retraining with this type of equipment. We also point out that the fresh air breathing apparatus with which, presumably, all hands are acquainted, could have been used in this case.

The door of the room was open when the fire was discovered. We suggest that the door should have been closed to restrict the spread of the smoke and to restrict the supply of oxygen. Likewise the ship's room ventilation supply, which was fanning the fire, should have been shut down.

The alarm was promptly and properly given. The general alarm was rung, and the wharf and the local fire department were notified. Even though the fire was extinguished by the crew, giving the alarm as was done is extremely important.

As has often been stated, it is much easier to prevent a fire than it is to put one out. Fires of this type may be readily prevented by proper disposal of smoking materials and by keeping wastebaskets emptied.

Note: In reviewing this report several ideas occur to us. Fire drills have become pretty routine on shipboard. Ordinarily two hoses are led out on the lee side and water is ordered on deck. Water is squirted through the hose for a few minutes and that constitutes fire drill.

We suggest that these drills would be of much more value if they were conducted with more variety. Set fire problems. At a fire drill announce that there is a simulated fire in the pumproom. Put everyone through their part in a fire of this nature. Simulate a fire in a paint locker, in the galley, in the fire room, in a recreation room, in a linen locker, or in a cabin. Over the years, in Company vessels, there has been a fire in each compartment listed above.

What equipment should be used? What action is to be taken? Use your imagination. It will pay off in an emergency.

*Courtesy of Safety Bulletin,
California Shipping Company*



PROCLAMATION 3595

FIRE PREVENTION WEEK,
1964

BY THE PRESIDENT OF THE
UNITED STATES OF AMERICA

A PROCLAMATION

WHEREAS fires, most of which could have been prevented, caused the loss of approximately 12,000 human lives and destroyed over a billion dollars worth of property in 1963; and

WHEREAS this shameful waste of human and material resources demands immediate community action to reduce this scourge to an irreducible minimum; and

WHEREAS far too many fires are caused solely by the carelessness and apathy of individual citizens:

NOW, THEREFORE, I, LYNDON B. JOHNSON, President of the United States of America, do hereby designate the week beginning October 4, 1964, as Fire Prevention Week.

I urge State and local governments, the American National Red Cross, the Chamber of Commerce of the United States, and business, labor, and farm organizations, as well as schools, civic groups, and public-information agencies to observe Fire Prevention Week, to develop and employ effective means for disseminating fire safety information and recommendations to all citizens throughout the year, and promptly to undertake other effective community actions designed to eliminate the causes of preventable fires. I also call upon all citizens to understand and personally support the fire prevention and control efforts of their respective community fire departments.

Appropriate Federal agencies will assist in this effort to reduce the intolerable waste caused by preventable fires.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the City of Washington this sixth day of July in the year of our Lord nineteen hundred [SEAL] and sixty-four, and of the Independence of the United States of America the one hundred and eighty-ninth.

LYNDON B. JOHNSON

By the President:
GEORGE W. BALL,
Acting Secretary of State.

[F.R. Doc. 64-6905; Filed, July 8,
1964; 2:30 p.m.]



MARITIME SIDELIGHTS

AWO OPENS CLEAN WATER CAMPAIGN

The American Waterways Operators, Inc., has launched a campaign against pollution of inland waters and harbors. Kickoff of the "AWO Clean Waters Program" was signaled by issuance and distribution of an Inland Waterways Pollution Manual and a first of a series of posters. The manual is a handbook reminder for towboat, tug, and barge personnel to help them take the necessary precautions to control pollution during cargo loading, discharge, and transfer operations. The handbook may be obtained by writing the American Waterways Operators, Inc., 1025 Connecticut Avenue, Suite 502, Washington, D.C., 20036. On our back cover is reproduced the first of AWO's series of posters.

RADIO SHIP COURIER ARRIVES

The U.S. Coast Guard Cutter *Courier* returned to the United States recently after nearly 12 years of radio relay duty off the Isle of Rhodes, Greece. The *Courier*, converted "knot" class cargo vessel, was assigned in 1952 as a radio relay station for the Voice of America. Plans call for future utilization of this vessel as a training ship for the Coast Guard Reserve.

SMITHSONIAN GETS SEA HERO AWARDS

A collection of awards issued to merchant seamen for acts of heroism and valor has been presented to the Smithsonian Institution's Department of Naval History by the Maritime Administration, U.S. Department of Commerce.

