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Mention of source will be appreciated.

The Merchant Marine Council of the United States Coast Guard

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For each meeting two District Commanders and three Marine Inspection Officers are designated as members by the Commandant.

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Cover Picture: Coast Guard Buoy Tender *Ivy* repairing an aid to navigation.

COUNCIL ACTIVITIES

The Merchant Marine Council held the semiannual public hearing at Coast Guard Headquarters, Washington, D. C., on September 28, 1948, for receiving comments on proposed changes in regulations, the substance of which was published in the July issue of the PROCEEDINGS. In addition to the members of the Merchant Marine Council listed on this page the district commanders of the First and Eighth Coast Guard Districts and marine inspection officers of the Second, Fifth, and Twelfth Coast Guard Districts sat as members.

The proposal to amend section 29.16 of the motorboat regulations, to relieve builders of outboard motorboats from the necessity of executing a builder's statement for use as evidence of ownership of such craft prior to issuance of a certificate of award of number, was considered by the Council. In view of the comments received on the proposal it was the decision to take no action to amend the regulation. Administratively, however, instructions will be issued to Officers in Charge, Marine Inspection, that builder's certificates will not be required prior to issuance of a certificate of award of number to boats less than 25 feet in length whether propelled by outboard or inboard motors. It is extremely unlikely that boats of less than 25 feet in length would measure up to the tonnage of a vessel requiring documentation should a later owner of such boat consider documenting the vessel. Builder's certificates are required by the Bureau of Customs prior to documentation of a vessel, and for the convenience of owners of boats which may become eligible for documentation it has been the practice of the Coast Guard to keep such certificates in files for numbered boats.

Favorable consideration was given by the Council to comments received on the proposed requirements in section 54.01–40 concerning testing of refrigeration systems on board ship. The amendment as recommended will bring the requirements for hydrostatic testing of refrigeration systems into agreement with those of the American Bureau of Shipping.

No comments were received on the proposed amendment to section 55.07–1 (c) and the written descriptions of figures 55 07–15 (f12), 55.07–15 (f13), and 55.07–15 (f17). Accordingly the Council recommended adoption of the section and revised descriptions of the figures as proposed. The revisions will clarify the temperature limitations and maximum pressures for piping systems using (1) furnace butt-welded iron or steel pipe, or (2) joint and flange connections for class II piping.

The proposal to amend section 146.23–13, prescribing requirements for transportation of hydrochloric acid in bulk on vessels, was a subject of considerable comment. The comments were directed to specifying in greater detail the requirements for lining of tanks, piping, valves, and other fittings and to make no distinction between common carrier vessels and other vessels. The nature of the comments was such that further study is necessary in order to arrive at a final draft of the section. Upon completion of the redraft of the section the matter will be referred to the Council for action.

The passage of Public Law 544 on May 21, 1948, which becomes effective on January 1, 1949, made it necessary that consideration be given to amending certain sections of the Pilot Rules for Inland Waters, the Pilot Rules for Western Rivers, and the descriptions of the boundary lines separating the high seas from inland waters.

No comments were received on the proposal to delete parts 301, 311, 321, and 331 from title 33, Code of Federal Regulations. These parts contained repetitions of the statutory rules of the road for various waters, and as it is not deemed necessary to repeat such statutes in the regulations, the Council recommended deletion of these parts.

No objections were received on the proposal to amend the boundary lines separating the high seas from inland waters. Public Law 544 amended 33 U. S. C. 154 to provide that the inland rules of the road shall be followed by all vessels upon the harbors, rivers, and other inland waters of the United States, except the Great Lakes and their connecting and tributary waters as far east as Montreal, and the waters of the Mississippi River between its source and the Huey P. Long Bridge and all of its tributaries emptying thereinto and their tributaries, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway, and the waters of the Mobile River above Choctaw Point and all of its tributaries, and the Red River of the North. Accordingly the Council recommended that certain sections of part 302 be deleted in order that the rivers mentioned in those sections will on January 1, 1949, come within the application of the Inland Rules.

Certain sections of part 312 containing pilot rules for inland waters were amended to describe therein the waters on which the Pilot Rules for Inland Waters are applicable.

The Council considered favorably the comments received on the proposal to amend part 332 containing pilot rules for western rivers. Numerous deletions were made from the part inasmuch as many of the existing regulations have been incorporated in Public Law 544 which becomes effective January 1, 1949. On other pages of this issue of PROCEEDINGS appear the entire part 332 containing the pilot rules for western rivers which become effective on the above date. Pilots of vessels navigating the waters described in section 332.01 of these regulations should make a thorough study of the regulations contained in the new part in order that they may become familiar with the rules prior to the date, January 1, 1949, on which they go into effect.

The passage of Public Law 525 on May 12, 1948, required the Coast Guard to promulgate regulations governing licensing of radio operators. Provisions of the law become effective April 1, 1949. A very large number of comments in writing and made orally at the hearing were received on the proposal to prescribe regulations setting forth qualifications that a radio operator must have in order to be eligible to receive a license as radio officer on merchant vessels. Favorable consideration was given to some of these comments and unfavorable consideration to others.

No action was taken to amend 46 CFR 10.05–11 and 46 CFR 10.10–25 which would have required officers of vessels navigating exclusively in the Hawaiian Islands and Puerto Rican waters to meet the same requirements as applicants for licenses on vessels operating in other waters. The public hearing on these proposed changes was held in Honolulu, T. H., on June 15, 1948. Consideration was given to the objections raised at that hearing and also submitted in writing to the Council. It is deemed that the present regulations are adequate.

No objections were received to the proposal to amend section 12.02–13 and to add a new section 12.02–14 setting forth requirements for citizenship and nationality of citizens and aliens prior to receipt of merchant mariner's documents. Accordingly the Council recommended adoption of the amendments as proposed.

No objection was received to the termination of approvals of certain safety valves which do not comply with existing regulations. The Council recommended termination of these approvals with the proviso that such valves as are presently in service aboard ship may be continued in use if found to be satisfactory.

The Council considered favorably the comments received on the proposed specifications for backfire flame arresters for carburetors and such comments were incorporated in the specifications which will appear in subpart 162.015. Comments received on the specifications for cork and balsa wood life preservers were likewise incorporated with the specifications which will appear in subparts 160.003 and 160.004. Sections of the regulations which at present contain specifications for these items will be deleted.

The petition of a manufacturer of burlap bags was heard that section 146.27–100 be amended to provide that used burlap bags, which have been cleaned by vacuum or mechanical processes, be accorded the same classes of stowage as is given used burlap bags which have been washed. After further study on this matter early action will be taken by the Council.

The changes as recommended to the Commandant for adoption will be published in the Federal Register at an early date and, as space permits, will be duplicated in the future issues of the Proceedings.

SUBDIVISION AND DAMAGE STABILITY OF PASSENGER VESSELS—THE 1948 CONVENTION ON SAFETY OF LIFE AT SEA

Except in the case of vessels on short international voyages which are permitted to carry more persons than can be provided for in lifeboats, and for which an improved standard of subdivision is provided, the 1948 convention retains the subdivision formulation of the 1929 convention. This formulation has been implemented, however, by the adoption of damage stability regulations.

The 1929 convention considered the matter of stability but was unable to agree on any provisions on this subject except for the following general provisions:

(*a*) Required passenger ships to be inclined and stability information necessary to "the efficient handling of the ship" to be supplied operating personnel.

(*b*) Required administrations to be satisfied that watertight decks, inner skins, or longitudinal bulkheads, if fitted, do not in any respect diminish the safety of the ship, particularly having in view the possible listing effects in case of flooding. (This has been understood by the United States administration to include, by inference, the possible effect on stability of flooding a main subdivision compartment also, and as indicated by the British at the 1948 conference, has also been so understood by them.)

(c) Recommended that contracting governments undertake to study the subject of stability and exchange information thereon.

The 1929 convention was not ratified by the United States until September 1936, after the occurrence of the *Mohawk* and *Morro Castle* disasters. In the *Mohawk* casualty 45 persons out of 164 lost their lives as a result of the final capsizing and sinking of the vessel, following a collision which occurred in clear weather and on a smooth sea.

Appointed by the senatorial committee which investigated these casualties, a technical committee composed of outstanding naval architectural, shipbuilding, and Government representatives, after considerable study, concluded: (*a*) That

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an important group of American ships (primarily those in coastwise trade) were not adequately subdivided and, not being engaged in foreign trade, were not subject to the 1929 convention, (*b*) that the requirements of the 1929 convention, even if applied to these vessels, would not require adequate subdivisions and stability. These conclusions and the committee's recommendations concerning suitable regulations were published in March 1937 as part of Senate Report 184. These regulations were not adopted into the law, but have constituted a general guide to American shipbuilding and design since that time. In addition, as a result of the subdivision and stability studies which were made, under the supervision of the Bureau of Marine Inspection and Navigation, American shipowners took such steps as were practical to improve their existing vessels in this respect.

