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MERCHANT MARINE COUNCIL

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Mention of source will be appreciated.

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Cover Picture: *Robbins Reef Lighthouse* stands on the west side of the main channel to Manhattan docks. It is a familiar sight to thousands riding the ferries between Staten Island and New York.

Distribution (SDL 38):
A: a, b, c, d (2 ea.); remainder (1 ea.).
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E: m (1 ea.).
List 141M.

CLEANING EXTERNAL BOILER HEATING SURFACES[1]

Water-washing method

Profitable operation of all classes of merchant vessels requires that they be kept in the continuous service for which they were designed and that their operating costs be reduced to a minimum, consistent with safe and efficient operation. Many vessels today operate from 1 year's annual inspection to the next with comparatively little available outage time. On some vessels, such as tankers, the loading and discharging times are so brief as to afford little opportunity for shutting down the boiler plant for even a perfunctory periodic check-up. In addition, the port pumping and heating load on these vessels is very heavy; thus often imposing an additional restriction on the availability of the boiler plant for inspection and cleaning.

Under normal operating conditions, the soot-blowing equipment installed is designed to keep the boiler reasonably free of soot deposits, provided this equipment is kept in good mechanical condition, and provided it is used periodically in accordance with recommended instructions. This mechanical soot-blowing should, of course, be supplemented by air or steam-lancing when necessary, as indicated by periodic visual inspections of the heating surfaces. It is particularly important to check economizers and air heaters for soot collections, and to keep these surfaces free from such accumulations.

In certain operations, the use of fuel oils having a high ash content cannot be avoided. It is obvious that the use of this high ash content oil over any extended time interval will result in more severe cleaning problems than would normally be the case. In addition, the chemical and physical characteristics of the ash in the bunker oils in general use vary over wide ranges. This is particularly true with regard to the softening or melting point of the ash and the slag. With low ash-fusion temperatures, the ash deposit tends to become very "tacky" and adheres easily to the metal heat-transfer surfaces. This is particularly true of any interdeck superheater.

In consequence, then, the superheater surface is the section which generally requires the most attention from the standpoint of both the accumulation of slag and the difficulty of removing it once it has taken hold.

Slagged up or plugged superheater lanes have a number of definitely deleterious effects on boiler performance and life, which may be summarized as follows:

1. A marked increase in the air pressure required at the double front.

[1] Reprinted from Marine Engineering and Shipping Review, March 1947.

2. The boilers cannot be operated at high rates unless sufficient excess fan pressure is available to take care of the increased resistance to gas flow through a plugged or partially plugged superheater.

3. "Laning" effects will result. This causes high gas velocities in the open gas lanes and may mean overheating of the tubes.

4. Inefficient operation of the entire plant results both from improper temperature distribution and poor combustion efficiency in the boiler itself, as well as from materially lowered steam temperature to the main engine from the superheater outlet.

5. Gases must bypass around, under, or over the superheater and can easily burn out heater protection plates, drum protection plates, support plates, and soot-blower bearings and elements as a result of a so-called "torching" or high-velocity action.

In practice it has been found that if boiler-heating surfaces are thoroughly cleaned down to fireside bare metal once or twice a year, routine soot-blowing and hand-lancing will keep the surfaces in a generally satisfactory condition. It is with the procedure for this thorough annual or semiannual cleaning that this article is concerned.

Water washing is a cleaning process developed of a necessity during the last war. Due to the shortage of bottoms, as well as to the necessity for sustained full power operation, some means had to be developed to keep every available ship in the best and most efficient condition possible for the longest period of time and with the shortest outage periods. Water washing solved this cleaning problem, although the effect of water on brickwork and insulation was not too well known at that time.

During the last 6 years, experience in hundreds of water washings has definitely established that if certain basic precautions are observed, the damage to brickwork, insulation, and other fireside boiler parts is so negligible as to make water washing, with its resultant cleaned heating surfaces and highly efficient operation a "must" for those units where uninterrupted service is desired.

Since nearly all of the slag formed in a boiler tube bank consists essentially of a nonsoluble base bonded by a relatively water-soluble binder, the use of water under pressure accomplishes the dual purpose of (*a*) loosening the binder, and (*b*) flushing away the loosened insoluble residue. Essentially then, water washing consists of the following steps:

1. Supplying fresh water at a tempertaure of approximately 150° F.
2. Delivering the hot water to a lance at pressures between 200 and 250 pounds per square inch.
3. Directing the lance into the slagged section so as to most expeditiously remove the accumulations.
4. Drying up the unit.

The following is pertinent to these four steps:

Temperature of water

It has been found that the hotter the water, the faster and better the desired results can be obtained. However, water above 150° to 160° F. is generally too hot to handle in the manner required; while water at about 130° F. prolongs the work and does not result in as satisfactory a cleaning job. The direct-contact or deaerating-type heater may often be used to an advantage as a source for the hot water supply.

Operating pressures and lance details

Various available pumps can be used for supplying the pressure required. A relatively high pressure, 200 to 250 pounds per square inch, must be maintained. In order to obtain the desired effect, the jets must penetrate into the banks and impinge with force on the slag accumulations. The auxiliary feed pump can often be used advantageously for this purpose if the main feed pump is in service supplying the boilers with feed water.

A 1- to 2-inch diameter steam hose, preferably wirebound, is ideal for carrying the water from the pump to the nozzle.

The lance or nozzle itself is usually made up from odd lengths of ¼-inch pipe. From one to five 3/16-inch or ¼-inch holes should be drilled along the pipe near the terminal or capped end. At times it may be more conventient in reaching certain areas to drill only the end pipe cap at the desired angle so that the spray is directed out the end of the pipe to reach those points. The type of nozzle and the number of holes together with their angles are largely determined by a study of each individual case. In addition several types of nozzles may be required for any one boiler. However, since the only equipment needed is sections of ¼-inch pipe, caps and a 3/16-inch or ¼-inch drill, each operator may best determine for himself the set-up that is most suited to his individual needs.

Lancing sequence

Water washing should start at the top of any boiler unit and systematically work down to the furnace rows. Water dripping down from an air heater or economizer through the tube banks tends to soften the slag accumulations in the areas below those being washed, thus making the cleaning job faster and easier when those lower areas are reached. Regardless of where washing is started, everything below that section must be thoroughly washed in order to prevent the possibility of external corrosion.

Drying

The unit must be dried out upon completion of the washing procedure. No water-washing procedure should ever be started unless or until it is possible to dry out the unit immedi-

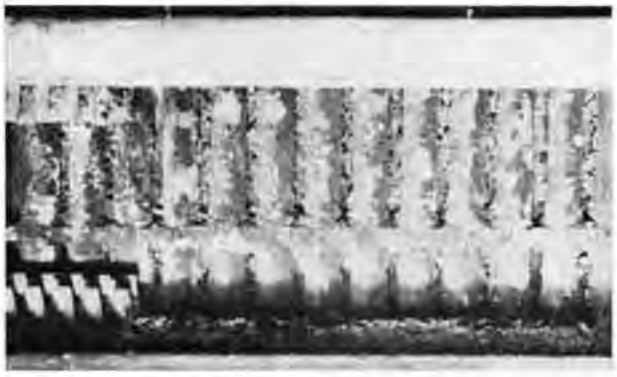

FIGURE 1.—Tube bank before typical water-cleaning operation.

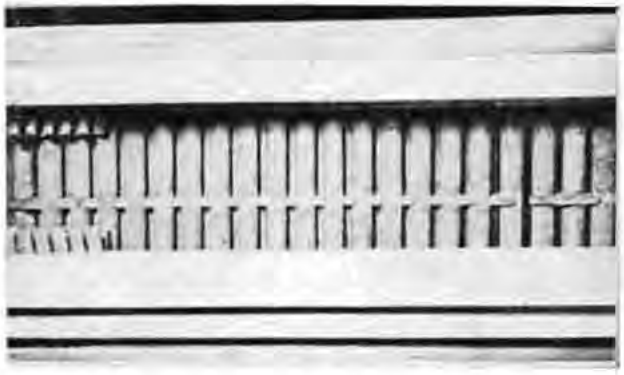

FIGURE 2.—Same tube bank after being cleaned by water-washing method.

ately following completion of the washing procedure.

A question and answer summary is given as follows:

Q. Will water washing damage the furnace brickwork on insulation?

A. No; provided routine precautions are observed and provided the unit is thoroughly and slowly dried out immediately after washing.

Q. How long does it take to water wash a boiler unit?

A. From 4 to 10 hours depending upon the extent of slag accumulations (for average conditions, 6 to 8 hours).

Q. How long does it take to dry out a unit after water washing?

A. Usually from 8 to 12 hours when using a very light fire such as that obtained from one burner operated intermittently with a lighting-off size sprayer plate.

Q. What precautions should be taken to minimize brickwork damage other than the drying out procedure?

A. On header-type boiler units, cover the top front and rear wall seals with a temporary waterproofing coat of any available material. This will prevent the water from dripping down behind the bricks. While this precaution is desirable, and will reduce the drying out time, it is not absolutely necessary.

Q. How is the water that drips into the furnace removed?

A. One of the easiest ways is to run a 1- or 2-inch rubber hose to the suction of the bilge pump. The open suction of the hose in the furnace should be covered with a wire screen. The speed of the bilge pump may be varied to keep a minimum amount of water in the furnace.

Q. Should a canvas or other protective covering be used on the furnace refractories?

A. This is not generally practical or desirable, although in certain cases a canvas may be used to advantage. For instance, when washing an economizer, a canvas laid over the outer or top row of boiler tubes will keep the water and debris out of the boiler tube bank and furnace. Canvas used for such purposes usually rots quickly and therefore must be washed thoroughly (preferably with a mild soda solution) before being dried and stowed away.

Q. Is a hole in the brick pan to provide for the removal of the water necessary or desirable?

A. No.

Q. In water washing, does the operator usually work from above the surface to be cleaned?

A. Generally, this is the case. However, in some cases, it may be necessary to clean the furnace face of the superheater from the furnace. This is necessary when support plates or other structural obstacles prevent other access to the surfaces to be cleaned or when the tubes are so badly slagged that forceful direct contact of the water spray is necessary at a close range.

Q. Is water washing a shipyard job?

A. While water washing is often done in the shipyard, it can easily be done by the vessel's crew, and at sea, if necessary or desirable.

Q. How soon after securing a boiler can the water washing procedure be started?

A. Generally, as soon as the unit is cool enough for a man to enter and remain in the furnace.

Q. How does water washing compare with other methods of cleaning?

A. Economically, it is cheaper and faster. Physically, it is more thorough. A good water-washing job will leave all tubes "factory" clean the full depth of the tube bank. Further, because of the comparatively clean surfaces resulting from the water washing, the unit remains cleaner for a longer operating period due to the fact that there are fewer rough areas on which new slag can adhere to solidly.

Figures 1 and 2 show tube bank condition before and after a typical water-cleaning operation. That these results can be consistently obtained has been demonstrated hundreds of times.

RADAR REFLECTOR BUOYS

A number of buoys along the Atlantic coast and on the Great Lakes have been fitted with radar reflectors. The Aids to Navigation Division, responsible for the development of aids to marine navigation, is desirous of receiving reports from masters of radar equipped vessels as to the effectiveness of the radar reflector buoy as compared with a nonequipped buoy of similar dimensions.

Reports should be addressed to the Commandant (OAN), U. S. Coast Guard, Washington 25, D. C. The information should include identification of the buoy, effective range obtained, radar range scales used, type of radar, condition of the sea, atmospheric conditions, and other pertinent information which will be helpful in evaluating the effectiveness of radar reflectors.

The buoys which have been fitted with reflectors are in the following locations:

Boston Harbor Approach

North Channel Lighted Bell Buoy 2.
North Channel Lighted Bell Buoy 10.

New York Harbor Approach

Ambrose Channel Entrance Lighted Bell Buoy 2 A.

Chesapeake Bay

York Spit Channel Entrance Lighted Whistle Buoy 1 A.
Tangier Island Shoal Lump Lighted Bell Buoy 12 TL.
Craighill Channel Lighted Buoy 1 C.

Virgin Passage, West Indies

Restricted Area North Lighted Buoy 2 RA.
Restricted Area Northeast Lighted Buoy 4 RA.