The collection consists of medals, emblems, service bars, combat bars, plaques, citations, and letters of commendation, as well as reprints of Executive orders, related laws, and other publications.

A total of 7,297 medals and other decorations have been issued by the Maritime Administration and its predecessor agencies since 1937, for acts of heroism on the high seas. Such awards are part of the Maritime Administration's continuing program of recognizing, officially and tangibly, noteworthy acts by American merchant seamen.

BARGE INDUSTRY SAFETY CONTEST



WINNERS in the 1963 Barge and Towing Vessel Industry Safety Contest were honored recently at a luncheon sponsored by the American Waterways Operators Inc., at the Whitehall Club in New York City. Awards were presented to the representatives of the winning companies by F. A. Mechling, executive vice president of A. L. Mechling Barge Lines, Inc., Joliet, Ill., and chairman of the board of AWO. Recipients of the awards are shown with officials of AWO, representatives of Government agencies with whom the Association works, and the National Safety Council, which sponsors the contest jointly with AWO. Seated (left to right): D. L. Buchanan, assistant manager-operations, Pittsburgh Steamship Division, United States Steel Corp., and chairman of the Marine Section of the National Safety Council; Brig. Gen. John C. Dalrymple, Division Engineer, North Atlantic Division, Corps of Engineers; Mr. Mechling and Braxton B. Carr, president of AWO.

Standing (left to right): Alan C. Gumbert, superintendent of the River Transportation Department, United States Steel Corp., Clairton, Pa., first-place winner in group A, those firms working more than 5,000 man-days in the first 4 months of the contest; Richard L. Mikolon, marine representative, Texaco, Inc., Bayonne, N.J., second-place winner in group A; George W. Lowe, manager, Humble Oil & Refining Co.'s New York operations, third-place winner in group A; M. F. Spellacy, manager, marine division, inland waterways department, Humble Oil & Refining Co., first-place winner in group B, those firms working less than 5,000 man-days in the first 4 months of the contest; and John F. McKay, Jr., manager of Marquette Cement Manufacturing Co.'s New York distributing plant, second-place winner in group B.

The Western Rivers Panel of the Merchant Marine Council which met in St. Louis August 19 adopted a proposal to unify the Inland and Western Rivers Rules of the Road.



Empty pressurized or aerosol cans—the common pushbutton spray cans

containing everything from hair spray to whipped cream—may explode if put in a fire. The writer saw such a case when a spray can accidentally got mixed up with some papers in a fire-place, and it was quite an explosion.

Never throw these empty spray cans into the incinerator or any other kind of fire.—Trade Publication.



nautical queries

DECK

Q. How should the bitter end of anchor cables be secured in the chain locker and why should it be so secured?

A. Most modern vessels are fitted with recessed holdfasts on the forward side of the chain locker into which the bitter-end link should be fitted. A heavy pin is inserted through the link securing it. The bitter end should be so secured in all cases to prevent accidental loss of chain or danger to personnel should the bitter end come up through the chain pipe and over the wildcat. The chain may be easily slipped, if necessary, with this arrangement without need of entering the chain locker, as the holdfast pin is accessible from the forepeak.

Older vessels have padeyes or ringbolts near or under the top of the locker where the bitter end may be lashed, usually after passing through a ringbolt in the bottom of the locker. The bitter end in all cases must be secured in such a manner that it cannot foul the bight of the chain.

Q. a. What is meant by the "pivoting point" of a vessel?

b. Where will the "pivoting point" usually be found in a vessel?

c. Knowing the location of a vessel's "pivoting point," state why experienced shiphandlers will observe the stern while turning in constricted waters.

A. a. The pivoting point is the point about which the vessel turns when rudder is applied.

b. The pivoting point is usually located in the forward one-third of the vessel's length.