In 1945 when the United States committee work looking towards another safety at sea convention was commenced, a standard of watertight subdivision and damage stability approximately equivalent to that advocated by Senate Report 184 was proposed by the Coast Guard, representing an appreciable increase over the subdivision standards of the 1929 convention, as well as an amplification with regard to the provision of damage stability requirements.

However, a majority of the members of sub-committee 1–c, which dealt with this matter, were of the view that such standards could not at all successfully be advocated internationally, and the standard of subdivision finally adopted as the United States delegation's proposal was one which represented only a very moderate nominal increase over that of the 1929 convention, being even less of an increase when the effect of modern machinery developments was taken into consideration. However, rules for the effective control of stability, so as to provide a reasonable assurance of adequate stability in the damaged condition were retained in the United States proposals, these rules being approximately consistent with the United States practice in this respect. In addition to the major considerations concerning the standard of subdivision and requirements for damage stability, an important related point which was included in the United States proposals was a recommendation to increase the minimum compartment length from 10 feet plus 2 percent of the vessel's length to 20 feet plus 2 percent of the vessel's length, the purpose of this proposal being to decrease the likelihood, at any given standard of subdivision, of a bulkhead being involved in damage.

At the recent meetings in London, notwithstanding its moderateness and reasonableness in American eyes, the United States proposal for a change in the standard of subdivision was not favorably received by the other countries concerned, who indicated that it was their practice to design and build very close to the 1929 convention. The United States members of the Criterion of Service Panel and of the structural subcommittee were given every opportunity to advance the case for the United States proposed standard of subdivision, but in the face of the existing European practice, were not able to develop sufficient support for any increase from the 1929 subdivision standards, for general applicability. The United Kingdom, however, proposed a special higher standard of subdivision for vessels on short international voyages (not over 600 miles, between ports, or not more than 200 miles from a point where persons may be landed in safety), and which are permitted to carry more persons than can be provided for in lifeboats; and this proposal, with some modification, was adopted. In general, this requires that such vessels be subdivided to a two-compartment standard.

In line with the United States proposal concerning minimum length of compartment, but not going quite so far, the conference also adopted an increase in the minimum compartment length from 10 feet plus 2 percent of the vessel's length to 10 feet plus 3 percent of the vessel's length, or 35 feet, whichever is the less.

In the matter of its proposals concerning regulations for stability in the damaged condition, the United States representatives, contrary to the experience of the United States delegation in 1929, received considerable support; and definite proposals for such regulations were also made by Italy and the Union of Soviet Socialist Republics. The United Kingdom, while it did not make any specific proposals, did circulate an extensive memorandum, Safcon 41, dealing with the general subject of ship stability, and describing their practices and policy in some detail. This memorandum indicated that, in many respects, their views on this subject were in accord with the United States views.

As a result of this favorable atmosphere, and an evidently general recognition of the futility of providing watertight subdivision without taking steps to provide sufficient stability to withstand the flooding, or to limit the heel to a value at which the ship might be worked or the boats launched, it was possible to reach a very satisfactory agreement on regulations governing this important matter. These regulations, which are approximately equivalent to those proposed by the United States delegation, may be very briefly summarized as follows:

(*a*) Sufficient intact stability is required to enable the ship to withstand the final stage of flooding resulting from a damage penetration up to one-fifth the vessel's breadth inboard and extending fore and aft 10 feet plus 3 percent of the vessel's length, but not more than 35 feet, and involving one main compartment if the required factor of subdivision is more than 0.5 or two main compartments if the required factor of subdivision is 0.5 or less.

(b) Except in limited circumstances, the residual metacentric height in the final stage of flooding is required to be positive.

(*c*) Heel in the final stage of unsymmetrical flooding is ordinarily limited to 7°, but in some cases may be permitted up to 15°, but in no case so as to submerge the margin line.

(*d*) The master of the ship is required to be supplied with all data necessary to the maintenance of adequate stability to withstand the critical damage, and with regard to the proper operation of any crossflooding arrangements, if fitted.

(*e*) An administration may permit a relaxation from damage stability requirements only in exceptional cases when it is satisfied that the proportions, arrangements, and other characteristics of the vessel are the most favorable to stability after damage that can practically and reasonably be adopted in the particular circumstances, and where it is shown that the required metacentric height in any service condition is excessive for the service intended.

It is considered that, notwithstanding the failure to adopt any general increase in the required degree of watertight subdivision, and the real vulnerability of small to moderate size vessels carrying relatively large numbers of persons, but required to meet less than a two-compartment standard of subdivision, a real advance of international safety standards has been achieved by the adoption of the damage stability regulations of the new convention. Since these regulations are similar to the standards to which American vessels are presently checked it is not anticipated that they will necessitate appreciable changes in American design practice, except in some instances, as a result of preliminary design stability studies, it may be possible to adopt arrangements which are especially favorable, and as a result, to meet the damage stability requirements with a minimum required intact stability.

LESSONS FROM CASUALTIES

METHODS OF ARTIFICIAL RESPIRATION

ASPHYXIA

Asphyxia is a condition in which respiration, or breathing, has ceased. It may be the result of either abnormal physiological or physical causes.

The physiological causes of asphyxia may include lack of stimulation of the respiratory center in the brain, paralysis of the respiratory center, and the inability of the blood to absorb oxygen from the lungs or to effect the normal exchange of gases in the body tissues.

When it is due to physical causes, it may be spoken of as suffocation. In asphyxia resulting from physical causes the lungs are deprived of air because of stoppage of the air passages mechanically. Such causes may include water in the air passages, as in drowning; foreign body in the air passages; diptheritic membrane extending into the larynx; tumor in the air passages; swelling of the mucous membrane following inhalation of live steam or an irritating gas; constriction around the neck compressing the trachea; and the presence of inert gases in the air. The most frequent causes of stopping of breathing are drowning, electrical shock, and gas poisoning. Asphyxia may be present also in victims of shock or collapse, of extreme exposure to heat or cold, and chemical poisoning.

SYMPTOMS OF ASPHYXIA

The symptoms by which the necessity for artificial respiration may be recognized are: Cyanosis (blueness of the skin and membrane), suspension of respiration, or shallow breathing in some cases of poisoning.

TREATMENT OF ASPHYXIA

The first thing to do in treatment is to remove the cause of the asphyxia or to remove the victim from the cause. Then administer artificial respiration. Later treat as for shock. In some cases artificial respiration can be administered while the victim is being removed from the cause to more suitable surroundings. The treatment for shock can often be started while artificial respiration is being administered.

The victim's mouth should be cleared of any obstruction, such as chewing gum, tobacco, false teeth, or mucous, so that there is no interference with the entrance into and escape of air from the lungs.

Artificial respiration should be started immediately. Every moment of delay is serious. It should be continued for at least 4 hours without interruption until the victim is pronounced dead by a medical officer or until normal breathing is established.

Not infrequently the victim, after a temporary recovery of respiration, stops breathing again. The victim must be watched and if natural breathing stops, artificial respiration should be resumed at once. Perform artificial respiration gently and slowly. Roughness may injure the patient.

Every precaution must be taken to prevent further injury to the victim. It may be necessary to give artificial respiration over a prolonged period of time. In the methods that require the application of pressure, injury to the skin, ribs, and internal organs must be avoided.

SCHAEFER PRONE PRESSURE METHOD

The Schaefer prone pressure method can be carried on for a considerable length of time by one person and without danger to the victim if the operator does not exert undue pressure. Its principle is alternately compressing the chest and releasing the pressure, thus causing air to flow out of and into the lungs. Approximately 60 pounds pressure is probably sufficient even for a large adult. Even though a different method of artificial respiration is to be used later, the Schaefer method should be used until conditions are such as to permit institution of the better method.

1. Lay the patient on his abdomen, one arm extended directly overhead, the other arm bent at the elbow and with the face turned sideways and resting on the hand or forearm, so that the nose and mouth are free for breathing.

2. Kneel, straddling the patient's thigh on the side toward which the face is turned.

Place the palms of the hands on the small of the back with the fingers resting on the ribs, the little finger just touching the lowest rib, with the thumb and fingers in a natural position and the tips of the fingers just out of sight.

3. With the arms held straight, swing forward slowly, so that the weight of the body is gradually brought to bear upon the patient. The shoulder should be directly over the heel of the hand at the end of the forward swing. Do not bend the elbows. This operation should take about 2 seconds.

4. Now immediately swing backward so as to remove the pressure completely.

5. After 2 seconds swing forward again. Repeat unhurriedly 12 to 15 times a minute the double movement of compression and release, a complete respiration in 4 or 5 seconds.

6. As soon as artificial respiration has been started and while it is being continued, an assistant should loosen any tight clothing about the patient's neck, chest, or waist. The patient should be kept warm.