Great Lakes

Niagara Bar Lighted Buoy 2—Lake Ontario.
Amherstburg Outer Channel Lighted Bell Buoy 2—Detroit River.
Saginaw Bay Traffic Lighted Bell Buoy—Lake Huron.
South Graham Shoal Lighted Bell Buoy 1—Lake Huron (Straits of Mackinac).
Crab Island Shoal Lighted Gong Buoy 4—Detour Passage (St. Mary's River).
Round Island Lighted Bell Buoy 32—St. Mary's River.
Point Iroquois Shoal Lighted Bell Buoy 45—Lake Superior.
Indiana Shoal Lighted Gong Buoy 2—Lake Michigan.
Rock Island Passage Lighted Gong Buoy RI—Lake Michigan.

PREVENT FIRES

Put out cigarettes, cigars, and matches.

Replace frayed and worn electric cords.

Eliminate all breeding places of fire.

Visit suspected fire traps frequently.

Educate all hands in fire-prevention methods.

Never use any but safety matches aboard ship.

Training in fire fighting pays dividends.

Fire-fighting equipment should be adequate.

Inspect equipment frequently.

Refill and examine empty extinguishers.

Educate personnel in latest fire-fighting methods.

SAFETY ALWAYS.

CARELESSNESS CAUSES CALAMITY

LESSONS FROM CASUALTIES

TRACK THAT TARGET

Another collision in which a radar-equipped vessel was involved indicates the necessity in certain cases of a plot being made of ranges and bearings in order that the course and speed of the target may be determined. Unless this is done any avoiding action taken by the radar vessel cannot be considered as being based on sound judgment.

It is not always necessary to make a plot of ranges and bearings. In a good many cases it will be readily apparent from observation of the target on the scope that the two vessels are going to pass well clear of each other if they maintain their courses and speeds. One such case is where the target is picked up at a good distance and the bearing changes rapidly as compared with the range.

However, when the bearing does not change or changes only slightly, and the range closes, the vessels are on collision or near collision courses. A plot should be made and especially so if no change of speed is made. If the mate on watch is the only officer on the bridge the master should be called in order that one or the other may conn the ship and the other may make the plot.

In the case at hand the *Southport* was sailing westward in the English Channel on course 275° true after departing from LeHavre. The *Finnborg* was heading eastward in the channel on course 68° true. Patches of fog were encountered on the runs and the visibility lessened to a visibility of 100 to 200 yards as the vessels approached each other.

At about 6:15 p. m., the *Southport* radar indicated a target bearing 16° on the port bow and at a distance of 7 miles. Five minutes later there had been no change in the bearing while the range had closed. The master of the *Southport* then altered course 10° to the right to course 285°. The master apparently assumed from observation of the target on the scope that the vessels were approaching each other on reverse courses and that they would pass port to port and well clear. In fact the vessels were on crossing courses which fact could have been discovered if a record of the ranges and bearings and the times at which they were observed had been kept. This having been done a proper plot would have revealed that the approach was a crossing situation. The fact that the bearing did not change and the range decreased was indicative of danger of collision if each vessel maintained its course and speed.

Reading some of the reports of collisions in which radar equipped vessels are involved, the assumption that when a target is picked up fine on the bow the approach is head and head is a common one. This is a dangerous assumption to make as this case so aptly proves. It is true that in this case, if the vessels had been on reverse courses the bearing would have changed little, if any, during the early stages of the approach.

In other lessons from casualties involving radar-equipped vessels the importance of determining the track of the target as soon as possible was stressed where danger of collision existed. Likewise the importance of taking early and marked avoiding action was emphasized. Whether the avoiding action consists of change of course, speed, or both, the change made should be radical. Here, the change of course, was a slight one and apparently was made on the erroneous assumption the vessels would pass port to port on reverse courses.

Where the approach is made in a fog the advantages of reducing to a moderate speed or of stopping should be realized. This permits more time to determine the manner in which the vessels are approaching and the best avoiding action. In fact in the majority of cases, stopping may well prove to be a most satisfactory avoiding action as it undoubtedly would have been in this case. Reduction to a moderate speed or stopping would also bring the vessel into compliance with the Rules of the Road on speed in a fog. On this matter the International Conference on the Safety of Life at Sea 1948, made the following recommendation:

> The Conference, while recognizing that the recent advances in radar and electronic navigational aids are of great service to shipping is of the opinion that the possession of any such device in no way relieves the master of a ship from his obligation strictly to observe the requirements laid down in the international regulations for preventing collisions at sea, and in particular, the obligations contained in articles 15 and 16 of those regulations.

As a result of the collision, suit was brought in the Admiralty Court in England where both vessels were held equally to blame—the *Finnborg* for porting and the *Southport* for excessive speed. Although a copy of the decision is not at hand it is learned that in the opinion the judge stated: "Whether speed in fog, which in ordinary circumstances would be regarded as excessive may still be a moderate speed for a vessel fitted with radar, will no doubt have to be decided in some future case."

The answer is if a radar-equipped vessel runs in a fog at a speed ordinarily considered excessive the burden is on the master to TRACK THE TARGET and AVOID THE TARGET.

DISPOSAL OF FLUORESCENT LAMPS

A serious hazard is presented in the handling of fluorescent lamps. Exposure to this hazard may result from accidental breakage of the fluorescent lamp tubes, but usually is connected with the disposal of used tubes through various means of destruction or the punching of holes in the tubes to release the pressure prior to breakage.

The hazardous material released by broken lamps is in the form of minute particles of dust-bearing beryllium, and mercury vapors. In addition metallic mercury may be deposited in the working area where it will continue to give off mercury vapors. The poisonous dust may remain suspended in the air for considerable periods; mercury vapors are deadly with long exposure even in incredibly diluted quantities. The repeated or continued inhalation of beryllium dust may result in permanent disability or death. If the beryllium dust enters an open wound, such as a cut by a fragment of glass from a tube, inflammation or ulceration, requiring many months of treatment, will result. In such cases immediate medical treatment is recommended.

Disposal of used lamps should be made only by either of the following two methods:

(*a*) By tightly wrapping the individual tubes in several thicknesses of paper, saturating with water, and crushing; or

(*b*) By submerging in water and crushing.

The second method may be followed by constructing a tank long enough to receive the tubes and fitted with handles and a drain. Or a large metal drum of adequate height with half the head cut out may be used;

the tubes can then be placed on end under the covered half of the drum. After the tubes are submerged and crushed the water may be drained into the sewer and the particles of glass carried to the disposal area in the tank.

Fragments of glass should remain in a wet stage at all times while handling. The crushed glass must be deposited or thrown overboard where contact by persons is extremely unlikely. Final disposal should be made so that vessel personnel and the public will not be exposed to the hazard. Lamps and the glass resulting therefrom should not be placed in an incinerator. Gloves, and other protective equipment if indicated, should be worn by personnel involved during the entire disposal period. Due to pressure within the unbroken lamps, breakage should be accomplished out of doors.

Lamps must not be left in places where they can be knocked to the deck or where children can handle them in play. Particularly on shipboard stowage of lamps should preclude accidental breakage.

APPENDIX

Amendments to Regulations

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

[CGFR 49-18]

Miscellaneous Amendments to Chapter

A notice regarding proposed changes in the inspection and navigation regulations was published in the FEDERAL REGISTER dated February 26, 1949, and a public hearing was held by the Merchant Marine Council on March 29 and 30, 1949.

The purpose of the miscellaneous amendments to the regulations is to clarify their intent, effect editorial changes, and establish additional safety requirements, as well as to bring certain marine engineering material specifications into conformance with American Society for Testing Materials standards. This document establishes new specifications for lifesaving equipment, bulkhead panels, and incombustible materials. These requirements were previously published in the various general rules and regulations for vessel inspection (46 CFR, subch. G, H, I, and J of ch. I). The purpose for the changes in the boiler tube requirements is to clarify the requirements for the determination of the maximum allowable pressure and minimum thickness of boiler and superheater tubes. The requirements for relief valves for unfired pressure vessels were changed to provide for a relief valve of reasonable size. The requirements for piping systems, pumps, refrigeration machinery, and fuel tanks, were rewritten and where necessary regulations in other parts have been canceled so that the requirements will appear in part 55. All the written and oral comments, data, and suggestions submitted were considered by the Merchant Marine Council and where practicable were incorporated into the miscellaneous amendments to the regulations.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by R. S. 4405, as amended, and section 101 of Reorganization Plan No. 3 of 1946, 46 U. S. C. 1, 375, as well as the statutes cited with the regulations below, the following amendments to the regulations are prescribed which shall become effective ninety (90) days after date of publication of this document in the Federal Register:

Subchapter F—Marine Engineering

* * * * *

The miscellaneous amendments to the Marine Engineering Regulations and Material Specifications in Part 51, Materials; Part 52, Construction; Part 53, Low-Pressure Heating Boilers; and Part 57, Installation, Tests, Inspections, Repairs, and Miscellaneous Requirements; and a revised Part 55, Piping Systems, Pumps, Refrigeration Machinery, and Fuel Tanks, have not been reprinted herein because of insufficient space. A revised edition of the Marine Engineering Regulations and Material Specifications is being printed which will contain all the amendments and revisions made since April 1, 1948. An announcement will be published in the "Proceedings" when it will be available.

Subchapter G—Ocean and Coastwise: General Rules and Regulations

PART 59—BOATS, RAFTS, BULKHEADS, AND LIFESAVING APPLIANCES (OCEAN)

1. Section 59.3 is amended to read as follows:

§ 59.3 *Strength and operation of davits.* (a) The davits shall be of such strength that the boats can be lowered with their full complement of persons and equipment, the vessel being assumed to have a list of 15°. For construction of davits see subpart 160.032 in Subchapter Q of this chapter.

(b) The davits shall be fitted with a gear of sufficient power to insure that the boat can be turned out against the maximum list under which the lowering of the boats is possible on the vessel in question.

(c) The Commandant is authorized by the Seamen's Act (sec. 14, 38 Stat. 1178, 1181; 46 U. S. C. 481) and Executive Order No. 9083 (7 F. R. 1609) in specific cases to exempt existing vessels from the requirements of this section that the davits shall be of such strength and shall be fitted with a gear of sufficient power to insure that the boats can be lowered with their full complement of persons and equipment, the vessel being assumed to have a list of 15°, where their strict application would not be practicable or reasonable.

(d) Each set of davits shall have a boat of the first class attached to it, provided that the number of open boats of the first class attached to davits shall not be less than the minimum number fixed by the preceding table.

(e) If it is neither practicable nor reasonable to place on a vessel the minimum number of sets of davits required, a smaller number of sets of davits may be fitted, provided always that this number shall never be less than the minimum number of open boats of the first class required by the table. If a large proportion of the persons on board is accommodated in boats whose length is greater than 50 feet, a further reduction in the number of sets of davits may be allowed exceptionally, if the arrangements are in all respects satisfactory: *Provided, however*, That in all cases in which a reduction in the minimum number of sets of davits or other equivalent appliances required by the rules is allowed, the owner of the vessel in question shall be required to prove, by a test made in the presence of an inspector, that all the boats can be efficiently launched in a minimum time. The conditions of this test shall be as follows:

(1) The vessel is to be upright and in smooth water.

(2) The time is the time required from the beginning of the removal of

the boat covers, or any other operation necessary to prepare the boats for lowering, until the last boat or pontoon raft is afloat.

(3) The number of men employed in the whole operation shall not exceed the total number of boat hands that will be carried on the vessel under normal service conditions.

(4) Each boat when being lowered shall have on board at least two men and its full equipment as required by this part.

(5) The time allowed for this test shall not exceed 10 minutes.

(f) Vessels of class (c) shall be equipped with davits or other practicable means for properly launching the lifeboats. Mechanical davits, when installed on vessels of class (c), shall be subject to all the tests required by this section.

(g) No type or make of mechanical or gravity davit shall be used unless it has first been approved by the Commandant.

(h) No mechanical davits of a character which require manual or other power to turn the boats out to the position for lowering into the water shall be fitted on any vessel the keel of which is laid after September 1, 1941, if such davits are to handle a lifeboat which, without its complement of persons on board, but having on board all air tanks and other lifeboat equipment, exceeds 5,000 pounds total weight; i. e., 2,500 pounds for a single davit arm.

(i) Davits of an approved type, which are capable of swinging the boats into the lowering position without the application of any effort or external force other than that necessary to operate the releasing mechanism, allowing the boat to move from the stowed position to the lowering position by the force of gravity, shall be provided to handle all lifeboats the total weight of which, including air tanks and lifeboat equipment, but without the complement of persons on board, exceeds 5,000 pounds.

(j) No davit arm or frame comprising mechanical or gravity davits shall be placed on board any vessel until all the requirements of this section and subpart 160.032 of Subchapter Q of this chapter have been fully complied with. Whenever mechanical or gravity davits or parts of davits, such as davit arms, or frames, are installed on vessels, to take the place of davits, davit arms, or frames which have become damaged or broken, such davits or frames shall have the manufacturer's name plate affixed thereto.