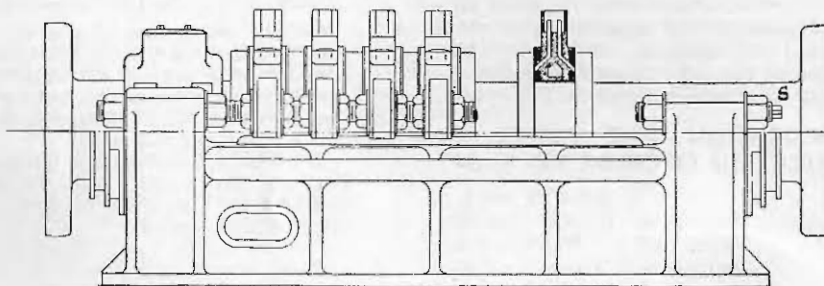
c. As the vessel turns about its pivoting point, the stern will swing outside of the circle described by the pivot point and thus form the extreme radius of the vessel's swing. The turning of the vessel is usually more perceptible astern than looking forward due to the relative distances from the bridge and pivoting point.

Q. Why is the rudder of a single screw vessel most effective when the propeller is turning in ahead motion?

A. A rudder on a single screw ship is most effective with the propeller turning ahead because the rudder power is increased by its diversion of the propeller stream as well as the power which it obtains from flow of water from the ahead motion of the vessel.

ENGINE

THRUST BEARING



Q. Make a side-view sketch of a horseshoe type thrust bearing.

Q. List the operating precautions to be taken when using steam soot blowers.

A. 1. The boiler water level should be increased slightly prior to blowing tubes and closely maintained throughout the tube cleaning operation.

2. The soot blower steam lines must be thoroughly drained and warmed up prior to operating any soot blower element.

3. Before blowing the draft should be increased to guard against flarebacks.

4. Never allow the steam to blow from the nozzle without rotating the element.

5. Operate the elements in the sequence recommended by the boiler manufacturer.

6. After all units have been operated close the main control valve and open the drain valve. Be sure the drain valve is left open until the next operating period.

Q. Describe the apparatus usually installed on oil burning vessels to prevent oil from getting into the water sides of boilers. What measures would you take in the event of a fuel-oil heater leak?

A. Contaminated drains tanks or drain inspection tanks, to which are piped the condensate drain lines from all fuel oil and lubricating oil heaters, are usually installed on oil burning vessels. The contaminated drains tank will contain a light and an inspection glass so that the condition of the condensate can be observed. If an oil leak develops the drains tank

must be cut out of the condensate system while the leaking heater is found and cut out. Oil filters and strainers are also installed in the feedwater lines of some vessels which must be frequently and regularly changed and cleaned.

Q. What procedure would you follow in the event you discovered the water was out of sight in the boiler gauge glasses and had dropped below the level of the lowest try cock?

A. Deaden the fire with wet ashes (if coal) or if oil burning, shut off burners.

Speed up machinery if possible and lower the pressure gradually. This may also be done by cautiously lifting the safety valve with releasing gear.

Close feed check valves.
Close the boiler main and auxiliary stop valves.

Close dampers, furnace fronts, prevent air leakage into fire side of boiler.

Prevent as far as possible any increase in pressure which may be built up from accumulated heat in the boiler heating surfaces.

Allow boiler to cool sufficiently to permit inspection.

Q. Fire detecting and extinguishing equipment is required on which of the following:

- (a) All cargo vessels
- (b) All vessels over 150 feet in length
- (c) All passenger vessels on international voyage
- (d) All vessels over 450 feet in length

A. (c) All passenger vessels on international voyage

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 5-64

JULY 9, 1964.

Subject: Renewal of Ocean Operators' and Operators' licenses.

EDITORS NOTE—Due to space limitations the text of this circular and the enclosures thereto are not reprinted here. The purpose of this circular is to inform all licensed ocean operators and operators of vessels on inland waters other than the Great Lakes and western rivers concerning an amplification of the requirements for renewal of licenses. Copies of this circular can be obtained from the officer in charge of marine inspection.

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 6-64

JULY 20, 1964.

Subject: Sacrificial Anode Installations In Tank Vessels; Recommended Procedures and Standards for Appeals and Requests Concerning

1. *Purpose.* This circular outlines the recommended procedures and standards with respect to certain types of sacrificial anodes in cargo tanks, utilized for the carriage of inflammable or combustible liquids in bulk. The following of these recommended procedures will expedite handling of appeals and requests concerning sacrificial anodes.