7. When natural breathing has been restored, the patient should be treated as for shock.

8. In carrying out resuscitation it may be necessary to change the operator. This change must be made without losing the rhythm of respiration.

EVE METHOD

The Eve method of artificial respiration makes use of the weight of the abdominal organs alternately to push and pull the diaphragm up and down in the manner of a piston and consists of rocking the victim securely lashed to a litter or board over a fulcrum. It is easy on the patient, less tiring to the operator, and requires less skill. Its disadvantage is the fact that it requires some apparatus, namely a litter, or board, and fulcrum.

1. The patient is laid face downward on a litter or board, with arms outstretched or at the sides, whichever is more convenient.

2. The ankles and wrists are secured to the litter, or board.

3. The litter, or board, is placed on a fulcrum. (See fig. 1.)

4. The litter, or board, is rocked at 10 double rocks a minute with a tilt each way of 45° to 50°. (See figs. 2 and 3.)

5. In resuscitating an apparently drowned person the first head-down tilt should be maintained until no more water drains from the stomach or lungs. (See fig. 3.)

6. Continue until normal breathing is restored or until the patient is pronounced dead by a medical officer.

7. The patient should be kept warm.

8. When artificial respiration has been started, the treatment as for shock should be instituted.

THE INHALATOR

The inhalator provides a supply of oxygen and carbon dioxide from which the lungs fill when manual artificial respiration is performed. Since lack of oxygen is the basis for asphyxia from any cause, be it submersion, carbon monoxide, strangulation, electric shock, etc., the use of oxygen in resuscitation is highly desirable. A small percentage of carbon dioxide is added to prevent the loss of this respiratory stimulant during prolonged artificial respiration.

Inhalator apparatus consists of a tank of oxygen, carbon dioxide mixture, pressure reduction system, flow meter and rubber hose leading to a nasal tube. The mixture contains 95 percent oxygen and 5 percent carbon dioxide by volume. It is applied as follows:

FIGURE 1.

FIGURE 2.

(1) Manual artificial respiration is continued without interruption.

(2) The throat and mouth of the patient are freed of fluid, vomitus, etc., by careful wiping to insure a free airway. This should be repeated occasionally thereafter.

(3) With the oxygen-carbon dioxide tank open, a flow of 2 liters per minute registered on the flowmeter is permitted to pass through the system and out of the nasal tube. The nasal tube is then passed through the nostril to a distance equal to 1 inch less than the distance between the nostril and the ear canal. It is held in position by being passed backward over the head and secured at the forehead by adhesive tape.

(4) The head of the patient is tilted somewhat back toward the shoulder blades, straightening the air passages and preventing the tongue from falling backward and blocking the windpipe. The flow of oxygen-carbon dioxide mixture is gently raised to 4 liters per minute which is continued thereafter.

(5) Actual regulation of the inhalator mechanism will depend on the type and make used. The manufacturer's directions should be followed. The above are general principles pertaining to inhalation from apparatus of any kind.

(6) Inhalation of oxygen may be rendered entirely safe if precautions are taken against explosion. There should be no oil whatever on or near fittings, and no lighted matches, pipes, cigarettes, etc., allowed in the vicinity of the resuscitation.

GENERAL RULES AND INFORMATION

1. Coast Guard procedure for artificial respiration is now officially based on the Schaefer and Eve methods combined with oxygen by inhalation. The Howard-Sylvester method is no

FIGURE 3.

longer approved as a Coast Guard method. The general rules outlined below are set forth as a guide to determine the proper course of action under various conditions and to establish effective coordination with appropriate local organizations.

2. Inhalation is accomplished by means of "inhalator" apparatus which provides a means of supplying oxygen, or a mixture of oxygen and carbon dioxide, while inspiration and expiration is being induced by manual (Schaefer or Eve) artificial respiration. Many Coast Guard units are now equipped with inhalators. Whenever a Coast Guard unit is not provided with an inhalator, advantage should be taken of oxygen brought to the scene of a resuscitation operation by civilian or other rescue teams.

3. The mechanical resuscitator (sometimes referred to as the "pulmotor"), which is not furnished to Coast Guard units, is an apparatus which supplies oxygen, or a mixture of oxygen and carbon dioxide, while inspiration and expiration is being induced by the application of alternating pressure. Although this equipment has its place when manned by skilled hands, it is possible that it may operate as a hazard rather than a help if it is handled unskillfully. Most resuscitators can be set up to operate as simple inhalators. Risks connected with the use of the pressure feature of the resuscitator can thus be avoided simply by using the resuscitator as an inhalator, in accordance with paragraph 4 (b) hereof.

4. *Comparison of methods and rules for their use:*

(*a*) The Schaefer method requires no equipment and is the quickest to put into operation. It should therefore be started immediately upon removing a victim of submersion from the water. Oxygen by inhalator should be administered as soon as possible. Although the exchange of air by oxygen is much less with the Schaefer method than with the Eve method, it may revive the patient before another method can be applied; otherwise, it serves to expel the water from the stomach and lungs and to keep the patient alive until a more effective method can be applied.

(*b*) The Eve method, which is easier on the patient and affords a greater exchange of oxygen in the lungs, thus greatly enhancing the chances of survival, should be substituted for the Schaefer method as quickly as possible and with the least possible interruption of rhythm. *The safest and probably the most effective general purpose method of resuscitation is the Eve method used in conjunction with the inhalator (or the mechanical resuscitator used as an inhalator), and accordingly shall take precedence over other methods including the mechanical resuscitator.*

(c) There is no substitute for thorough training, advance planning, and good judgment. A specific rule for each case cannot be made. Decisions as to whether a patient should be turned over to another team arriving on the scene, or as to the best choice of method under a given set of circumstances, must be made by the person in charge. As a general guide to aid Coast Guard personnel in determining the proper course of action to follow, the various methods are listed below in the order of their relative merit:

(1) Eve method with oxygen;
(2) Mechanical resuscitator when manned by a competent team;
(3) Schaefer method with oxygen;
(4) Eve method without oxygen;
(5) Schaefer method without oxygen.

(*d*) In any case when a Coast Guard team using a manual method gives way to resuscitator team the person in charge of the resuscitator team becomes responsible for the patient. However, Coast Guard personnel shall continue to render every assistance they are able to furnish for bringing the resuscitation to a successful conclusion.

SHOCK

Shock is a term used to describe a condition in which the activities of the body are greatly depressed. The usual characterists are "ashen" face, weak and rapid pulse, great lowering of blood pressure, listlessness, dulling of sensibility, subnormal temperature, and irregular gasping breathing. There may be cold sweat present. Some degree of shock follows most injuries. It may be slight and last only a few seconds, or it may be serious and even fatal. It may come on immediately, or be delayed, coming on several hours later. It may be due to profuse bleeding, exposure to cold, or poisons taken internally. It is almost always found in individuals who have had an interruption of breathing, whatever the cause.

If the patient is not in a condition of shock, he should receive treatment to prevent the development of shock. The same measures are used to prevent shock as to treat it.

TREATMENT OF SHOCK

When the patient revives, he should be kept under close observation for 48 hours even though he apparently feels all right. He should not be permitted to exert himself in any way.

The fundamental factors in the prevention and treatment of shock are heat, position, and stimulants.

A. *Heat.*
1. Preserve body heat.
   a. Protect from exposure to cold.
   b. Remove wet clothing and dry the patient.
   c. Wrap the patient in blankets.
2. Application of external heat.
   a. Care should be used to avoid burning the patient.
      1. Test the object used for applying heat by holding against the cheek or elbow for half a minute.
      2. Wrap in a layer of cloth or paper.
   b. Methods:
      1. Hot-water bottles.
      2. Chemical heating pads.
      3. Glass jars and bottles containing hot water.
      4. Hot bricks.
      5. Electrical heating pads.
   c. To various regions.
      1. To the feet.
      2. Between the thighs.
      3. Along the sides of the body.
      4. Over the abdomen if not uncomfortable to the patient.

B. *Position.*
1. Place the body in such a position so that gravity will help the blood flow to the brain and heart.
   a. Lay the patient on his back with the head low.
      1. This can be accomplished by raising the foot of the bed, cot, bench, or litter at least 18 inches higher than the head.
      2. If on a flat surface and other means are not available, elevate the feet, legs, and thighs.

C. *Stimulants.*

Do not attempt to make an unconscious person drink. Give in small quantities at a time.
1. Aromatic spirits of ammonia—a teaspoonful in half a glass of water is one of the most satisfactory stimulants. This can be repeated every 30 minutes as needed.
2. Coffee and tea both contain the drug caffeine, which is an excellent stimulant. Give the coffee or tea as hot as can be comfortably taken. A cupful may be given every 30 minutes as needed.
3. Hot milk, or even hot water, has some stimulating effect, due to the heat.
4. An inhalation stimulant, such as an ammonia ampule or aromatic spirits of ammonia on a handkerchief, may be placed near the patient's nose in cases in which the patient is not con-

scious. The one administering the stimulant should always test it on himself first.