(R. S. 4488, 4491, 49 Stat. 1544, 54 Stat. 346, sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 481, 489, 1333, 50 U. S. C. 1275)

2. Section 59.3a is amended to read as follows:

§ 59.3a *Mechanical means for lowering.* (a) On all passenger vessels where the height of a boat deck exceeds 20 feet from the lightest seagoing draft, wire falls and mechanical means for lowering shall be provided for each set of davits.

(b) Winches proposed for use in new installations shall be of an approved type and constructed in accordance with subpart 160.015 of Subchapter Q of this chapter.

(c) Suitable fabric covers shall be provided, so fitted over exposed mechanisms, that ice formations may be readily broken adrift when necessary to operate the winch.

(d) Installation and tests: Mechanical means for lowering shall be so located that the operator can observe the movement of the lifeboat during the lowering operation. The lead of the falls to the winch shall be such that the distance from the centerline of the winch drum to the center of the nearest block is not less than 8 feet. Upon the completion of the installation of all mechanical means for lowering lifeboats, and before the vessel is certificated for service, the following tests and examinations shall be made in the presence of an inspector:

(1) Swing lifeboat out from chocks and lower to level for loading, at which point lifeboat shall be loaded with dead weight equivalent to the number of persons allowed (165 pounds per person) together with weight of equipment, plus 10 percent of the total load. The boat should then be lowered to water, stopping at approximately 6-foot intervals by action of the counterweight alone. During this test the following observations should also be made:

(i) Brake action shall be smooth, but positive. Brakes exposed to the weather shall also be tested under the load lowering condition with the braking surface wetted.

(ii) Counterweight shall be capable of stopping and holding boat when released.

(iii) Winch shall be capable of controlling the speed of lowering. This should not in general exceed 100 feet per minute.

(iv) No part of lowering gear shall show any distress under load.

(v) Deck under winch and davits must be of sufficient strength to prevent any undue stress of the deck under load.

(vi) Mechanical davits shall swing to extreme outboard position without slacking winch brake.

(vii) Action of governor brake and lowering speed permitted by same should be noted.

(viii) Determine that falls are of sufficient length to lower lifeboats to light load line with vessel listed to 15° either way.

(2) If nested boats are used, the hand operated quick recovery mechanism shall be tested and the action must be easy enough to permit one man to recover falls.

(3) A report of the results of the installation tests covering all the above points shall be recorded.

(R. S. 4488, 4491, 49 Stat. 1544, 54 Stat. 346, sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 1, 367, 481, 489, 1333, 50 U. S. C. 1275)

3. Section 59.4 is amended to read as follows:

§ 59.4 *Lifeboats required: Vessels of classes (a) and (b).* (a) Vessels of classes (a) and (b) shall be equipped with lifeboats in accordance with the preceding table: *Provided,* That such vessels shall not be required to carry more lifeboat capacity than is necessary to accommodate all persons on board. If the lifeboats attached to davits do not provide accommodations for the vessel's actual complement of passengers and crew, additional lifeboats shall be installed to accommodate all persons on board, or to bring the complement of lifeboat capacity up to the minimum provided by the table, or to 75 percent of the complement of people on board, whichever is the greater. The remainder of the required equipment shall be provided by lifeboats or approved life rafts.

(b) One of the lifeboats on each side of the vessel shall be of suitable size and design for doing emergency work at sea. Each of these emergency boats shall be provided with at least four life lines fitted to a span between the davit heads of sufficient length to reach the water at the vessel's lightest seagoing draft. A releasing gear of the type which may be unhooked under tension is recommended in these boats. A sea painter should be passed along forward on the vessel when at sea and in the lifeboat a long eye, strop, and toggle should be fitted.

(R. S. 4488, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended, 46 U. S. C. 367, 481, 1333, 50 U. S. C. 1275)

4. Section 59.4a (a) is amended to read as follows:

§ 59.4a *Buoyant apparatus required.* * * *

(a) They shall not impede in any way prompt handling of lifeboats, or

the mustering of persons on board at launching stations.

5. Section 59.5 (e) is amended to read as follows:

§ 59.5 *Motor-propelled lifeboats.* * * *

(e) Motor-propelled lifeboats shall comply with the requirements for an oar-propelled lifeboat; and the volume of the internal buoyancy shall be increased in sufficient proportion to compensate for the difference between the weight of the motor, the searchlight, and the radio-telegraph installation and their accessories, and the weight of the additional persons which the boat could accommodate if the motor, searchlight, and the radiotelegraph installation and their accessories were removed.

(R. S. 4488, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 481, 1333, 50 U. S. C. 1275)

6. Section 59.11 is amended by changing paragraphs (u) and (y) to read as follows:

§ 59.11 *Lifeboat equipment.* * * *

(u) *Propellers (hand-operated).* Lifeboats may be fitted with a hand-operated propeller of an approved type, but all lifeboats, except motorboats, having a capacity of 60 or more persons, shall be fitted with a hand-operated propeller of an approved type, constructed in accordance with subpart 160.034 of subchapter Q of this chapter. The above propelling gear shall be required in all such lifeboats fitted on new vessels and to the lifeboat replacements on existing vessels.

* * * * *

(y) *Rudder.* One rudder and tiller. For construction of rudder and tiller see § 160.035–3 (t) of subchapter Q of this chapter.

(R. S. 4488, 4491, 49 Stat. 1544, 54 Stat. 346, sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 481, 489, 1333, 50 U. S. C. 1275)

7. Section 59.11a is amended to read as follows:

§ 59.11a *Motor lifeboat equipment.* (a) *Equipment required.* In addition to the equipment required by § 59.10a and the provisions of § 59.11, motor lifeboats shall carry 2 fire extinguishers of the carbon tetrachloride type, but need not carry a mast or sails nor more than four rowing oars and one steering oar. All motor lifeboats carried in compliance with § 59.5 shall be fitted with a radio installation and a searchlight.

(b) *Motor and accessories.* (1) The engine for motor-propelled lifeboats shall be of a reliable, marine, heavy-duty type, permanently installed inside the lifeboat. The motor of each lifeboat shall be operated ahead and astern for a period of not less than 5 minutes at least once in every seven days to test its readiness for service, such operation to be part of a lifeboat drill and included in a report of such drill.

(2) The fuel tanks shall be emptied and the fuel changed at least once a year. The storage of fuel outside the lifeboat is prohibited.

(3) Motor-propelled lifeboats certified for 100 or more persons shall be fitted with at least two bilge pumps, one of which shall be an efficient hand pump. The bilge pumps are each to be capable of pumping from each compartment. Motor-propelled lifeboats certified for less than 100 persons shall be fitted with a bilge pump, either hand or power, having suitable suctions or drainage to different parts of the boat.

(c) *Searchlight.* A searchlight shall be provided for a motor propelled lifeboat fitted with radio cabin. The source of power for the searchlight shall be capable of operating the light intermittently for a period of 6 hours and continuously for a period of 3 hours. Where the power for the radio equipment and the searchlight are derived from the same source, this shall be sufficient to provide for the adequate working of both appliances. Two spare bulbs shall be provided for the searchlight and carried in the lifeboat. Searchlights installed on new motor-propelled lifeboats or installed as replacements on existing motor-propelled lifeboats shall be of an approved type and constructed in accordance with subpart 161.006 of Subchapter Q of this chapter. The Convention requirements for searchlights are also contained in Subpart 161.006 of Subchapter Q of this chapter.

(d) *Radio installation.* The radio installation shall comply with the requirements of the Federal Communications Commission for this purpose.

(R. S. 4488, 4491, 49 Stat. 1544, 50 Stat. Part 2, 1246, 54 Stat. 346, sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 481, 489, 1333, 50 U. S. C. 1275)

8. Section 59.12 *Standard types of lifeboats* is deleted.

9. Section 59.13 *Drawings, specifications, name plate* is deleted.

10. Section 59.15 is amended to read as follows:

§ 59.15 *Construction of lifeboats.* Lifeboats shall be of an approved type and constructed in accordance with subpart 160.035 of Subchapter Q of this chapter.

11. Section 59.16 *Construction of wooden lifeboats* is deleted.

12. Section 59.17 *Open boats with internal and external buoyancy; class 1B* is deleted.

13. Section 59.19 *Boats equivalent to boats of class 1B* is deleted.

14. Section 59.20 *Pontoon boats in which persons cannot be accommodated below deck, having a well deck and fixed watertight bulwarks; class 1C* is deleted.

15. Section 59.21 *Boats of the second class* is deleted.

16. Section 59.22 *Open boats having the upper part of the sides collapsible; class 2A* is deleted.

17. Section 59.23 *Pontoon boats having a well deck and collapsible bulwarks; class 2B* is deleted.

18. Section 59.24 *Pontoon boats in which persons cannot be accommodated below deck, having a flush deck and collapsible bulwarks; class 2C* is deleted.

19. Section 59.25 *Arrangements for clearing pontoon lifeboats of water* is deleted.

20. Section 59.26 *Type of boat equivalent to boat of class 2* is deleted.

21. Section 59.30 is amended to read as follows:

§ 59.30 *Air tanks in lifeboats.* Before any lifeboat is passed and accepted, the air tanks thereof shall be tested in the presence of an inspector by an air pressure of not more than 1 pound per square inch. At each subsequent annual inspection, or oftener if in the opinion of the inspectors it is necessary or desirable, the inspectors shall satisfy themselves that the tanks are in good condition, but pressure need not be applied unless the inspectors are in doubt regarding the efficiency of the tanks. This does not take from the inspectors the right and authority to satisfy themselves at any time, either by examination or pressure, as to the condition of the tanks.

(R. S. 4481, 4488, 4492, 35 Stat. 428, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 396, 474, 481, 490, 1333, 50 U. S. C. 1275)

22. Section 59.31 *Cubic capacity of open boats of the first class* is deleted.

23. Section 59.32 *Deck area of pontoon boats and open boats of the second class* is deleted.

24. Section 59.33 *Capacity limits* is is deleted.

25. Section 59.34 *Equivalents for and weight of the persons* is deleted.

26. Section 59.36 is amended to read as follows:

§ 59.36 *Lifeboats and life rafts kept clear for launching.* The decks on which lifeboats or life rafts are carried shall be kept clear of freight or any other obstruction that would interfere with the immediate launching of the lifeboats or life rafts.

27. Section 59.39 is amended to read as follows:

§ 59.39 *Tests of lifeboats at annual inspection.* The inspectors shall satisfy themselves that every lifeboat, together with its equipment, of all vessels, is in every respect in good condition and ready for immediate use. Every lifeboat, with its required equipment, of passenger vessels, shall be lowered to near the water and loaded to its allowed capacity, evenly distributed throughout its length, and then lowered into the water afloat. In making this test, persons or deadweight may be used. If persons are used, the weight of each person shall average at least 165 pounds. When deadweight is used, the weight shall be equivalent to at least 165 pounds for each person allowed.

28. Section 59.42 *Life rafts: Drawings, specifications, name plate, and how marked* is deleted.

29. Section 59.44 is amended to read as follows:

§ 59.44 *Construction of life rafts.* Life rafts shall be of an approved type. For new vessels and replacements on existing vessels, life rafts shall be of the Type A and constructed in accordance with subpart 160.018 of Subchapter Q of this chapter.

30. Section 59.47 *Approved life rafts* is deleted.

31. Section 59.50 *Capacity and allowance of life rafts* is deleted.

32. Section 59.54a is amended to read as follows:

§ 59.54a *Buoyant apparatus.* Buoyant apparatus shall be of an approved type and constructed in accordance with subpart 160.010 of Subchapter Q of this chapter.

33. Section 59.57 *Self-igniting water lights* is deleted.

34. Section 59.62 is amended to read as follows:

§ 59.62 *Steering apparatus; existing installations.* (a) Suitable steering apparatus shall be provided. Extra steering apparatus consisting of relieving tackle, or of auxiliary power or hand steering gear attached to the rudder stock independent of the regular steering gear shall be provided.

(b) Where reasonable and practicable, the emergency steering wheel shall be located on the after weather deck, and an efficient means of communication shall be provided between the pilothouse, the emergency steering station, and the steering engine room.