2. *Background.* The provisions of 46 CFR 32.01-25 in the Tank Vessel Regulations, published in the Federal Register of 16 May 1964 prohibit the use of aluminum and/or magnesium sacrificial anodes. The conditions under which the use of alternates or equivalents may be permitted are set forth in 46 CFR 30.15-1. While the provisions in 46 CFR 30.20-50 describe the right of appeal by any person directly affected by any decision of the officer in charge, marine inspection, the Navigation and Vessel Inspection Circular No. 3-64 publicized the prohibition of aluminum and/or magnesium sacrificial anodes and stated an owner could appeal to the Commandant for relief.

3. Recommended Standards.

a. Sacrificial anodes using materials other than those having aluminum and/or magnesium in whole or in part are permitted as heretofore.

b. The recommended standards for a sacrificial anode using an aluminum alloy will be permitted under the authority of 46 CFR 30.15-1 under the following criteria:

(1) The maximum allowable energy that can be developing by a falling anode will be limited to 200 foot-pounds.

(2) No anode shall be installed more than 6 feet above the bottom

DEPARTMENT OF THE NAVY

MILITARY SEA TRANSPORTATION SERVICE

WASHINGTON 25, D. C.

From: Commander Military Sea Transportation Service

To: Master, USNS *Mission Santa Cruz*

Subj: "Expression of Gratitude" plaque presentation to USNS *Mission Santa Cruz*

1. The Commandant, United States Coast Guard, has forwarded to Commander, Military Sea Transportation Service, for presentation to USNS *Mission Santa Cruz* an "Expression of Gratitude" plaque given by Mr. Y. Yagishita, president of the Yagishita Deep Sea Fishery Co. of Tokyo.

2. In the "Expression of Gratitude" plaque, Mr. Yagishita states as follows:

On the high seas of the Atlantic, 300 miles northwest of San Juan, Puerto Rico, where our *Kaiko Maru No. 28* was sinking as a result of collision with an Italian tanker, *Tina Italia*, on June 4th of 1963, USNS *Mission Santa Cruz* was good enough to rush to the scene and engage in the heroic action of extensive search of *Kaiko Maru's* survivors and rescue of the capsized vessel.

We wish to express our deepest gratitude and most profound appreciation for the gallant and self-sacrificing efforts made by Master J. D. Trudeau and his crew aboard this honorable and historic fame of USNS *Mission Santa Cruz*.

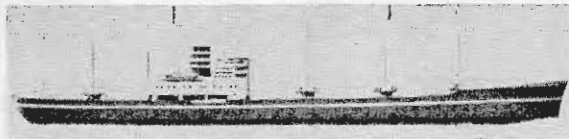
YAGISHITA DEEP SEA FISHERY CO.,
Tokyo, Japan.

YASABURO YAGISHITA,

President.

3. COMSTS takes real pleasure and great pride in presenting this eloquent tribute from Mr. Yagishita and his company to the Master and crew of USNS *Mission Santa Cruz*. Your performance in rendering aid at the scene of the collision on 4 June 1963 was indeed in keeping with the highest traditions of the sea.

ROY A. GANO,
Vice Admiral, USN.



of the tank. Special consideration will be given when structural design prevents the anodes from falling in event of failure of attachments.

(3) At least two welded or bolted connections to supporting structure will be required for each anode. Special consideration will be given to proprietary attachments which provide the equally safe installations.

(4) An analysis of the alloy composition. (The anode should be magnesium free and the amount of silicon limited to approximate residual amounts.)

(5) The recommended construction of the anode should utilize a mild steel core with necessary attachments. Other types may be used but will require special consideration.

c. When other standards than those described in subparagraph 3b are proposed, special consideration will be given and deviations from the recommended standards permitted so long as the overall equivalent safety is provided.

4. *Recommended Procedures.* If an owner desires to retain an existing

anode installation or to install a new system, he should submit drawings, in triplicate showing the existing or proposed installation to the Commandant (MMT). The drawings should reflect the information described in paragraph 3.

5. *Action.* Owners may submit the required information direct. The cognizant officer in charge, marine inspection, shall forward all information on proposed aluminum anode installations to the Commandant (MMT).

AFFIDAVITS

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

Speedline Division, Horace T. Potts Co., Erie Avenue and D Street, Philadelphia, Pa., 19134, FLANGES.

Barnett Foundry & Machine Co., 536 Lyons Avenue, Irvington, N.J., CASTINGS.

Metal Goods Mfg. Co., 110 South Park Avenue, Bartlesville, Okla., VALVES AND FITTINGS.