5. Whiskey should not usually be given.

The above article is taken from a pamphlet titled "Methods of Artificial Respiration," prepared by the Chief Medical Officer, United States Coast Guard, and published by the United States Coast Guard and may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 10 cents per copy.

KNOWLEDGE IS NO BURDEN

SAFETY ALWAYS

CARBON TETRACHLORIDE POISONING

Some workmen were recently engaged in removing heavy grease, used as a rust preventative, from a large drum. About 1 quart of carbon tetrachloride was used each hour and the removal of the grease required 2 days work. After the work had been completed one man complained of being nauseated and the other completely collapsed. One man completely recovered while the one who collapsed was taken immediately to a hospital for treatment. His symptoms were typical of those who are attacked with tetrachloride poisoning. Approximately 4 days after being admitted to the hospital, he died due to damaged liver and lungs. The drum in which the men were working was quite large and had ventilation at each end. However, no forced ventilation was provided nor did the men have any personal respiratory equipment.

Carbon tetrachloride, while being an excellent cleaning agent, is dangerous when used in confined spaces unless necessary safety precautions are taken. Experience has shown that recovery after prolonged exposure to carbon tetrachloride is possible but the percentage is very small. To those who have been drinking alcoholic beverages prior to exposure to carbon tetrachloride the chances of recovery are much less.

APPENDIX

Amendments to Regulations

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter III—Coast Guard: Inspection and Navigation

(CGFR 48–49)

MISCELLANEOUS AMENDMENTS

A notice regarding proposed changes in the inspection and navigation regulations was published in the Federal Register dated August 11, 1948 (13 F. R. 4638), and public hearings were held by the Merchant Marine Council on September 28, 1948, at Washington, D. C.

The purpose of the miscellaneous amendments is to delete from the Code of Federal Regulations those parts which paraphrase statutes and to bring other regulations regarding boundary lines of inland waters and pilot rules into agreement with Public Law 544, approved May 21, 1948, which statute becomes effective January 1, 1949. This law extended the application of the inland rules to waters which are now under the western rivers rules by providing that the inland rules of the road shall be followed by all vessels upon the harbors, rivers, and other inland waters of the United States except the Great Lakes as far east as Montreal and the waters of the Mississippi River between its source and the Huey P. Long Bridge, and all of its tributaries emptying therein and their tributaries and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway and the waters of the Mobile River above Choctaw Point and all of its tributaries and the Red River of the North. It is also necessary to change boundary lines of inland waters to bring certain waters within the application of the inland rules and to prescribe regulatory pilot rules which will implement the statutory rules of the road for the Mississippi River system which appear in Public Law 544.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by R. S. 4405, as amended, 46 U. S. C. 375 and sec. 101 of Reorganization Plan No. 3 of 1946, 11 F. R. 7875, as well as the statutes cited with the regulations below, the following amendments to the regulations are prescribed, which shall become effective on and after January 1, 1949:

PART 301—INTERNATIONAL RULES FOR PREVENTING COLLISIONS AT SEA

Part 301 is deleted. The text of the regulations in this part is statutory and is contained in 26 Stat. 320, as amended (33 U. S. C. 62, 63, 71–84, 91, 92, 101–113, 121, 131, 141, 142).

PART 302—BOUNDARY LINES OF INLAND WATERS

GENERAL

1. Section 302.2 is amended to read as follows:

302.2 *General rules for inland waters.* At all buoyed entrances from seaward to bays, sounds, rivers, or other estuaries for which specific lines are not described in this part, the waters inshore of a line approximately parallel with the general trend of the shore, drawn through the outermost buoy or other aid to navigation of any system of aids, are inland waters, and upon them the Inland Rules and pilot rules made in pursuance thereof apply, except that Pilot Rules for Western Rivers apply to the Mississippi River and its tributaries above Huey P. Long Bridge, the Mobile River and all of its tributaries above Choctaw Point, the Red River of the North, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway.

(Sec. 2, 28 Stat. 672, as amended, 33 U. S. C. 151.)

GULF COAST

2. Section 302.65 is amended to read as follows:

302.65 *San Carlos Bay and tributaries.* A line drawn from the northwesternmost point of Estero Island to Caloosa Lighted Bell Buoy 2; thence to Sanibel Island Lighthouse.

(Sec. 2, 28 Stat. 672, as amended, 33 U. S. C. 151.)

3. Section 302.75 *Peace and Miakka Rivers* is deleted.

4. Section 302.85 *Manatee and Hillsboro Rivers* is deleted.

5. Section 302.89 is amended to read as follows:

302.89 *Apalachee Bay, Fla.* Those waters lying north of a line drawn from Lighthouse Point on St. James Island to Gamble Point on the east side of the entrance to the Aucilla River, Fla.

(Sec. 2, 28 Stat. 672, as amended, 33 U. S. C. 151.)

6. Section 302.90 *Carrabelle River and Apalachicola River, Fla.*, is deleted.

7. Section 302.100 is amended to read as follows:

302.100 *Mobile and Mississippi Rivers.* Pilot Rules for Western Riv-

ers are to be followed in Mobile River and its tributaries above Choctaw Point; and also in Mississippi River and its tributaries above Huey P. Long Bridge.

(Sec. 2, 28 Stat. 672, as amended, 33 U. S. C. 151.)

PART 311—INLAND RULES OF THE ROAD

Part 311 is deleted. The text of the regulations in this part is statutory and is contained in 30 Stat. 96, as amended (33 U. S. C. 155, 156, 171–183, 191, 192, 201–213, 221, 222, 231, 232).

PART 312—PILOT RULES FOR INLAND WATERS

1. Section 312.01 is amended to read as follows:

312.01 *General Instructions.* The regulations in this part apply to vessels navigating the harbors, rivers, and inland waters of the United States, except the Great Lakes and their connecting and tributary waters as far east as Montreal, the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, Mobile River and its tributaries above Choctaw Point, and that part of the Atchafalya River above its junction with the Plaquemine-Morgan City alternate waterway.

(Sec. 2, 30 Stat. 102, 38 Stat. 381, as amended, 33 U. S. C. 157, Public Law 544, 80th Cong., 2d sess.)

2. Section 312.13 (b) is amended to read as follows:

312.13 *Speed in fog; posting of rules; diagrams.* * * *

(b) *Posting of pilot rules.* (1) On steam vessels of over 100 gross tons, two copies of the placard form of the rules (Form CG 803) in this part shall be kept posted up in conspicuous places in the vessel, one copy of which shall be kept posted up in the pilothouse.

(2) On steam vessels of over 25 gross tons and not over 100 gross tons, two copies of the placard form of the pilot rules shall be kept on board, one copy of which shall be kept posted up in the pilothouse.

(3) On steam vessels of 25 gross tons and under, and of more than 10 gross tons, two copies of the placard form of the pilot rules shall be kept on board, and, where practicable, one copy thereof shall be kept conspicuously posted up in the vessel.

(4) On steam vessels of not more than 10 gross tons, two copies of the pamphlet form of the pilot rules shall be kept on board, and, where practicable, one copy thereof shall be kept conspicuously posted up in the vessel.

(5) Nothing herein contained shall require copies of the pilot rules to be carried on board any motorboat as defined by section 1 of the act of April 25, 1940 (54 Stat. 163–167; 46 U. S. C. 526–526t).

(Sec. 2, 30 Stat. 102, 38 Stat. 381, as amended, 33 U. S. C. 157, Public Law 544, 80th Cong., 2d sess.)

3. The center heading immediately following section 312.13 is changed to read as follows:

LIGHTS FOR CERTAIN CLASSES OF VESSELS

4. Section 312.15 is amended by changing the first paragraph to read as follows:

312.15 *Ferryboats.* Ferryboats propelled by machinery and navigating the harbors, rivers, and other inland waters of the United States, except the Great Lakes and their connecting and tributary waters as far east as Montreal, the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, the Mobile River and its tributaries above Choctaw Point, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway, shall carry the range lights and the colored side lights required by law to be carried on steam vessels navigating those waters, except that double-end ferryboats shall carry a central range of clear, bright, white lights, showing all around the horizon, placed at equal altitudes forward and aft, also on the starboard side a green light, and on the port side a red light, of such a character as to be visible on a dark night with a clear atmosphere at a distance of at least 2 miles, and so constructed as to show a uniform and unbroken light over an arc of the horizon of 10 points of the compass, and so fixed as to throw the light from right ahead to 2 points abaft the beam on their respective sides.

* * * * *

(Sec. 2, 30 Stat. 102, 38 Stat. 381, as amended, 33 U. S. C. 157, Public Law 544, 80th Cong., 2d sess.)