(R. S. 4480, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended, 46 U. S. C. 1, 367, 473, 1333, 50 U. S. C. 1275)

35. Part 59 is amended by adding a new § 59.62a, reading as follows:

§ 59.62a *Steering apparatus; new installations.* (a) All new vessels and all replacements on existing vessels shall have suitable means of steering capable of swinging the rudder from hard right to hard left in 30 seconds with the vessel proceeding ahead at the maximum design speed. An additional effective auxiliary means shall be provided for actuating the rudder through an independent tiller, or its equivalent, designed to swing the rudder from 15 degrees right of center to 15 degrees left of center within 60 seconds with the vessel proceeding at one-half the maximum design speed or seven knots, whichever is the greater.

(b) The main steering gear on vessels exceeding 250 feet in length shall be power driven and approved means shall be provided for operating the auxiliary steering gear.

(c) An auxiliary steering gear consisting of a block and tackle operating an independent tiller of suitable design so arranged as to be operated by a power driven winch or other suitable machinery is considered a satisfactory auxiliary power steering gear.

(d) When the main steering gear is of the double-acting dual-power hydraulic type attached to a yoke on the rudder post an auxiliary steering gear secured to a separate tiller is not required provided the yoke of the main gear is designed for strength in excess of that of the rudder stock.

(e) Small vessels where the main quadrant or tiller is of suitable design, located above the deck and provided with acceptable means for attaching a block and tackle for emergency steering gear, are not required to have a separate auxiliary tiller.

(f) Power driven main steering gears shall be fitted with positive means for stopping the gear before the rudder stops are reached. The arrangement shall be synchronized with the movement of the rudder stock or position of the gear rather than with the steering gear control system.

(g) Brakes shall be fitted to the rudder stock or brake drum attached thereto for holding the rudder in case of an emergency on all ocean-going vessels required to have power-operated steering gear. When the gear is of the four-ram hydraulic type, a hand-operated filling and drain pump connected to the ram cylinder and capable of producing a torque equal to one-fourth of the maximum ahead torque may be substituted for the brake.

(h) Vessels fitted with power-operated steering gear shall have suitable buffers fitted to prevent damage caused by the quadrant striking stops and shock being transmitted to the gear.

(i) An emergency steering wheel shall be located on the after weather deck of vessels in which power driven steering gear is installed except for arrangements wherein the Commandant considers such impracticable. Suitable means of communication shall be provided between the pilothouse, the emergency steering station, and the steering engine room.

(j) Steering wheels at steering stations shall be installed in a vertical position and arranged for steering by the helmsman when standing abaft the wheel and facing forward. The top of the steering wheel, the rudder blades, and the head of the ship shall move in the same direction.

(k) When a "trick" wheel is installed in the steering gear room for use in warming up and testing the gear as well as for steering purposes, and the wheel is installed in a vertical position, it shall meet the requirements of paragraph (j) of this section.

(l) If the "trick" wheel is installed in a horizontal position it shall turn in a clockwise direction for "right rudder" and in a counterclockwise direction for "left rudder". With this arrangement, the helmsman need not stand abaft the wheel.

(m) Where "trick" wheel or other device is installed in the steering gear room for the sole purpose of warming up and testing the gear, it may be installed to best suit design and operating conditions of the gear. A plate shall be fitted on this wheel or device with indicating arrows showing the direction of movement to produce "right rudder" and "left rudder".

(n) When auxiliary steering gear is installed in lieu of relieving tackles, the steering wheel or device used for operating the gear shall meet all requirements given in paragraph (j) of this section.

(o) At all steering stations, there shall be installed a suitable notice on the wheel or device, or in such other position as to be directly in the helmsman's line of vision, to indicate the direction in which the wheel or device must be turned for "right rudder" and for "left rudder".

(p) Where no regular rudder is

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fitted and steering action is obtained by a change of setting of the propelling unit, emergency steering gear is not required nor will the requirements of this section generally be applicable. Special consideration will be given by the Commandant for such installations.

(q) The arrangement of piping for hydraulic gears shall be such that a change from the main to the auxiliary gear can be readily effected. A relief valve shall be provided for the protection of the hydraulic system. Pressure piping shall meet the requirements of Part 55 of Subchapter F (Marine Engineering) of this chapter.

(R. S. 4480, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 1, 367, 473, 1333, 50 U. S. C. 1275)

36. Section 59.68 is amended to read as follows:

§ 59.68 *Disengaging apparatus.* (a) Lifeboats shall be fitted with suitable disengaging apparatus. Mechanical disengaging apparatus, if fitted, shall be of an approved type and constructed in accordance with subpart 160.033 of subchapter Q of this chapter.

(b) All lifeboats installed on new ocean and coastwise passenger vessels of over 3,000 gross tons, and all lifeboats installed as replacements to existing equipment on such vessels, shall be fitted with mechanical disengaging apparatus so arranged as to make it possible for the lifeboats to be launched while such vessels are under way or stopped, and for both ends of the lifeboat to be released simultaneously, under tension, by one person. The gears shall be capable of being released from one position in the lifeboat while the boat is fully loaded with allowed persons and equipment. Simultaneous release shall be effected by partially rotating a shaft which shall be continuous and extend from point of contact with the hooks.

(c) Where lifeboats on new ocean and coastwise cargo vessels of over 3,000 gross tons are fitted with mechanical disengaging apparatus, such apparatus shall comply with the requirements of paragraph (b) of this section. Replacements to equipment on existing cargo vessels of over 3,000 gross tons shall comply with the requirements of paragraph (b) of this section if the lifeboat being replaced is fitted with mechanical disengaging apparatus.

(R. S. 4488, 4491, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 1, 367, 481, 489, 1333, 50 U. S. C. 1275)

PART 60—BOATS, RAFTS, BULKHEADS, AND LIFESAVING APPLIANCES (COASTWISE)

1. Section 60.2 is amended to read as follows:

§ 60.2 *Lifeboats and life rafts required on vessels of class (a).* (a) Vessels of class (a) shall be required to have lifeboat and life-raft capacity to accommodate all persons on board. Not less than 75 percent of the total capacity shall be in lifeboats and 25 percent may be in life rafts of an approved type.

(b) Vessels of class (a) during the interval between May 15th and September 15th in any one year, both dates inclusive, shall be required to be equipped with lifeboats, life rafts, and buoyant apparatus to accommodate all persons on board, not less than 35 percent of which shall be in in lifeboats, 35 percent in life rafts, and 30 percent may be in buoyant apparatus.

(R. S. 4488, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 1, 481, 1333, 50 U. S. C. 1275)

2. Section 60.3 is amended to read as follows:

§ 60.3 *Lifeboats and life rafts required on vessels of class (b).* Vessels of class (b) shall be required to have lifeboat and life-raft capacity to accommodate all persons on board throughout the year, not less than 75 percent of which shall be in approved lifeboats and 25 percent may be in life rafts of an approved type.

(R. S. 4488, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 1, 481, 1333, 50 U. S. C. 1275)

3. Section 60.9 is amended by changing paragraphs (u) and (y) to read as follows:

§ 60.9 *Lifeboat equipment.* (See § 59.11 of this chapter, as amended, which is identical with this section except for paragraph (f).)

4. Section 60.10 *Drawings, specifications, name plate* is deleted.

5. Section 60.12 is amended to read as follows:

§ 60.12 *Construction of lifeboats.* (See § 59.15 of this chapter, as amended, which is identical with this section.)

6. Section 60.13 is amended to read as follows:

§ 60.13 *Air tanks in lifeboats.* (See § 59.30 of this chapter, as amended, which is identical with this section.)

7. Section 60.14 *Construction of wooden lifeboats* is deleted.

8. Section 60.15 *Carrying capacity of lifeboats* is deleted.

9. Section 60.17 is amended to read as follows:

§ 60.17 *Tests of lifeboats at annual inspection.* (See § 59.39 of this chapter, as amended, which is identical with this section.)

10. Section 60.21 is amended to read as follows:

§ 60.21 *How lifeboats shall be carried; davits required.* (a) All lifeboats on vessels carrying passengers shall, if practicable, be carried under substantial davits of an approved type, but if it is not practicable so to carry all the lifeboats required, the remainder shall be stowed near at hand, so as to be easily and readily launched. Such davits and necessary gear shall be such as will enable the lifeboats to be lowered to the water in less than 2 minutes from the time the clearing away of the boats is begun.

(b) Each lifeboat carried under davits shall be provided with two separate davits. Such davits and the blocks and falls thereof, on all vessels, shall be of sufficient strength to carry the boat with its full load while maintaining a factor of safety of six.

(c) Vessels of class (c) shall be equipped with davits or other practical means for properly launching the lifeboats.

(d) No type or make of mechanical or gravity davit shall be used unless it has first been approved by the Commandant. For construction of davits see subpart 160.032 of Subchapter Q of this chapter.

(e) No mechanical davits of a character which require manual or other power to turn the boats out to the position for lowering into the water shall be fitted on any vessel the keel of which is laid after September 1, 1941, if such davits are to handle a lifeboat which, without its complement of persons on board, but having on board all air tanks and other lifeboat equipment, exceeds 5,000 pounds total weight; i. e., 2,500 pounds for a single davit arm.

(f) Davits of an approved type, which are capable of swinging the boats into the lowering position without the application of any effort or external force other than that necessary to operate the releasing mechanism, allowing the boat to move from the stowed position to the lowering position by the force of gravity, shall be provided to handle all lifeboats the total weight of which, including air tanks and lifeboat equipment, but without the complement of persons on board, exceed 5,000 pounds.

(g) No davit arm or frame comprising mechanical or gravity davits shall be placed on board any vessel until all the requirements of the rules of this section and subpart 160.032 of

Subchapter Q of this chapter have been fully complied with. Whenever mechanical or gravity davits or parts of davits, such as davit arms, or frames, are installed on vessels to take the place of davits, davit arms, or frames, which have been damaged or broken, such davits or frames shall have the manufacturer's name plate affixed thereto.

(R. S. 4488, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 1, 481, 1333; 50 U. S. C. 1275)

11. Section 60.21a is amended to read as follows:

§ 60.21a *Mechanical means for lowering.* (See § 59.3a of this chapter, as amended, which is identical with this section.)

12. Section 60.22 is amended to read as follows:

§ 60.22 *Lifeboats and life rafts kept clear for launching.* (See § 59.36 of this chapter, as amended, which is identical with this section.)

13. Section 60.26 *Inclosed lifeboats* is deleted.

14. Section 60.29 *Life rafts: Drawings, specifications, name plate, and how marked* is deleted.

15. Section 60.31 is amended to read as follows:

§ 60.31 *Construction of life rafts.* (See § 59.44 of this chapter, as amended, which is identical with this section.)

16. Section 60.34 *Approved life rafts* is deleted.

17. Section 60.35 *Carrying capacity of life rafts* is deleted.

18. Section 60.47a is amended to read as follows:

§ 60.47a *Buoyant apparatus.* (a) Buoyant apparatus shall be of an approved type and constructed in accordance with subpart 160.010 of Subchapter Q of this chapter.

(b) Buoyant apparatus shall be stowed as follows:

(1) They shall not impede in any way prompt handling of lifeboats, or the mustering of persons on board at launching stations.

(2) They shall be stowed in such a manner as to be readily launched.

(3) They shall not be secured to the deck except by lashings which can be easily slipped; but may be stowed in tiers one above the other, in which case the separate units shall be kept apart sufficiently to prevent sticking together, and supported on suitable distance pieces.

(4) Means shall be provided to prevent shifting.

(54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 1, 1333, 50 U. S. C. 1275)

19. Section 60.50 *Self-igniting water lights* is deleted.

20. Section 60.55 is amended to read as follows:

§ 60.55 *Steering apparatus; existing installations.* (See § 59.62 of this chapter, as amended, which is identical with this section.)

21. Part 60 is amended by adding a new § 60.55a, reading as follows:

§ 60.55a *Steering apparatus; new installations.* (See § 59.62a of this chapter, which is identical with this section.)

22. Section 60.61 is amended to read as follows:

§ 60.61 *Disengaging apparatus.* (See § 59.68 of this chapter, as amended, which is identical with this section.)

PART 63—INSPECTION OF VESSELS

1. Section 63.15 *Copies of specifications and/or blueprints* is deleted.

PART 64—DUTIES OF INSPECTORS

1. Section 64.18 is amended to read as follows:

§ 64.18 *Inspection of lifeboat-disengaging apparatus.* The inspectors, when inspecting or reinspecting vessels, shall carefully examine the lifeboat-disengaging apparatus and the blocks and falls thereof to satisfy themselves that the same are in good condition. The inspectors shall indicate in Form CG 840A at annual inspection the name and record of all lifeboat-disengaging apparatus found. If unable to identify such lifeboat-disengaging apparatus by name, the inspectors will within a reasonable time take the matter up with the Coast Guard District Commander in order that such apparatus may be traced for identification and approval record.