MERCHANT MARINE SAFETY PUBLICATIONS

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

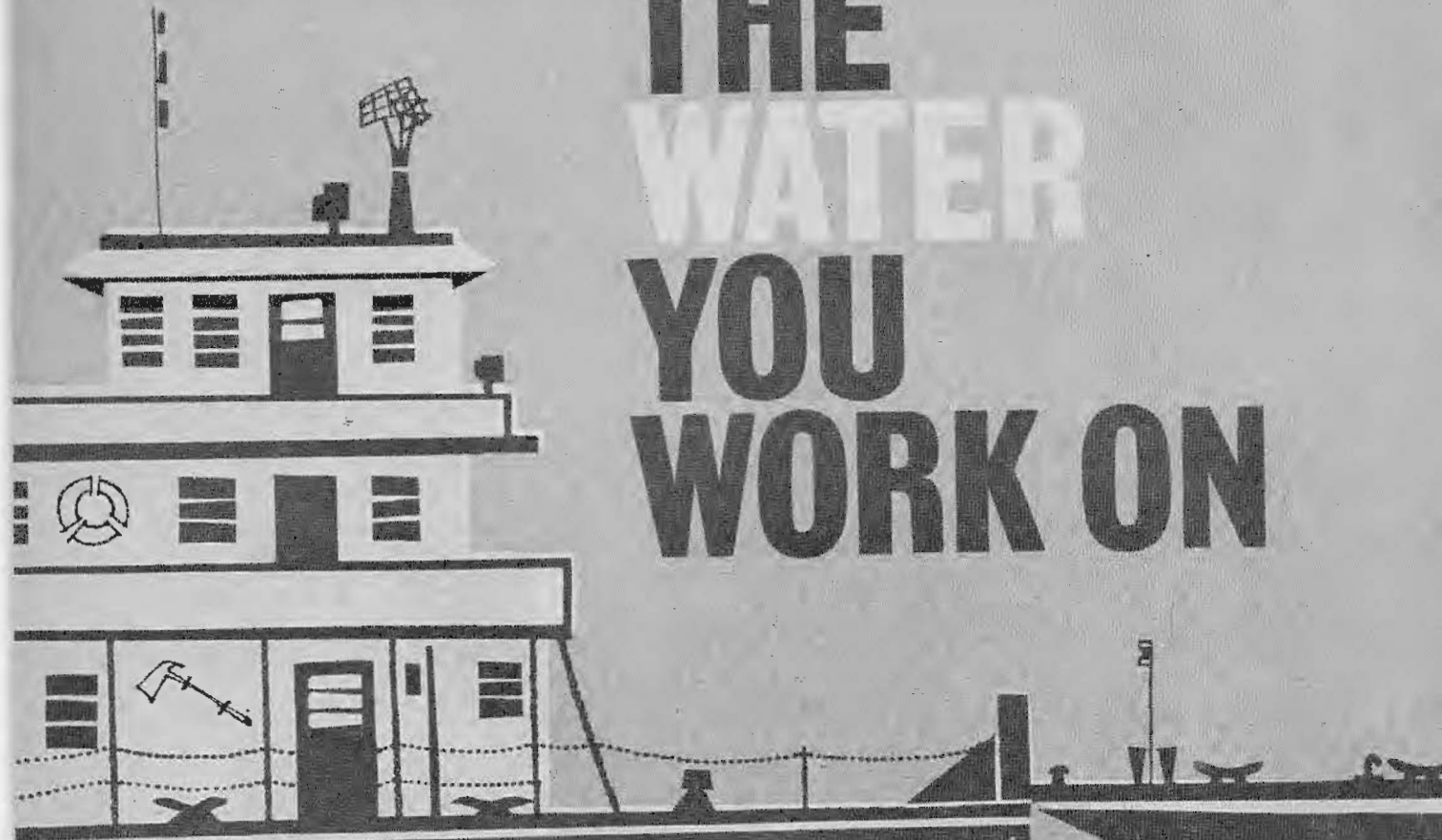
The Federal Register may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. Subscription rate is \$1.50 per month or \$15 per year, payable in advance. Individual copies may be purchased so long as they are available. The charge for individual copies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

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

CHANGES PUBLISHED DURING AUGUST 1964

The following has been modified by Federal Register: None.

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THE
WATER
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