5. Section 312.16 is amended by changing the first paragraph and the last paragraph to read as follows:

312.16 *Lights for barges, canal boats and scows in tow of steam vessels on certain inland waters on the seaboard, except the Hudson River and adjacent waters and Lake Champlain.* On the harbors, rivers, and other inland waters of the United States, except the Great Lakes and their connecting and tributary waters as far east as Montreal, the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, the Mobile River and its tributaries above Choctaw Point, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway, and except on the waters of the Hudson River and its tributaries from Troy to the boundary lines of New York Harbor off Sandy Hook as defined pursuant to section 2 of the act of Congress of February 19, 1895 as amended (28 Stat. 672; 33 U. S. C. 151), the East River, and Long Island Sound (and the waters entering thereon, and to the Atlantic Ocean), to and including Narragansett Bay, R. I., and tributaries, and Lake Champlain, barges, canal boats and scows in tow of steam vessels shall carry lights as follows:

* * *

Provided, That nothing in the rules of this section shall be construed as compelling barges or canal boats in tow of steam vessels when passing through any waters coming within the scope of any regulations where lights for barges or canal boats are different from those of the waters whereon such vessels are usually employed, to change their lights from those required on the waters from which their trip begins or terminates; but should such vessels engage in local employment on waters requiring different lights from those where they are customarily employed, they shall comply with the local rules where employed.

(Sec. 2, 30 Stat. 102, 38 Stat. 381, as amended, 33 U. S. C. 157, Public Law 544, 80th Cong., 2d sess.)

PART 321—NAVIGATION RULES FOR THE GREAT LAKES

Part 321 is deleted. The text of the regulations in this part is statutory and is contained in 28 Stat. 645, as amended (33 U. S. C. 241, 242, 251–262, 271, 272, 281–294).

PART 331—NAVIGATION RULES FOR WESTERN RIVERS

Part 331 is deleted. The text of the regulations in this part is statutory and is contained in R. S. 4233, as amended (33 U. S. C. 301, 302, 311–323, 331, 341–352).

PART 332—PILOT RULES FOR WESTERN RIVERS

Part 332 is amended to read as follows:

GENERAL

Sec.
332.01 General instructions.
332.03 Definitions.
332.05 Risk of collision.

VESSELS PASSING EACH OTHER

332.07 Vessels meetings at confluence of two rivers.
332.09 Danger and cross signals.
332.11 Narrow channels.
332.13 Approaching bridge span or draw.
332.15 Ascending, descending steamers crossing river.
332.17 Overtaking situation.
332.19 Passing signals.
332.21 Visual signals.
332.23 Posting of pilot rules.
332.25 Diagrams.

LIGHTS FOR FERRYBOATS AND BARGES

332.27 Lights for ferryboats.
332.29 Lights for barges towed ahead or alongside.
332.31 Lights for barges towed astern.
332.33 Lights for barges temporarily operating within or without Western Rivers.
332.35 Lights for barges at bank.

LIGHTS FOR RAFTS AND OTHER CRAFT NOT PROVIDED FOR

332.37 Lights for rafts and other craft.

DISTRESS SIGNALS

332.39 Distress signals.

UNAUTHORIZED USE OF LIGHTS; UNNECESSARY WHISTLING

332.41 Rule relating to the use of searchlights or other blinding lights.
332.43 Rule prohibiting unnecessary sounding of the whistle.
332.45 Rule prohibiting the carrying of unauthorized lights on vessels.

AUTHORITY: Sections 332.01 to 332.43, inclusive, issued under R. S. 4233A, Public Law 544, 80th Congress, 2d session.

NOTE.—The Pilot Rules in this part will be in effect on and after January 1, 1949, when the provisions of Public Law 544, 80th Congress, 2d Session, become effective. The provisions of the statute and these Pilot Rules are also published in a separate pamphlet entitled "Pilot Rules for Western Rivers" and may be obtained upon request from the Commandant (HA), U. S. Coast Guard, Washington 25, D. C., in December 1948.

GENERAL

332.01 *General instructions.* The regulations in this part apply to vessels navigating the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, the Mobile River and its tributaries above Choctaw Point, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway.

332.03 *Definitions.* (a) In this part the words "steam vessel" or "steamer" shall include any vessel propelled by machinery; and the word "barge" shall include barge, canal boat, scow, and any other vessel of nondescript type not otherwise provided for herein.

(b) The phrase "Western Rivers" shall include only the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, the Mobile River and its tributaries above Choctaw Point, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway.

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

332.07 *Vessels meeting at confluence of two rivers.* When two steam vessels meet at the confluence of two rivers, the steam vessel which has the other to port shall give the first signal; but in no case shall pilots on steam vessels attempt to pass each other until there has been a thorough understanding as to the side each steam vessel shall take.

332.09 *Danger and cross signals.* (a) The alarm or danger signal shall consist of four or more short and rapid blasts. Steam vessels are forbidden to use what has become technically known among pilots as "cross signals," that is, answering one whistle with two, and answering two whistles with one. In all cases and under all circumstances, a pilot receiving either of the whistle signals provided in the rules in this part with which, for any reason, he deems it injudicious to comply, instead of answering it with a cross signal, shall at once observe the provisions of this section.

(b) The pilot of any steam vessel shall sound the alarm or danger signal whenever required by the law, or any of the regulations hereinafter contained; that is to say, as follows:

(1) Whenever it is dangerous to take the side indicated by the passing signal of another vessel; or,

(2) Whenever any steam vessel does not understand or is in doubt regarding the signal of another steam vessel; or,

(3) Whenever, from any cause, one steam vessel is imperiled by another.

332.11 *Narrow channels.* When two steam vessels are about to enter a narrow channel at the same time, the ascending steam vessel shall be stopped below such channel until the descending steam vessel shall have passed through it; but should two steam vessels unavoidably meet in such narrow channel, then it shall be the duty of the pilot of the ascending steam vessel to make the proper signals, and when answered, the ascending steam vessel shall lie as close as possible to the side of the channel and either stop the engines or move them so as to give the boat only steerageway; and the pilot of the descending steam vessel shall cause his steam vessel to be worked slowly until he has passed the ascending steam vessel.

332.13 *Approaching bridge span or draw.* (a) When two steam vessels are approaching a bridge span or draw from opposite directions and the passing signals have been given and understood, should the pilot of the descending steam vessel deem it dangerous for the steam vessels to pass each other between the piers of such span or draw, he shall sound the alarm or danger signal, and it shall then be the duty of the pilot of the ascending steam vessel to answer with a similar alarm signal, and to slow or stop his engines below such span or draw until the descending steam vessel shall have passed.

(b) If the ascending steam vessel is already in the bridge span or draw, and the ascending steam vessel sounds the danger or alarm signal, it shall be the duty of the ascending steam vessel, if practicable, to drop below the bridge span or draw, and wait until the other steam vessel shall have passed.

332.15 *Ascending, descending steam vessels crossing river.* The pilot of an ascending steam vessel shall in no case attempt to cross the river when an ascending or descending steam vessel shall be so near that it would be possible for a collision to ensue therefrom; and conversely, the pilot of a descending steam vessel shall in no case attempt to cross the river when an ascending or descending steam vessel shall be so near that it would be possible for a collision to ensue therefrom.

332.17 *Overtaking situation.* When two steam vessels are in the overtaking situation, it is the duty of the steam vessel being overtaken to answer immediately a passing signal of the overtaking steam vessel, either by assenting with the same number of blasts or by dissenting with the danger signal.

332.19 *Passing signals.* The passing signals, by the blowing of the whistle, shall be given and answered by pilots, in all weathers, when approaching each other; and, wherever possible, the signals shall be given and answered before the steam vessels, or if towboats pushing tows, the head of such tows, have arrived at a distance of half a mile of each other.

332.21 *Visual signal.* All whistle signals shall be further indicated by a visual signal consisting of an amber colored light so located as to be visible all around the horizon for a distance of not less than one mile. This light shall be so devised that it will operate simultaneously and in conjunction with the whistle sounding mechanism, and remain ignited or visible during the same period as the sound signal: *Provided*, That the installation, use, or employment of the amber visual signal required by this section shall be optional in the case of (a) vessels operating upon the Gulf Intracoastal Waterway; (b) vessels operating on the Mississippi River below mile 237 AHP (Belmont Landing) as set forth in map No. 40, "Maps of the Mississippi River, Cairo, Illinois, to the Gulf of Mexico, Louisiana (1944 ed.)," published by the Mississippi River Commission; (c) newly constructed vessels while en route from point of construction to a point in waters where the aforementioned amber visual signal is not required; (d) motorboats of class A and class 1; and

(e) motorboats of class 2 and class 3 not engaged in trade or commerce.

332.23 *Posting of Pilot Rules.* (a) On steam vessels of over 100 gross tons two copies of the placard form of the rules in this part (Form CG 805) shal be kept posted up in conspicuous places in the vessel, one copy of which shall be kept posted up in the pilothouse.