(R. S. 4417, 4418, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391, 392, 1333; 50 U. S. C. 1275)

PART 65—STEAM YACHTS

1. Section 65.2 is amended to read as follows:

§ 65.2 *Lifeboats and life rafts required on vessels of class (a).* Vessels of class (a) shall be required to have lifeboat and life raft capacity for all persons on board. Not less than 75 percent of the total capacity shall be in lifeboats and 25 percent may be in life rafts of an approved type.

(R. S. 4488, as amended; 46 U. S. C. 481)

2. Section 65.3 is amended to read as follows:

§ 65.3 *Lifeboats and life rafts required on vessels of class (b).* (a) Vessels of class (b) shall be required to have lifeboats and life raft capacity to accommodate all persons on board. Not less than 75 percent of the total capacity shall be in lifeboats and 25 percent may be in approved life rafts.

(b) Vessels of class (b) during the interval between May 15 and October 15 in any 1 year, both dates inclusive, shall only be required to be equipped with lifeboats and life rafts to accommodate 70 percent of all persons on board, not less than 50 percent of which shall be in lifeboats and 50 percent may be in life rafts of an approved type.

(R. S. 4488, as amended; 46 U. S. C. 481)

3. Section 65.5 *Air tanks on vessels of class (a)* is deleted.

4. Section 65.6 *Air tanks on vessels of class (b)* is deleted.

5. Section 65.6 *Carrying capacity of lifeboats* is deleted.

6. Section 65.11 *Drawings, specifications, name plate* is deleted.

Subchapter H—Great Lakes: General Rules and Regulations

PART 76—BOATS, RAFTS, BULKHEADS, AND LIFESAVING APPLIANCES

1. Section 76.3 is amended to read as follows:

§ 76.3 *Lifeboats and life rafts required on vessels of class (a).* Vessels of class (a) shall be required to have lifeboat and life raft capacity to accommodate all persons on board. Not less than 75 percent of the total capacity shall be in lifeboats and 25 percent may be in lifeboats or life rafts of an approved type. Vessels of this class navigating during the interval between May 15 and September 15 in any one year, both dates inclusive, shall be required to be equipped with only such lifeboats and life rafts as will accommodate 50 percent of all persons on board, of which accommodation not less than two-fifths shall be in lifeboats and three-fifths may be in lifeboats or life rafts of an approved type.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

2. Section 76.4 is amended to read as follows:

§ 76.4 *Lifeboats and life rafts required on vessels of class (b).* Vessels of class (b) shall be required to have lifeboat and life raft capacity to accommodate all persons on board. Not less than 25 percent of the total

capacity shall be in lifeboats and 75 percent may be in lifeboats or life rafts of an approved type. Vessels of this class navigating during the interval between May 15 and September 15 in any one year, both dates inclusive, shall be required to be equipped with only such lifeboats and life rafts as will accommodate 10 percent of all persons on board, of which accommodation not less than 25 percent shall be in lifeboats and 75 percent may be in lifeboats or life rafts of an approved type.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

3. Section 76.5 is amended to read as follows:

§ 76.5 *Lifeboats and life rafts required on vessels of class* (c). Vessels of class (c) shall be required to have lifeboat and life raft capacity to accommodate all persons on board. Not less than 25 percent of the total capacity shall be in lifeboats and 75 percent may be in lifeboats or life rafts of an approved type. Vessels of this class navigating during the interval between May 15 and September 15 in any one year, both dates inclusive, shall be required to be equipped with only such lifeboats and life rafts as will accommodate 10 percent of all persons on board, of which accommodation not less than 25 percent shall be in lifeboats and 75 percent may be in lifeboats or life rafts of an approved type.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

4. Section 76.6 is amended to read as follows:

§ 76.6 *Lifeboats and life rafts required on vessels of class* (d). Vessels of class (d) shall be required to have lifeboat and life raft capacity to accommodate all persons on board. Not less than 75 percent of the total capacity shall be in lifeboats and 25 percent may be in lifeboats or life rafts of an approved type. Vessels of this class navigating during the interval between May 15 and September 15 in any one year, both dates inclusive, shall be required to be equipped with only such lifeboats and life rafts as will accommodate 50 percent of all persons on board, of which accommodation not less than two-fifths shall be in lifeboats, and three-fifths may be in lifeboats or life rafts of an approved type.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

5. Section 76.8 is amended by changing the first undesignated paragraph to read as follows:

§ 76.8 *Lifeboats and life rafts required on vessels of class* (f). Steam vessels of 50 gross tons and over not carrying passengers shall be required to have lifeboat and life raft capacity to accommodate all persons on board, of which accommodation not less than 50 percent shall be in lifeboats and 50 percent may be in lifeboats or life rafts of an approved type.

* * * * *

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

6. Section 76.13 is amended to read as follows:

§ 76.13 *Motor-propelled lifeboats on vessels.* Any vessel under the jurisdiction of the Coast Guard may be allowed to carry one motor-propelled lifeboat as a part of the lifeboat equipment required on such vessel, except that on vessels carrying more than six lifeboats under davits two of such lifeboats may be equipped with motors. Storage of gasoline other than in the lifeboats using it shall not be allowed under any circumstances.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

7. Section 76.14 is amended by changing paragraph (q) and by adding paragraph (v), which paragraphs read as follows:

§ 76.14 *Equipment for lifeboats on vessels of classes* (a), (b), (c), (d), *and* (e). * * *

(q) *Rudder.* One rudder and tiller. For construction of rudder and tiller, see § 160.035–3 (t) of Subchapter Q of this chapter.

* * * * *

(v) *Propellers (hand-operated).* Lifeboats may be fitted with a hand-operated propeller of an approved type, but all lifeboats, except motorboats, having a capacity of 60 or more persons, shall be fitted with a hand-operated propeller of an approved type, constructed in accordance with subpart 160.034 of Subchapter Q of this chapter. The above propelling gear shall be required in all such lifeboats fitted on new vessels and to the lifeboat replacements on existing vessels.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

8. Section 76.14a is amended by changing paragraph (j) and by adding paragraph (l), which paragraphs read as follows:

§ 76.14a *Equipment for lifeboats on vessels of class* (f). * * *

(j) *Steering oar or rudder.* One steering oar with rowlock or becket, or one rudder with tiller. For construction of rudder and tiller, see § 160.035–3 (t) of Subchapter Q of this chapter.

* * * * *

(l) *Propellers (hand-operated).* Lifeboats may be fitted with a hand-operated propeller of an approved type, but all lifeboats, except motorboats, having a capacity of 60 or more persons, shall be fitted with a hand-operated propeller of an approved type, constructed in accordance with subpart 160.034 of Subchapter Q of this chapter. The above propelling gear shall be required in all such lifeboats fitted on new vessels and to the lifeboat replacements on existing vessels.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

9. Section 76.15 is amended to read as follows:

§ 76.15 *How lifeboats shall be carried; davits and cranes required.* (a) All lifeboats on vessels carrying passengers shall, if practicable, be carried under substantial davits, but if it is not practicable to so carry all the lifeboats required, the remainder shall be stowed near at hand, so as to be easily and readily launched. Such davits and necessary gear shall be such as will enable the lifeboats to be lowered to the water in less than 2 minutes from the time the clearing away of the boats is begun.

(b) Each lifeboat carried under davits shall be provided with two separate davits. Such davits and the blocks and falls thereof, on all passenger vessels except ferryboats, shall be of sufficient strength to carry the boat with its full load while maintaining a factor of safety of six.

(c) Vessels of class (e) and (f) shall be equipped with davits or other practicable means for properly launching the lifeboats. Mechanical davits, when installed on vessels of classes (e) and (f), shall be subject to all the tests required by this section.

(d) No type or make of mechanical or gravity davit shall be used unless it has first been approved by the Commandant. For construction of davits, see subpart 160.032 of subchapter Q of this chapter.

(e) No mechanical davits of a character which require manual or other power to turn the boats out to the position for lowering into the water shall be fitted on any vessel the keel of which is laid after September 1, 1941, if such davits are to handle a lifeboat which, without its complement of persons on board, but having on board all air tanks and other lifeboat equipment, exceeds 5,000 pounds total weight; i. e., 2,500 pounds for a single davit arm.

(f) Davits of an approved type, which are capable of swinging the boats into the lowering position without the application of any effort or

external force other than that necessary to operate the releasing mechanism, allowing the boat to move from the stowed position to the lowering position by the force of gravity, shall be provided to handle all lifeboats the total weight of which, including air tanks and lifeboat equipment, but without the complement of persons on board, exceeds 5,000 pounds.

(g) No davit armor frame comprising mechanical or gravity davits shall be placed on board any vessel until all of the requirements of the rules of this section and subpart 160.032 of subchapter Q of this chapter have been fully complied with. Whenever mechanical or gravity davits or parts of davits, such as davit arms, or frames, are installed on vessels to take the place of davits, davit arms, or frames which have become damaged or broken, such davits or frames shall have the manufacturer's name plate affixed thereto.

(R S. 4488, as amended; 46 U. S. C. 1, 481)

10. Section 76.15a is amended to read as follows:

§ 76.15a *Mechanical means for lowering.* (See § 59.3a of this chapter, as amended, which is identical with this section.)

11. Section 76.16 *Drawings, specifications, name plate* is deleted.

12. Section 76.18 is amended to read as follows:

§ 76.18 *Construction of lifeboats.* Lifeboats shall be of an approved type and constructed in accordance with subpart 160.035 of Subchapter Q of this chapter.

13. Section 76.19 *Construction of wooden lifeboats* is deleted.

14. Section 76.20 is amended to read as follows:

§ 76.20 *Air tanks in lifeboats.* (See § 59.30 of this chapter, as amended, which is identical with this section.)

15. Section 76.21 *Carrying capacity of lifeboats* is deleted.

16. Section 76.23 is amended to read as follows:

§ 76.23 *Lifeboats and life rafts kept clear for launching.* (See § 59.36 of this chapter as amended, which is identical with this section.)

17. Section 76.26 is amended to read as follows:

§ 76.26 *Tests of lifeboats at annual inspection.* (See § 59.39 of this chapter, as amended, which is identical with this section.)

18. Section 76.28 *Inclosed lifeboats* is deleted.

19. Section 76.32 *Life rafts: Drawings, specifications, name plates, and how marked* is deleted.

20. Section 76.34 is amended to read as follows:

§ 76.34 *Construction of life rafts.* Life rafts shall be of an approved type and constructed in accordance with subpart 160.018 of Subchapter Q of this chapter.

21. Section 76.37 *Approved life rafts* is deleted.

22. Section 76.51a is amended to read as follows:

§ 76.51a *Buoyant apparatus.* (See § 60.47a of this chapter, as amended, which is identical with this section.)

23. Section 76.54 *Self-igniting water lights* is deleted.

24. Part 76 is amended by adding a new § 76.55 reading as follows:

§ 76.55 *Steering apparatus: Existing installations.* (See § 59.62 of this chapter, as amended, which is identical with this section.)

25. Section 76.56 is amended to read as follows:

§ 76.56 *Steering apparatus; new installations.* (a) All new vessels and all replacements on existing vessels shall have suitable means of steering capable of swinging the rudder from hard right to hard left in 30 seconds with the vessel proceeding ahead at the maximum design speed. An additional effective auxiliary means shall be provided for actuating the rudder through an independent tiller, or its equivalent, designed to swing the rudder from 15 degrees right of center to 15 degrees left of center within 60 seconds with the vessel proceeding at one-half the maximum design speed or seven knots, whichever is the greater.

(b) The main steering gear on vessels exceeding 250 feet in length shall be power driven and approved means shall be provided for operating the auxiliary steering gear.

(c) An auxiliary steering gear consisting of a block and tackle operating an independent tiller of suitable design so arranged as to be operated by a power driven winch or other suitable machinery is considered a satisfactory auxiliary power steering gear.

(d) When the main steering gear is of the double-acting dual-power hydraulic type attached to a yoke on the rudder post an auxiliary steering gear secured to a separate tiller is not required provided the yoke of the main gear is designed for strength in excess of that of the rudder stock.

(e) Small vessels where the main quadrant or tiller is of suitable design, located above the deck and provided with acceptable means for attaching a block and tackle for emergency steering gear, are not required to have a separate auxiliary tiller.

(f) Power driven main steering gears shall be fitted with positive means for stopping the gear before the rudder stops are reached. The arrangement shall be synchronized with the movement of the rudder stock or position of the gear rather than with the steering gear control system.

(g) Vessels fitted with power-operated steering gear shall have suitable buffers fitted to prevent damage caused by the quadrant striking stops and shock being transmitted to the gear.

(h) An emergency steering wheel shall be located on the after weather deck of vessels in which power driven steering gear is installed except for arrangements wherein the Commandant considers such impracticable. Suitable means of communication shall be provided between the pilothouse, the emergency steering station, and the steering engine room.

(i) Steering wheels at steering stations shall be installed in a vertical position and arranged for steering by the helmsman when standing abaft the wheel and facing forward. The top of the steering wheel, the rudder blades, and the head of the ship shall move in the same direction.

(j) When a "trick" wheel is installed in the steering gear room for use in warming up and testing the gear as well as for steering purposes, and the wheel is installed in a vertical position, it shall meet the requirements of paragraph (i) of this section.

(k) If the "trick" wheel is installed in a horizontal position it shall turn in a clockwise direction for "right rudder" and in a counterclockwise direction for "left rudder". With this arrangement, the helmsman need not stand abaft the wheel.

(l) Where "trick" wheel or other device is installed in the steering gear room for the sole purpose of warming up and testing the gear, it may be installed to best suit design and operating conditions of the gear. A plate shall be fitted on this wheel or device with indicating arrows showing the direction of movement to produce "right rudder" and "left rudder".

(m) When auxiliary steering gear is installed in lieu of relieving tackles, the steering wheel or device used for operating the gear shall meet all requirements given in paragraph (i) of this section.

(n) At all steering stations, there shall be installed a suitable notice on

the wheel or device, or in such other position as to be directly in the helmsman's line of vision, to indicate the direction in which the wheel or device must be turned for "right rudder" and for "left rudder".

(o) Where no regular rudder is fitted and steering action is obtained by a change of setting of the propelling unit, emergency steering gear is not required nor will the requirements of this section generally be applicable. Special consideration will be given by the Commandant for such installations.

(p) The arrangement of piping for hydraulic gears shall be such that a change from the main to the auxiliary gear can be readily effected. A relief valve shall be provided for the protection of the hydraulic system. Pressure piping shall meet the requirements of Part 55 of Subchapter F (Marine Engineering) of this chapter.

(R. S. 4480, as amended, 46 U. S. C. 1, 473)

26. Section 76.62 is amended to read as follows:

§ 76.62 *Disengaging apparatus.* Lifeboats shall be fitted with suitable disengaging apparatus. Mechanical disengaging apparatus, if fitted, shall be of an approved type and constructed in accordance with subpart 160.033 of Subchapter Q of this chapter. Excluding the emergency boats, not more than one type of releasing gear shall be fitted in the lifeboats of a particular vessel.

(R. S. 4488 and 4491, as amended; 46 U. S. C. 1, 481, 489)

PART 79—INSPECTION OF VESSELS

1. Section 79.21 *Copies of specifications and/or blueprints* is deleted.

Subchapter I—Bays, Sounds, and Lakes Other Than the Great Lakes: General Rules and Regulations

PART 94—BOATS, RAFTS, BULKHEADS, AND LIFESAVING APPLIANCES

1. Section 94.2 is amended by changing the last undesignated paragraph to read as follows:

§ 94.2 *Lifeboats and life rafts required on steam vessels carrying passengers.* * * *

Three-fourths of the lifeboat capacity required on lake, bay, and sound steam vessels carrying passengers may be in approved life rafts. Approved life floats may be substituted for life rafts on vessels carrying passengers operated south of the thirty-third parallel of north latitude and on vessels carrying passengers operated north of the thirty-third parallel of north latitude during the interval between the 15th day of May to the 15th day of October, in any one year, both dates inclusive.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

2. Section 94.3 is amended to read as follows:

§ 94.3 *Lifeboats required on steam vessels of 50 gross tons and over not carrying passengers.* All steam vessels other than steam vessels carrying passengers, except as otherwise hereinafter provided for, shall be equipped with lifeboats of sufficient capacity to accommodate at one time all persons on board. One-half of such equipment may be in approved life rafts.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

3. Section 94.9 is amended to read as follows:

§ 94.9 *Wooden surfboat or seine boat.* Vessels engaged exclusively in the business of seine fishing or wrecking may substitute a wooden surfboat or wooden seine boat for the lifeboat as described by § 94.17.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

4. Section 94.12 is amended to read as follows:

§ 94.12 *Motor-propelled lifeboats on vessels.* (See § 76.13 of this chapter, as amended, which is identical with this section.)

5. Section 94.13 is amended by changing paragraph (l) and by adding a new paragraph (n), which paragraphs read as follows:

§ 94.13 *Equipment for lifeboats.* * * *

(l) *Steering oar or rudder.* One steering oar with rowlock or becket, or rudder with tiller. For construction of rudder and tiller, see § 160.035–3 (t) of Subchapter Q of this chapter.

* * * * *

(n) *Propellers (hand-operated).* Lifeboats may be fitted with a hand-operated propeller of an approved type, but all lifeboats, except motorboats, having a capacity of 60 or more persons, shall be fitted with a hand-operated propeller of an approved type, constructed in accordance with subpart 1606.034 of Subchapter Q of this chapter. The above propelling gear shall be required in all such lifeboats fitted on new vessels and to the lifeboat replacements on existing vessels.

(R. S. 4488, as amended; 46 U. S. C. 481)

6. Section 94.14 is amended to read as follows:

§ 94.14 *How lifeboats shall be carried; davits and cranes required.* (a) All lifeboats on vessels carrying passengers shall, if practicable, be carried under substantial davits or cranes, but if it is not practicable so to carry all the lifeboats required, the remainder shall be stowed near at hand, so as to be easily and readily launched. Such davits, cranes, and necessary gear shall be such as will enable the lifeboats to be lowered to the water in less than two minutes from the time the clearing away of the boats is begun.

(b) Each lifeboat carried under davits shall be provided with two separate davits. When a single crane is properly adapted to lower a lifeboat, it may be allowed to take the place of the two davits. Such davits or cranes, and the blocks and falls thereof, on all passenger vessels except ferryboats, shall be of sufficient strength to carry the boat with its full load.

(c) All steam vessels, other than steam vessels carrying passengers, shall be equipped with davits or other practicable means for launching the lifeboats. Mechanical davits, when installed on steam vessels not carrying passengers, shall be subject to all the tests required by this section.

(d) No type or make of mechanical or gravity davit shall be used unless it has first been approved by the Commandant.

(e) No mechanical davits of a character which require manual or other power to turn the boats out to the position for lowering into the water shall be fitted on any vessel the keel of which is laid after September 1, 1941, if such davits are to handle a lifeboat which, without its complement of persons on board, but having on board all air tanks and other lifeboat equipment, exceeds 5,000 pounds total weight; i. e., 2,500 pounds for a single davit arm.

(f) Davits of an approved type, which are capable of swinging the boats into the lowering position without the application of any effort or external force other than that necessary to operate the releasing mechanism, allowing the boat to move from the stowed position to the lowering position by the force of gravity, shall be provided to handle all lifeboats the total weight of which, including air tanks and lifeboat equipment, but without the complement of persons on board, exceeds 5,000 pounds.

(g) No davit arm or frame comprising mechanical or gravity davits shall be placed on board any vessel until all of the requirements of the rules of this section and subpart 160.032 of Subchapter Q of this chap-

ter have been fully complied with. Whenever mechanical or gravity davits or parts of davits, such as davit arms, or frames, are installed on vessels to take the place of davits, davit arms, or frames which have become damaged or broken, such davits or frames shall have the manufacturer's name plate affixed thereto.

(R. S. 4488, as amended; 46 U. S. C. 1, 481)

7. Section 94.14a is amended to read as follows:

§ 94.14a *Mechanical means for lowering.* (See § 59.3a of this chapter, as amended, which is identical with this section.)

8. Section 94.15 *Drawings, specifications, name plate* is deleted.

9. Section 94.17 is amended to read as follows:

§ 94.17 *Construction of lifeboats.* Lifeboats shall be of an approved type and constructed in accordance with subpart 160.035 of Subchapter Q of this chapter.

10. Section 94.18 *Construction of wooden lifeboats* is deleted.

11. Section 94.19 is amended to read as follows:

§ 94.19 *Air tanks in lifeboats.* (See § 59.30 of this chapter, as amended, which is identical with this section.)

12. Section 94.20 *Carrying capacity of lifeboats* is deleted.

13. Section 94.22 is amended to read as follows:

§ 94.22 *Lifeboats and life rafts kept clear for launching.* (See § 59.36 of this chapter, as amended, which is identical with this section.)

14. Section 94.25 is amended to read as follows:

§ 94.25 *Tests of lifeboats at annual inspection.* (See § 59.39 of this chapter, as amended, which is identical with this section.)

15. Section 94.29 *Inclosed lifeboats* is deleted.

16. Section 94.32 *Life rafts: Drawings, specifications, name plate, and how marked* is deleted.

17. Section 94.34 is amended to read as follows:

§ 94.34 *Construction of life rafts.* Life rafts shall be of an approved type and constructed in accordance with subpart 160.018 of Subchapter Q of this chapter.

18. Section 94.35 *Capacity and allowance of catamaran life rafts* is deleted.

19. Section 94.38 *Approved life rafts* is deleted.

20. Section 94.54 is amended to read as follows:

§ 94.54 *Steering apparatus; existing installations.* (See § 59.62 of this chapter, as amended, which is identical with this section.)

21. Section 94.55 is amended to read as follows:

§ 94.55 *Steering apparatus; new installations.* (See § 76.56 of this chapter, as amended, which is identical with this section.)

22. Section 94.59 is amended to read as follows:

§ 94.59 *Disengaging apparatus.* (See § 76.62 of this chapter, as amended, which is identical with this section.)

PART 97—INSPECTION OF VESSELS

1. Section 97.19 *Copies of specifications and/or blueprints* is deleted.

PART 102—BAY, SOUND, AND LAKE STEAM YACHTS

1. Section 102.3 *Carrying capacity of lifeboats* is deleted.

2. Section 102.6 *Drawings, specifications, name plate* is deleted.

Subchapter J—Rivers: General Rules and Regulations

PART 113—BOATS, RAFTS, BULKHEADS, AND LIFESAVING APPLIANCES

1. Section 113.4 is amended to read as follows:

§ 113.4 *Lifeboats and life rafts or life floats required on steam vessels carrying passengers.* Steam vessels carrying passengers shall be equipped with lifeboats of sufficient capacity to accommodate at one time at least 10 percent of all persons on board, including passengers and crew. Three-fourths of such equipment may be in approved life rafts or approved life floats.

(R. S. 4481, as amended; 46 U. S. C. 1, 474)

2. Section 113.6 is amended to read as follows:

§ 113.6 *Motor-propelled lifeboats on vessels.* (See § 76.13 of this chapter, as amended, which is identical with this section.)

3. Section 113.7 is amended to read as follows:

§ 113.7 *Wooden surfboat or seine boat.* Vessels engaged exclusively in the business of seine fishing or wrecking may substitute a wooden surfboat or wooden seine boat for the lifeboat described in subpart 160.035 of Subchapter Q of this chapter, provided the capacity of such surfboat or seine boat is calculated in accordance with § 160.035–8 of Subchaper Q of this chapter.

(R. S. 4481, as amended; 46 U. S. C. 1, 474)

4. Section 113.10 *Lifeboats: Drawings, specifications, name plate* is deleted.

5. Section 113.12 is amended to read as follows:

§ 113.12 *Air tanks in lifeboats.* (See § 59.30 of this chapter, as amended, which is identical with this section.)

6. Section 113.13 is amended to read as follows:

§ 113.13 *Construction of lifeboats.* Lifeboats shall be of an approved type and constructed in accordance with subpart 160.035 of Subchapter Q of this chapter.

7. Section 113.14 *Carrying capacity of lifeboats* is deleted.

8. Section 113.15 *Capacity of metal, scow-shaped lifeboats* is deleted.

9. Section 113.16 is amended to read as follows:

§ 113.16 *Tests of lifeboats at annual inspection.* (See § 59.39 of this chapter, as amended, which is identical with this section.)

10. Section 113.19 *Inclosed lifeboats* is deleted.

11. Section 113.22 is amended by changing paragraph (l) and by adding a new paragraph (n), which paragraphs read as follows:

§ 113.22 *Equipment for lifeboats on vessels on all rivers except western rivers whose waters flow in the Gulf of Mexico and the Yukon River.*

* * *

(l) *Steering oar or rudder.* One steering oar with rowlock or becket, or rudder with tiller. For construction of rudder and tiller see § 160.035–3 (t) of Subchapter Q of this chapter.