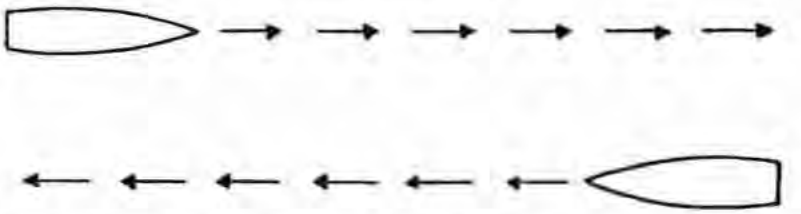
(b) On steam vessels of over 25 gross tons and not over 100 gross tons, two copies of the placard form of pilot rules shall be kept on board, one copy of which shall be kept posted up in the pilothouse.

(c) On steam vessels of 25 gross tons and under, and of more than 10 gross tons, two copies of the placard form of the pilot rules shall be kept on board, and where practicable one copy thereof shall be kept conspicuously posted up in the vessel.

(d) On steam vessels of not more than 10 gross tons, two copies of the pamphlet form of the pilot rules shall be kept on board, and where practicable one copy thereof shall be kept conspicuously posted up in the vessel.

(e) Nothing herein contained shall require copies of the Pilot Rules to be carried on board any motorboat as defined by section 1 of the Act of April 25, 1940 (54 Stat. 163–167; 46 U. S. C. 526–526t).

THIRD SITUATION



In this situation the green light only will be visible to each. They are therefore passing to starboard of each other; however, the vessels shall pass each other on the side determined by the descending steam vessel.

FOURTH SITUATION

In this situation one steam vessel is overtaking another steam vessel from some point within the angle of two points abaft the beam of the overtaken steam vessel. The overtaking steam vessel may pass on the starboard or port side of the steam vessel ahead after the necessary signals for passing have been given, with assent of the overtaken steam vessel, as prescribed in Rule 22 in R. S. 4233.

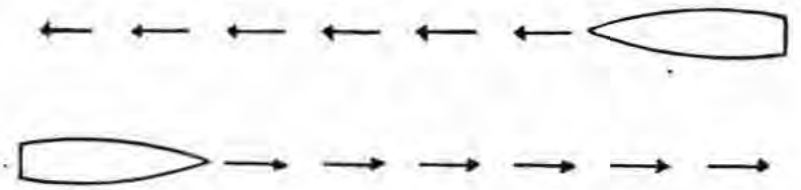
(See top of page 176 for Fifth Situation)

332.25 *Diagrams.* The following diagrams are intended to illustrate the working of the system of colored lights and the pilot rules:

FIRST SITUATION

Here the two colored lights visible to each will indicate their meeting end on, or nearly end on, so as to involve risk of collision. In this situation it is a standing rule that both shall direct their courses to starboard and pass on the port side of each other, each having previously given one blast of the whistle, except that when an ascending steam vessel is approaching a descending steam vessel the descending steam vessel has the right of way and the vessels shall pass each other on the side determined by the descending steam vessel. The necessary signals for passing shall be given as provided in Rule 18 in R. S. 4233.

SECOND SITUATION



In this situation the red light only will be visible to each. Both vessels are evidently passing to port of each other; however, the vessels shall pass each other on the side determined by the descending steam vessel.

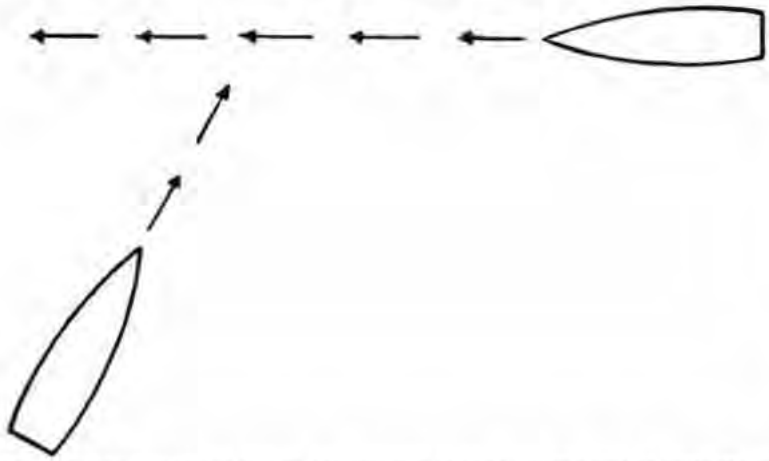
LIGHTS FOR FERRYBOATS AND BARGES

332.27 *Lights for ferryboats.* (a) The signal lights on ferryboats shall be the same as those of similar steamboats, except that double-end ferryboats shall carry a central range of clear, bright, white lights, showing all around the horizon, placed at equal altitudes forward and aft, also on the starboard side a green light, and on the port side a red light, of such character as to be visible on a dark night with a clear atmosphere at a distance of at least 3 miles, and so constructed as to show a uniform and unbroken light over an arc of the horizon of 10 points of the compass, and so fixed as to throw the light from right ahead to 2 points abaft the beam on their respective sides.

(b) The green and red lights shall be fitted with inboard screens projecting at least 3 feet forward from the lights, so as to prevent them from being seen more than half a point across the bow.

(c) Officers in Charge, Marine Inspection, in districts having ferryboats shall, whenever the safety of navigation may require, designate for each line of such boats a certain light, white or colored, which shall show all around the horizon, to designate and distinguish such lines from each other, which light shall be carried on a flagstaff amidships 15 feet above the white range lights.

FIFTH SITUATION



In this situation two steam vessels are crossing so as to involve risk of collision, other than where one steam vessel is overtaking another. The steam vessel which has the other to starboard shall keep out of the way of the other. Either vessel shall give one distinct blast of her whistle, as a signal of her intention, which the other vessel shall answer with a similar blast. However, a steam vessel with tow descending a river shall be deemed to have the right-of-way over any steam vessel crossing the river.

332.29 *Lights for barges towed ahead or alongside.* (a) When one or more barges is towed by pushing ahead of a steam vessel such tow shall be lighted by an amber light at the extreme forward end of the tow and at the centerline of the tow, or as near the centerline as it is practicable to carry such light; a green light on the starboard side and a red light on the port side, so placed that they mark the tow at its maximum projection to starboard and port, respectively. When a barge is towed alongside a steam vessel on the starboard side, such barge shall have a green light on the starboard bow; if towed alongside on the port side, a red light on the port bow. When barges are towed on either side of a steam vessel two or more abreast, the outboard barges only shall carry the appropriate side light.

(b) The colored side lights referred to in paragraph (a) must be fitted with inboard screens so as to prevent them from being seen more than half-a-point across the bow, of such a character as to be visible on a dark night with a clear atmosphere at a distance of at least three miles; so constructed as to show a uniform and unbroken light over an arc of the horizon of ten points of the compass, and so fixed as to throw the light from right ahead to two points abaft the beam on either side. The amber light shall be screened so as not to be visible more than two points abaft the beam and shall likewise be visible at least three miles. All of these lights shall be carried at least eight feet above the surface of the water and at approximately the same height.

332.31 *Lights for barges towed astern.* Barges being towed singly or in tandem on a hawser behind steam vessels shall carry a white light at each end of each barge. When barges are towed in tiers two or more abreast, each of the outside boats shall carry a white light on its outer bow, and the outside boats in the last tier shall each carry, in addition, a white light on the outer part of the stern. The lights shall be carried not less than eight feet above the surface of the water, and so as to show all around the horizon.

332.33 *Lights for barges temporarily operating within or without Western Rivers.* Nothing in sections 332.29 and 332.31 shall be construed as compelling barges being towed, when passing through any waters coming within the scope of any regulations where lights for barges are different from those of the waters whereon such barges are usually employed, to change their lights from those required on the waters from which their trip begins or terminates; but should such barges engage in local employment on waters requiring different lights from those where they are customarily employed, they shall comply with the local rules where employed. (Sec. 2, 30 Stat. 102, 38 Stat. 381, as amended, 33 U. S. C. 157)

332.35 *Lights for barges at bank.* Barges moored to the bank or dock in or near a fairway shall carry two white lights not less than 4 feet above the surface of the water, as follows: on a single moored barge a light at each outboard or channelward corner; on barges moored in group formation, a light on the upstream outboard or channelward corner of the outer upstream barge, and a light on the downstream outboard or channelward corner of the outer downstream barge. In addition any barge projecting toward or into the channel from such group formation shall have two white lights similarly placed on the outboard or channelward corners of the barge.

LIGHTS FOR RAFTS AND OTHER CRAFT NOT PROVIDED FOR

332.37 *Lights for rafts and other craft.* (a) All watercraft, except as herein otherwise provided, navigating any bay, harbor, or river, propelled by hand power, horsepower, or by the current of the river, or which shall be anchored or moored in or near the channel or fairway of any bay, harbor, or river, shall carry one white light forward, not less than 8 feet above the surface of the water.

(b) Rafts propelled by hand power or by the current of the river, or which shall be anchored or moored in or near a channel or fairway, shall carry white lights, as follows:

(1) Rafts of one crib and not more than two in length shall carry one white light. Rafts of three or more cribs in length and one crib in width shall carry one white light at each end of the raft.

(2) Rafts of more than one crib abreast shall carry one white light on each outside corner of the raft, making four lights in all.

(c) The white light required by this section for rafts and other watercraft shall be carried from sunset to sunrise, in a lantern so fixed and constructed as to show a clear uniform, and unbroken light, visible all around the horizon, and of such intensity as to be visible on a dark night with a clear atmosphere at a distance of at least 1 mile. The lights for rafts shall be suspended from poles of such height that the light shall not be less than 8 feet above the surface of the water.

(d) Rowing boats under oars shall have ready at hand a lantern showing a white light which shall be temporarily exhibited in sufficient time to prevent collision.

DISTRESS SIGNALS

332.39 *Distress signals.*—(a). *In the daytime.* (1) A gun fired at intervals of about a minute.

(2) The International Code signal of distress indicated by N, C.

(3) The distant signal, consisting of a square flag, having either above or below it a ball or anything resembling a ball.

(4) Rockets or shells as prescribed below for use at night.

(5) A continuous sounding with a steam whistle or any fog-signal apparatus.

(b) *At night.* (1) A gun fired at intervals of about a minute.

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

(3) Rockets or shells, bursting in the air with a loud report and throwing stars of any color or description, fired one at a time at short intervals.

(4) A continuous sounding with a steam whistle or any fog-signal apparatus.

UNAUTHORIZED USE OF LIGHTS; UNNECESSARY WHISTLING

332.41 *Rule relating to the use of searchlights or other blinding lights.* Flashing the rays of a searchlight or other blinding light onto the bridge or into the pilothouse of any vessel under way is prohibited. Any person who shall flash or cause to be flashed the rays of a blinding light in violation of the above may be proceeded against in accordance with the provisions of section 4450, R. S., as amended, looking to the revocation or suspension of his license or certificate.

332.43 *Rule prohibiting unnecessary sounding of the whistle.* Unnecessary sounding of the whistle is prohibited within any harbor limits of the United States. Whenever any licensed officer in charge of any vessel shall authorize or permit such unnecessary whistling, such officer may be proceeded against in accordance with the provisions of section 4450, R. S., as amended, looking to a revocation or suspension of his license.

332.45 *Rule prohibiting the carrying of unauthorized lights on vessels.* Any master or pilot of any vessel who shall authorize or permit the carrying of any light, electric or otherwise, not required by law, that in any way will interfere with distinguishing the signal lights, may be proceeded against in accordance with the provisions of section 4450, R. S., as amended, looking to a revocation or suspension of his license.

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 5–48

UNITED STATES COAST GUARD,
Washington 25, D. C., May 24, 1948.

Motorboats rented by launch liveries for pleasure purposes; safety requirements

1. The attention of the owners and operators of all launch liveries is directed to the provisions of the Motorboat Act of April 25, 1940 (46 U. S. C. 526–526t), which require certain equipment for motorboats. The safety equipment of motorboats, including those propelled by outboard motors, is required whenever such boats are being navigated on the navigable waters of the United States. These requirements are published by the Coast Guard in a pamphlet entitled "Motorboat Regulations" (46 CFR, Subchapter C, Parts 25 to 28, inclusive) and in Navigation and Vessel Inspection Circular No. 9–47. Copies of this circular may be obtained from any Coast Guard District Commander or Officer in Charge, Marine Inspection, upon request.

2. Many launch liveries have been renting motorboats, including those propelled by outboard motors, to persons not familiar with safety requirements required by the Motorboat Act and the regulations promulgated thereunder. In many cases where a deposit for the safe return of lifesaving and other equipment required has been demanded, the renter of the boat has objected and in certain instances the motorboats have been operated without the safety equipment required so that persons on board such vessels were without protection in case of emergency.

3. Particular attention is invited to the provisions of section 16 of the Motorboat Act (46 U. S. C. 5260) which reads as follows:

"SEC. 16. If any motorboat or vessel subject to any of the provisions of this Act is operated or navigated in violation of this Act or any regulation issued thereunder, the owner or operator, either one or both of them, shall, in addition to any other penalty prescribed by law than that contained in section 14 of this Act, be liable to a penalty of $100: *Provided*, That in the case of motorboats or vessels subject to the provisions of this Act carrying passengers for hire, a penalty of $200 shall be imposed on the owner or operator, either one or both of them, thereof for any violation of section 6, 7, or 8 of this Act or of any regulations pertaining thereto. For any penalty incurred under this section the motorboat or vessel shall be held liable and may be proceeded against by way of libel in the district court of any district in which said motorboat or vessel may be found."

4. It will be observed from reading the above provision of law that certain responsibilities are placed on the owners of motorboats to see that the proper safety equipment is on board. Motorboats, including those propelled by outboard motors, must be equipped with proper life preservers or lifesaving devices. Fire extinguishers are not required for boats equipped with outboard motors. These safety devices together with fire extinguishers, lights, and other equipment, are required by the Motorboat Act and the regulations promulgated thereunder.

5. Motorboat owners, operators, and other persons affected by the Motorboat Laws and Regulations should familiarize themselves with these requirements. To this end, Coast Guard personnel concerned with the administration and enforcement of these laws and regulations will extend every possible assistance.

(S) MERLIN O'NEILL,
Rear Admiral, U. S. Coast Guard,
Acting Commandant.

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 6–48

UNITED STATES COAST GUARD,
June 28, 1948.

Closing Appliances in Scuppers, Sanitary Discharges, Etc.

1. The Coast Guard regulations contain requirements in numerous sections as to the types of valves, covers, and other closing appliances for the various discharges which penetrate the hull of a vessel.

2. It is apparent that confusion exists as to the proper type of closing devices to be used, and accordingly, the attached explanatory matter and sketches[1] have been prepared to provide a simplified reference to the regulations involved and to illustrate how these regulations, as well as certain accepted practices, are applied to the arrangements most frequently encountered on merchant vessels subject to Coast Guard law enforcement.

3. It is obviously impossible to anticipate all of the special cases which might occur. Installations made in accordance with the attached explanatory matter and sketches will be approved as meeting the Coast Guard requirements; however, approval also will be given in specific instances where methods, other than those illustrated, are proposed provided the proposal meets the applicable requirements of the regulations.

4. This circular is not to be construed as establishing new regulations or amending existing regulations. It is merely for the guidance of all Coast Guard personnel engaged in the enforcement of the basic statutes governing the subject matter. It is not to be construed as establishing its observations and suggestions as mandatory requirements.

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

[1] Due to limitation of space, the explanatory matter and sketches are not reproduced herein but may be obtained by request from the Commandant, (MMT) U. S. Coast Guard, Headquarters, Washington 25, D. C.

Navigation and Vessel Inspection Circular No. 7–48

UNITED STATES COAST GUARD,
Washington 25, D. C.,
August 6, 1948.

ARC WELDING ELECTRODES—MARKING, CURRENT, POLARITY, AND APPLICATION—MILD STEEL AND MOLYBDENUM ALLOY STEEL

1. The classification, current, and polarity, to be employed for covered arc welding electrodes acceptable for use in the fabrication and repair of hull structure, machinery, pressure vessels, piping, valves, pipe fittings, and equipment of merchant vessels subject to Coast Guard inspection are described in the enclosed table. The table covers two general classifications of electrodes, namely, E60XX series representing mild carbon steel, and E70XX series representing molybdenum alloy steel. In addition to the current and polarity specified for each type of electrode the table indicates the restrictions which are placed on the use of certain types of electrodes for fabrication and repair of certain types of ship's structure and equipment subject to inspection.

2. The notes following the table describe the acceptable operating procedure for the electrodes listed. It is to be noted that the table as well as section 56.01–20, subchapter F, prohibits the use of certain types of electrodes in the welding of pressure vessels, piping, and other pressure containing appurtenances. Attention is also directed to the fact that the table does not permit the use of electrode types E6012 and E6013 on ships' hulls in the fabrication or repair of any joint of the shell strength deck, tank top, strength bulkheads or longitudinal strength members. The foregoing types of electrodes also are not suitable for the welding of galvanized material. E6012 and E6013 electrodes may be used in the welding of lifeboats, joiner bulkheads, and elsewhere under the imposed limitations where welds of high ductility and high impact resistance are not required. The symbols appearing in the table are explained in the notes immediately following the table.

3. A list of arc welding electrodes covering various manufacturers' electrode designations which are acceptable together with approved operating positions and sizes, is published in the Coast Guard Equipment Lists for Merchant Vessels, CG–190.