* * * * *

(n) *Propellers (hand-operated).* Lifeboats may be fitted with a hand-operated propeller of an approved type, but all lifeboats, except motorboats, having a capacity of 60 or more persons, shall be fitted with a hand-operated propeller of an approved type, constructed in accordance with subpart 160.034 of Subchapter Q of this chapter. The above propelling gear shall be required in all such lifeboats fitted on new vessels and to lifeboat replacements on existing vessels.

(R. S. 4481, as amended; 46 U. S. C. 1, 474)

12. Section 113.23 is amended to read as follows:

§ 113.23 *How lifeboats shall be carried; davits and cranes required.* (a)

All lifeboats on vessels carrying passengers shall, if practicable, be carried under substantial davits or cranes, but if it is not practicable so to carry all the lifeboats required, the remainder shall be stowed near at hand, so as to be easily and readily launched. Such davits, cranes, and necessary gear shall be such as will enable the lifeboats to be lowered to the water in less than 2 minutes from the time the clearing away of the boats is begun.

(b) Each lifeboat carried under davits shall be provided with two separate davits. When a single crane is properly adapted to lower a lifeboat, it may be allowed to take the place of the two davits. Such davits or cranes and the blocks and falls thereof, on all passenger vessels except ferryboats, shall be of sufficient strength to carry the boat with its full load.

(c) All steam vessels, other than steam vessels carrying passengers, shall be equipped with davits or other practicable means for launching the lifeboats. Mechanical davits, when installed on steam vessels not carrying passengers, shall be subject to all the tests required by this section.

(d) No type or make of mechanical or gravity davit shall be used unless it has first been approved by the Commandant.

(e) No mechanical davits of a character which require manual or other power to turn the boats out to the position for lowering into the water shall be fitted on any vessel the keel of which is laid after December 31, 1942, if such davits are to handle a lifeboat which, without its complement of persons on board, but having on board all air tanks and other lifeboat equipment, exceeds 5,000 pounds total weight; i. e., 2,500 pounds for a single davit arm.

(f) Davits of an approved type, which are capable of swinging the boats into the lowering position without the application of any effort or external force other than that necessary to operate the releasing mechanism, allowing the boat to move from the stowed position to the lowering position by the force of gravity, shall be provided to handle all lifeboats the total weight of which, including air tanks and lifeboat equipment, but without the complement of persons on board, exceeds 5,000 pounds.

(g) No davit arm or frame comprising mechanical or gravity davits shall be placed on board any vessel until all the requirements of the rules of this section and subpart 160.032 of Subchapter Q of this chapter have been fully complied with. Whenever mechanical or gravity davits or parts of davits, such as davit arms, or frames, are installed on vessels to take the place of davits, davit arms, or frames which have become damaged or broken, such davits or frames shall have the manufacturer's name plate affixed thereto.

13. Section 113.25 is amended to read as follows:

§ 113.25 *Lifeboats and life rafts kept clear for launching.* (See § 59.36 of this chapter, as amended, which is identical with this section.)

14. Section 113.29 *Life rafts: Drawings, specifications, name plate, and how marked* is deleted.

15. Section 113.31 is amended to read as follows:

§ 113.31 *Construction of life rafts.* Life rafts shall be of an approved type and constructed in accordance with subpart 160.018 of Subchapter Q of this chapter.

16. Part 113 is amended by adding a new § 113.32 reading as follows:

§ 113.32 *Tests of air tanks of life rafts.* Before any life raft is passed and accepted, the air tanks thereof shall be tested in the presence of an inspector by an air pressure of not more than 1 pound to the square inch. At each subsequent annual inspection, or oftener, if in the opinion of the inspectors it is necessary or desirable, the inspectors shall satisfy themselves that the tanks are in good condition, but pressure need not be applied unless the inspectors are in doubt regarding the efficiency of the tanks. This does not take from the inspectors the right and authority to satisfy themselves at any time, either by examination or pressure, as to the condition of the tanks.

17. Section 113.41 *Carrying capacity of catamaran life rafts* is deleted.

18. Section 113.45 is amended to read as follows:

§ 113.45 *Wood floats.* (a) Vessels navigating rivers and carrying passengers shall be allowed to use wood floats, one for each deck or steerage passenger, which shall be constructed in accordance with subpart 160.039 of Subchapter Q of this chapter.

(b) At each annual inspection of any vessel, and oftener if deemed necessary, it shall be the duty of the inspectors making the inspection to examine and inspect all wood floats in the equipment of such vessel for compliance with the requirements of subpart 160.039 of Subchapter Q of this chapter. When found to be in accordance with the requirements, the inspector shall plainly stamp such wood floats with a stamp bearing the word "Passed", his initials, the inspector's port, and date.

(R. S. 4482, as amended; 46 U. S. C. 1, 475)

19. Section 113.46a is amended to read as follows:

§ 113.46a *Steering apparatus; existing installations.* (See § 59.62 of this chapter, as amended, which is identical with this section.)

20. Section 113.47 is amended to read as follows:

§ 113.47 *Steering apparatus; new installations.* (See § 76.56 of this chapter, as amended, which is identical with this section.)

PART 116—INSPECTION OF VESSELS

1. Section 116.19 *Copies of specifications and/or blueprints* is deleted.

Subchapter Q—Specifications

PART 160—LIFESAVING EQUIPMENT

Part 160 is amended by adding the new subparts 160.012, 160.015, 160.032, 160.033, 160.034, and 160.035, which read as follows:

SUBPART 160.012—LIGHTS, WATER: SELF-IGNITING (CALCIUM CARBIDE—CALCIUM PHOSPHIDE TYPE), FOR MERCHANT VESSELS

Sec.

SUBPART 160.015—LIFEBOAT WINCHES FOR MERCHANT VESSELS

SUBPART 160.032—DAVITS FOR MERCHANT VESSELS

SUBPART 160.033—MECHANICAL DISENGAGING APPARATUS, LIFEBOAT, FOR MERCHANT VESSELS

SUBPART 160.034—HAND PROPELLING GEAR, LIFEBOAT, FOR MERCHANT VESSELS

Sec.
160.034–1 Applicable specifications.
160.034–2 General requirements for hand propelling gear.
160.034–3 Construction of hand propelling gear.
160.034–4 Inspection and testing of hand propelling gear.
160.034–5 Procedure for approval of hand propelling gear.

SUBPART 160.035—LIFEBOATS FOR MERCHANT VESSELS

160.035–1 Applicable specifications.
160.035–2 General requirements for lifeboats.
160.035–3 Construction of steel oar-propelled lifeboats.
160.035–4 Construction of steel hand-propelled lifeboats.
160.035–5 Construction of steel motor-propelled lifeboats, with and without radio cabin.
160.035–6 Construction of aluminum oar-, hand-, and motor-propelled lifeboats.
160.035–7 Construction of wood oar-, hand-, and motor-propelled lifeboats.
160.035–8 Cubic capacity of lifeboats.
160.035–9 Number of persons allowed in lifeboats.
160.035–10 Inspection and testing of lifeboats.
160.035–11 Procedure for approval of lifeboats.

PART 164—MATERIALS

Part 164 is amended by adding the new subparts 164.008 and 164.009, which read as follows:

SUBPART 164.008—BULKHEAD PANELS FOR MERCHANT VESSELS

164.008–1 Applicable specifications.
164.008–2 Material.
164.008–3 Inspection and testing.
164.008–4 Procedure for approval.

SUBPART 164.009—INCOMBUSTIBLE MATERIALS FOR MERCHANT VESSELS

164.009–1 Applicable specifications.
164.009–2 Material.
164.009–3 Inspection and testing.
164.009–4 Procedure for approval.

The specifications for lifesaving equipment, bulkhead panels for merchant vessels, and incombustible materials for merchant vessels have not been reprinted herein because of insufficient space. Copies of specifications may be obtained upon request from the Commandant (HA), United States Coast Guard Headquarters, Washington 25, D. C.

Dated: August 11, 1949.

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

[F. R. Doc. 49-6694; Filed, Aug. 16, 1949; 8:49 a. m., 14 F. R. 5079]

Equipment Approved by the Commandant

ELECTRICAL APPLIANCES

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

Manufacturer and description of equipment	Location apparatus may be used				Date of action
	Passenger and crew quarters and public spaces	Machinery, cargo, and work spaces	Open decks	Pump rooms of tank vessels	
Alco Valve Co., New York, N. Y.:					
Liquid solenoid stop valve, type 632; 115, 230 and 460 V A. C.; 115 and 230 V D. C.; 150 p. s. i. max.; Dwg. F941, Alt. 0	x	x	.....	.....	6/28/49
Liquid solenoid stop valve, type 633; 115, 230 and 460 V A. C.; 115 and 230 V D. C.; 150 p. s. i. max.; Dwg. F942, Alt. 0	x	x	.....	.....	6/28/49
Liquid solenoid stop valve, type 627; 115, 230 and 460 V A. C.; 115 and 230 V D. C.; 150 p. s. i. max.; Dwg. F943, Alt. 0	x	x	.....	.....	6/28/49
Liquid solenoid stop valve, type 621; 115, 230 and 460 V A. C.; 115 and 230 V D. C.; 150 p. s. i. max.; Dwg. F944, Alt. 0	x	x	.....	.....	6/28/49
Liquid solenoid stop valve, type M6N; 115, 230 and 460 V A. C.; 115 and 230 V D. C.; 150 p. s. i. max.; Dwg. F945, Alt. 0	x	x	.....	.....	6/28/49
Liquid solenoid stop valve, type S2N; 115, 230 and 460 V A. C.; 115 and 230 V D. C.; 150 p. s. i. max.; Dwg. F946, Alt. 0	x	x	.....	.....	6/28/49
Liquid solenoid stop valve, type M3N 115, 230 and 460 V A. C.; 115 and 230 V D. C.; 150 p. s. i. max.; Dwg. F947, Alt. 0	x	x	.....	.....	6/28/49
Liquid solenoid stop valve, type S1N 115, 230 and 460 V A. C.; 115 and 230 V D. C.; 150 p. s. i. max.; Dwg. F948, Alt. 0	x	x	.....	.....	6/28/49
Crouse-Hinds Co., Syracuse, N. Y.:					
Floodlight, watertight, 12", 1 250-watt lamp max., Cat. Nos. 42428M, 42429M, 44537M, and 44538M, Dwg. No. 1555–BH	x	x	x	.....	7/21/49
The Dayton Mfg. Co., Dayton, Ohio:					
Fluorescent ceiling light, watertight, Fixture Nos. C-10841 to C-10846 incl., Dwg. No. 49K1018, Rev. 0	x	x	.....	.....	6/27/49
Diamond Power Specialty Corp., Detroit, Mich.:					
Bi-color illuminator for marine service, group 2, series M-1000, and group 1, series M-600, 4 50-watt lamps max., dripproof, Dwg. No. C-1406-1, Rev. 0	x	x	.....	.....	6/ 6/49
Edwards & Co., Inc., Norwalk, Conn.:					
Vibrating bell, watertight, 8", D. C. only, Cat. No. 1770, Dwg. No. 7844, Alt. 0	x	x	.....	.....	6/24/49
Vibrating bell, watertight, 10", D. C. only, Cat. No. 1770, Dwg. No. 7844–A, Alt. 0	x	x	.....	.....	6/24/49
Vibrating bell, watertight, 6", D. C. only, Cat. No. 1770, Dwg. No. 7844–B, Alt. 0	x	x	.....	.....	6/24/49
Cow bell, watertight, D. C. only, Cat. No. 1770, Dwg. No. 7844–C, Alt. 0	x	x	.....	.....	6/24/49
Vibrating bell, 3", A. C. only, watertight, Cat. No. 1770, Dwg. No. 7841, Alt. 0	x	x	.....	.....	6/24/49
Vibrating bell, 4", watertight, A. C. only, Cat. No. 1770, Dwg. No. 7841–A, Alt. 0	x	x	.....	.....	6/24/49
Electromode Corp., Rochester, N. Y.:					
Electric air heater, explosion-proof, Underwriters' Laboratories, Inc. approval listing Guide No. 165E1, File E19597, dated March 9, 1949, for class I, group D locations, Cat. Nos. 6200–A, to 6200–H incl., Dwg. No. D-6200, Rev. B	x	x	x	x	6/15/49
Mr. Eugene Fraser, Brooklyn, N. Y.:					
Dual grip terminal tube, Dwg. No. E. F.-3, Rev. 1	x	x	x	.....	6/16/49
General Electric Co., Washington, D. C.:					
Floodlight, type LS4, watertight, 1 500-watt lamp max., Dwg. No. T-9457839, Rev. 2	x	x	x	.....	6/ 1/49
Henschel Corp., Amesbury, Mass.:					
Running light panel for double lens type navigation lights, non-automatic, 5-circuit, 115 V A. C., Dwg. No. 40-042-1, Alt. 0	x	x	.....	.....	6/21/49