Table of Acceptable Arc Welding Electrodes

(See notes and explanation of symbols at end of article)

AWS–ASTM classification No.	Color marking		CURRENT AND POLARITY	Application		
	End or primary	Spot or secondary		Hull structure	Pressure vessels and piping	Light gage material
E6010	None	None	D.C. reversed polarity (electrode positive)	Yes	Yes	Yes.
E6010	None	Orange	(1)	Yes	Yes	Yes.
E6011	None	Blue	A.C. and D.C. reversed polarity (electrode positive).	Yes	Yes	Yes.
E6012	None	White	A.C. and D.C. straight polarity (electrode negative).	No	No	Yes.
E6013	None	Brown	A.C. and D.C. straight polarity (electrode negative).	No	No	Yes.
E6020	Blue	None	D.C. straight polarity (electrode negative) and A.C. for horizontal fillet welds. D.C. either polarities and A.C. for flat position welding.	Yes	Yes	NR.
E6030	White	None	A.C. and D.C. either polarity	Yes	Yes	NR.
E7010	None	Green	D.C. reversed polarity (electrode positive)	Yes	Yes [2]	NR.
E7011	None	Red	A.C. and D.C. reversed polarity (electrode positive).	Yes	Yes [2]	NR.
E7020	Blue	Green	D.C. straight polarity (electrode negative) and A.C. for horizontal fillet welds; D.C. either polarity and A.C. for flat position welding.	Yes	Yes [2]	NR.
E7030	White	Green	A.C. and D.C., either polarity	Yes	Yes [2]	NR.

NOTES ON OPERATING CONDITIONS

[1] This electrode has heavier than standard coating and does not operate satisfactorily in the vertical and overhead positions.

[2] E70XX series molybdenum alloy electrodes shall be used in the welding of molybdenum alloy plates, shapes, or piping. The E60XX series electrodes are not satisfactory.

Symbols and definitions:
A.C. = Alternating current.
D.C. = Direct current.
NR = Not recommended.

CERTIFICATION OF ARTICLES OF SHIPS' STORES AND SUPPLIES

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

Tuttle Burton Chemical Corp., 1 Broadway, New York 4, N. Y. Certification No. 257, dated September 7, 1948. Burco No. 40.

Tuttle Burton Chemical Corp., 1 Broadway, New York 4, N. Y. Certification No. 258, dated September 7, 1948. Burcolene.

Tuttle Burton Chemical Corp., 1 Broadway, New York 4, N. Y. Certification No. 259, dated September 7, 1948. Burconite.

HEARING UNITS

Coast Guard Merchant Marine investigating units and Merchant Marine details investigated a total of 645 cases during the month of July 1948. Of this number charges were preferred involving 16 licensed and 36 unlicensed men. No hearings were held because examiners were not available.

AFFIDAVITS

The following affidavits were accepted during the period August 16 to September 15, 1948:

Malcolm Foundry Co., Inc., Newark, N. J. Castings.

Columbia Machine Works, Seventh and Carlton Streets, Berkeley 2, Calif. Pipe fittings.

Equipment Approved by the Commandant

DEPARTMENT OF THE TREASURY

United States Coast Guard

[CGFR 48–42]

APPROVAL OF EQUIPMENT

Correction

In Federal Register Document 48–7724, appearing at page 5026 of the issue for Saturday, August 28, 1948, the second paragraph under "Safety Valves" should read:

Approval No. 162.001/88/0, Series 70E, cast-iron body pop safety valve, exposed spring, expanded outlet, maximum working pressure 30 p. s. i., maximum temperature 450° F., limited to installation on heating boilers and evaporators, not permitted on power boilers, Dwg. No. P–20120, approved for sizes 1½", 2", 2½", 3", and 4", manufactured by Marine and Industrial Products Co., 1526 Vine Street, Philadelphia 2, Pa.

[13 F. R. 5218, September 8, 1948]

Merchant Marine Personnel Statistics

MERCHANT MARINE LICENSES ISSUED DURING AUGUST 1948

DECK OFFICERS

REGION	Master										Chief mate										Second mate									
	Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	36	97	6	12			10	57	1	1	34	14		2				3			37	23								
Gulf coast	14	20	4	3				6	1	7	18	2								2	15	6								
Great Lakes and rivers		2		1	1	9			4	11		1		1					8	9		1								
Pacific coast	17	57		5				15	1	1	13	5		1							11	7								
Total	67	176	10	21	1	9	10	78	7	20	65	22		4				3	8	11	63	37								

REGION	Third mate										Pilots						Master mate				Total		
	Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Great Lakes		B. S. & L.		Rivers		Uninspected vessels, high seas				Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	12	27											76	127			1				213	363	576
Gulf coast	4	3									1		17	16	2	8					76	73	149
Great Lakes and rivers		7									7	15	1	2	30	13					51	72	123
Pacific coast	6	9											16	49	2		6		1		73	149	222
Total	22	46									8	15	110	194	34	21	7		1		413	657	1,070

ENGINEER OFFICERS

REGION	Chief engineer, steam				First assistant engineer, steam				Second assistant engineer, steam				Third assistant engineer, steam				Chief engineer, motor			
	Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Unlimited		Limited	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	17	116	3	35	25	23	3	3	26	32	1		15	35			3	21	14	28
Gulf coast	9	36	2	7	7	6		1	12	4			3	13			2	12	3	5
Great Lakes and rivers	1	14	5	39	1	5	2	8	3	3	2	3		3			1	6	3	5
Pacific coast	14	53		8	12	22		4	13	20			18	13			1	14	8	13
Total	41	219	10	89	45	56	5	16	54	59	3	3	36	64			7	53	28	51

REGION	First assistant engineer, motor				Second assistant engineer, motor				Third assistant engineer, motor				Uninspected vessels				Totals		
	Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Chief engineer		Assistant engineer		Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	1	2	5		5	1			1	27							119	323	442
Gulf coast	1		1				1		1	5	1						43	89	132
Great Lakes and rivers		1	1					2		2	2						21	91	112
Pacific coast					1	1			15	13			3		2		87	161	248
Total	2	3	7		6	2	1	2	17	47	3		3		2		270	664	934

ORIGINAL SEAMEN'S DOCUMENTS, ISSUED MONTH OF AUGUST 1948

REGION	(1) Staff officer	(2) Continuous discharge book	(3) U.S. merchant mariner's documents	(4) AB any waters unlimited	(5) AB any waters 12 months	(6) AB Great Lakes 18 months	(7) AB tugs and towboats any waters	(8) AB bays and sounds [1]	(9) AB seagoing barges	(10) Lifeboatman	(11) Q.M. E.D.	(12) Radio operators	(13) Certificate of service	(14) Tankerman
Atlantic coast	11	2	944	517	276	27	1	1	0	732	232	15	769	9
Gulf coast	11	11	320	212	83	11	0	0	0	248	125	2	261	25
Pacific coast	24	1	547	180	88	2	0	1	0	491	102	10	431	3
Great Lakes and rivers	3	3	1,087	26	139	66	0	0	0	174	101	0	1,027	17
Total	49	17	2,898	935	586	106	1	2	0	1,645	560	27	2,488	54

[1] 12 months, vessels 500 gross tons or under not carrying passengers.

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

WAIVERS OF MANNING REQUIREMENTS FROM AUG. 1 TO 31, 1948

REGION	Number of vessels	Deck officers substituted for higher ratings	Engineer officers substituted for higher ratings	Able seamen substituted for deck officers	Ordinary seamen substituted for able seamen	Qualified members of engine department substituted for engineer officers	Wipers or coal passers substituted for qualified members of engine department	Wipers, coal passers or cadets substituted for engineer officers	Ordinary seamen or cadets substituted for deck officers	Total
Atlantic coast	72		8	1	93	1	35			138
Gulf coast	18		2		15		10			27
Pacific coast	6				2	1	3			6
Great Lakes	10		1		6		12			19
Total	106		11	1	116	2	60			190

NOTE.—In addition, individual waivers were granted to permit the employment of 44 able seamen holding certificates for "any waters—12 months" in excess of the 50 percent authorized by general waiver.

CREW SHORTAGE REPORTS FROM AUG. 1 TO 31, 1948

REGION	Number of vessels	Ratings in which shortages occurred												Total
		Chief mate	Second mate	Third mate	Radio	Able seamen	Ordinary seamen	Chief engineer	First engineer	Second engineer	Third engineer	Qualified member engine department	Wiper or coal passer	
Atlantic coast	9					4	1					4	4	13
Gulf coast	1		1											1
Pacific coast														
Great Lakes	237	2	7	33		68	9		6	21	44	136	23	349
Total	247	2	8	33		72	10		6	21	44	140	27	363

Distribution (SDL 35):

A: a, b, c (2 ea.); remainder (1 ea.).
B: c (14 ea.); g, 1 (5 ea.); e, f, h (3 ea.); d (2 ea.); remainder (1 ea.).
C: All (1 ea.).
D: All (1 ea.).
List 141M.

U. S. GOVERNMENT PRINTING OFFICE: 1948