Manufacturer and description of equipment	Location apparatus may be used				Date of action
	Passenger and crew quarters and public spaces	Machinery, cargo, and work spaces	Open decks	Pump rooms of tank vessels	
Hensehel Corp., Amesbury, Mass.—Continued					
Mechatical telegraph indicator with reply, 16", Dwg. No. 11-103, Alt. 3	x	x			6/22/49
Mechanical telegraph indicator without reply, 16", Dwg. No. 11-104, Alt. 3	x	x			6/22/49
Landis & Gyr, Inc., New York, N. Y.:					
Electric clock system, 12 or 24 volts D. C., Dwg. No. A-59129, Alt. 0 and E-59194, Alt. 0	x	x			6/ 7/49
Lovell-Dressel Co., Inc., Arlington, N. J.:					
Cargo hold fixture, watertight, 1 100-watt lamp max., Dwg. No. M-5390, Alt. 1	x	x	x		6/28/49
Murlin Mfg. Co., Philadelphia, Pa.:					
Ceiling light, fluorescent, nonwatertight, 2 20-watt lamps, Dwg. No. 962, Alt. 1	x				7/12/49
Pilot Marine Corp., New York, N. Y.:					
Salinity indicator, model No. S3A5-2, circuit diagram, Dwg. No. PM-650H, Alt. 4, panel interior, Dwg. No. PM-652C, Alt. 4	x	x			6/14/49
Salinity indicator power relay for dumping valve solenoid, coil 115 V A. C., contacts 440 V A. C., 10-ampere	x	x			7/21/49
The Pyle-National Co., Washington, D. C.:					
Vaportight lighting fixture with guard and globe, 1 40-watt lamp max., Cat. No. BOLB-110, Dwg. No. 21351-C, Alt. 0	x	x			7/15/49
The Simes Co., College Point, L. I., N. Y.:					
Mirror light, nonwatertight, 2 40-watt lamps max., Dwg. No. 44129-M, Alt. 0	x				6/15/49
Toilet case light, nonwatertight, 2 40-watt lamps max., Dwg. No. 44129, Alt. 0	x				6/15/49
Ceiling light, nonwatertight, 1 100-watt lamp max., Dwg. No. 44128, Alt. 0	x				6/15/49
Ceiling light and air diffuser combination, nonwatertight, 4 60-watt lamps max., Dwg. No. 44130, Alt. 0	x				6/21/49
Berth light, nonwatertight, 1 40-watt lamp max., Dwg. No. 44125, Chg. II	x				7/12/49
Passage light, nonwatertight, fluorescent, 2 15-watt lamps, Dwg. No. 44126-F, Chg. II	x				7/12/49

AFFIDAVITS

The following affidavits were accepted from July 15 to August 15, 1949:

Gimpel Machine Works, Inc., 2335–45 North Seventh Street, Philadelphia 33, Pa. Valves.

Thomas A. Short Co., 245 Fremont Street, San Francisco 5, Calif. Valves and fittings.

F. G. Valves, Inc., 1300 East Park Place, Milwaukee 11, Wis. Valves.

CERTIFICATION OF ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from July 25 to August 25, 1949, inclusive, for use on board vessels in accordance with the provisions of part 147 of the regulations governing explosives or other dangerous articles on board vessels are as follows:

Sanson Brothers, 145 Quaker Ridge Road, Manhasset, Long Island, N. Y. Certificate No. 287, dated August 12, 1949, "Syn-Solv."

Ro-Ed Sales Co., 77 River Street, Hoboken, N. J. Certificate No. 288, dated August 18, 1949, "Ro-Ed Fuel Oil Sludge Solvent."

James Varley & Sons, Inc., 1200 Switzer Avenue, St. Louis 15, Mo. Certificate No. 289, dated August 23, 1949, "Concentrated Vaporizing Insecticide."

Deco Products Co., Inc., 421 West One hundred twenty-sixth Street, New York 27, N. Y. Certificate No. 290, dated August 23, 1949, "Coal Tar Disinfectant."

Leadership Products Corp., 135–21 Northern Boulevard, Flushing, L. I., N. Y. Certificate No. 291, dated August 24, 1949, "Scramsludge-Dual."

TERMINATION OF APPROVAL OF EQUIPMENT

[CGFR 49–33]

By virtue of the authority vested in me as Commandant, United States Coast Guard, by R. S. 4405 and 4491, as amended, 46 U. S. C. 375, 489; and section 101 of Reorganization Plan No. 3 of 1946, 11 F. R. 7875, 60 Stat. 1097, 46 U. S. C. 1, as well as the additional authorities cited with specific items below, the following approvals of equipment are terminated because the items of equipment covered are no longer being manufactured:

RANGES, LIQUEFIED PETROLEUM GAS BURNING

Termination of Approval No. 162.020/1/0, Garland liquefied propane gas range, Type 83–24, tested and approved by the American Gas Association, Dwg. dated February 28, 1945, Specification sheet "Garland Restaurant Gas Ranges," manufactured by Detroit-Michigan Stove Co., 6900 Jefferson Avenue, Detroit, Mich. (Approved Federal Register July 31, 1947.)

(R. S. 4417a, 4426, 49 Stat. 1544, 54 Stat. 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 463a, 1333, 50 U. S. C. 1275; 46 CFR 32.9–11, 61.25, 95.24, 114.25)

BOILERS, POWER

Termination of Approval No. 162.002/70/0, Vapor-Clarkson steam boiler, forced recirculation water tube boiler, spiral economizer and steam generating coils; fitted with separate condensate and steam chamber, self-contained "package" steam generator; welded steel plate construction, Dwg. No. 60057a, dated May 24, 1943, and catalog No. 1010 approved for boiler sizes 500 to 3,000 pounds per hour steam generating capacity, manufactured by Vapor Car Heating Co., East Jackson Boulevard, Chicago, Ill. (Approved Federal Register July 31, 1947.)

Termination of Approval No. 162.-002/71/0, Vapor-Clarkson steam boiler, Type No. DA–230–5105 forced recirculation water tube boiler, spiral economizer and steam generating coils; fitted with separate condensate and steam chamber; self-contained "package" steam generator, welded steel plate construction; Dwg. No. 60026 dated August 5, 1942, manufactured by Vapor Car Heating Co., 80 East Jackson Boulevard, Chicago, Ill. (Approved Federal Register July 31, 1947.)

(R. S. 4417a, 4418, 4433, 4434, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 392, 411, 412, 1333, 50 U. S. C. 1275; 46 CFR Part 52)

CONDITIONS OF TERMINATION OF APPROVALS

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

Dated: August 2, 1949.

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

[F. R. Doc. 49–6409; Filed, Aug. 5, 1949; 8:51 a. m.; 14 F. R. 4890]

Merchant Marine Personnel Statistics

MERCHANT MARINE LICENSES ISSUED DURING JULY 1949

DECK OFFICERS

		Region								Total	
		Atlantic coast		Gulf coast		Great Lakes and rivers		Pacific coast			
		O	R	O	R	O	R	O	R	O	R
Master	Ocean	21	114	9	31	0	4	9	48	39	197
	Coastwise	1	14	2	6	0	1	0	3	3	24
	Great Lakes	0	0	0	0	1	5	1	0	2	5
	B. S. & L.	6	40	0	2	0	1	1	3	7	46
	Rivers	1	2	3	3	7	17	2	0	13	22
Chief mate	Ocean	21	28	9	7	0	3	10	16	40	54
	Coastwise	0	3	0	0	0	0	0	0	0	3
Second mate	Ocean	22	22	8	5	0	2	7	10	37	42
	Coastwise	0	0	0	0	0	0	0	0	0	0
Third mate	Ocean	11	34	3	8	0	8	6	16	20	66
	Coastwise	0	1	0	0	0	0	0	0	0	1
Mate	Great Lakes	0	0	0	0	0	0	0	0	0	0
	B. S. & L.	3	3	1	0	0	0	2	6	6	12
	Rivers	0	0	0	1	9	12	0	1	9	14
Pilots	B. S. L. & R.	62	106	20	21	55	40	13	24	150	191
Master	Uninspected vessels	2	0	0	0	0	0	5	1	7	1
Mate	Uninspected vessels	0	0	0	0	0	0	2	0	2	0
Total		150	367	55	84	72	93	58	128	335	672
Grand total		517		139		165		186		1,007	

ENGINEER OFFICERS

Steam	Chief engineer:										
	Unlimited	20	95	5	48	0	9	2	47	27	199
	Limited	6	40	0	12	3	32	0	6	9	90
	First assistant engineer:										
	Unlimited	14	33	10	12	0	6	10	29	34	80
	Limited	0	1	0	2	3	9	0	1	3	13
	Second assistant engineer:										
	Unlimited	19	66	3	17	0	18	8	28	30	129
	Limited	0	1	0	0	2	8	0	0	2	9
	Third assistant engineer:										
	Unlimited	13	56	5	19	2	26	3	21	23	122
	Limited	0	1	0	0	1	1	0	0	1	2
Motor	Chief engineer:										
	Unlimited	2	22	2	4	0	4	2	14	6	44
	Limited	12	29	3	8	7	6	5	9	27	52
	First assistant engineer:										
	Unlimited	1	4	0	0	0	1	0	0	1	5
	Limited	4	0	0	2	0	0	0	1	4	3
	Second assistant engineer:										
	Unlimited	0	4	0	0	0	2	0	3	0	9
	Limited	0	0	0	0	0	0	1	0	1	0
	Third assistant engineer:										
	Unlimited	11	83	2	23	0	42	3	45	16	193
	Limited	0	0	0	0	0	0	0	0	0	0
Uninspected vessels	Chief engineer	0	0	0	0	0	0	1	0	1	0
	Assistant engineer	0	0	0	0	0	0	5	0	5	0
Total		102	435	30	147	18	164	40	204	190	950
Grand total		537		177		182		244		1,140	

IF YOU WANT TO BE IDLE—BE CARELESS

HEED WARNING SIGNS—THEY DO HAVE A PURPOSE

ORIGINAL SEAMEN'S DOCUMENTS ISSUED MONTH OF JULY 1949

Region	(1) Staff officer	(2) Continuous discharge book	(3) United States 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	25	1	523	147	56	----	----	1	----	227	133	4	385	4
Gulf coast	11	3	236	45	27	11	----	----	----	109	58	5	184	16
Pacific coast	20	----	262	56	40	6	----	----	----	270	56	4	240	4
Great Lakes and rivers	2	2	620	22	110	65	----	----	----	94	73	----	561	22
Total	58	6	1,641	270	233	82	0	1	0	700	320	13	1,370	46

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

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

WAIVERS OF MANNING REQUIREMENTS FROM JULY 1 TO JULY 30, 1949

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	1	----	----	----	----	----	----	1	----	1
Gulf coast	----	----	----	----	----	----	----	----	----	----
Pacific coast	1	----	----	----	1	----	----	----	----	1
Great Lakes	----	----	----	----	----	----	----	----	----	----
Total	2	----	----	----	1	----	----	1	----	2

NOTE.—In addition, individual waivers were granted to permit the employment of 1 able seaman holding certificates for "any water—12 months" in excess of the 50 percent authorized by general waiver.

CREW SHORTAGE REPORTS FROM JULY 1 TO JULY 30, 1949

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	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Gulf coast	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Pacific coast	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Great Lakes	95	3	3	5	----	29	3	----	6	9	12	38	3	111
Total	95	3	3	5	----	29	3	----	6	9	12	38	3	111

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 635 cases during the month of June 1949. From this number hearings resulted involving 15 officers and 112 unlicensed men. In the case of officers, none were revoked, 16 were suspended, 5 were suspended with probation granted, none were voluntarily surrendered, 3 were dismissed, and 1 hearing was closed with admonition. Of the unlicensed personnel, 8 certificates were revoked, 21 were suspended, 64 were suspended with probation granted, 8 were voluntarily surrendered, 6 were closed with admonition, and 31 were dismissed after hearing.

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 617 cases during the month of July 1949. From this number, hearings resulted involving 24 officers and 76 unlicensed men. In the case of officers, 1 license was revoked, 4 were suspended, 12 were suspended with probation granted, none were voluntarily surrendered, 6 cases were dismissed, and 1 hearing was closed with admonition. Of the unlicensed personnel, 11 certificates were revoked, 30 were suspended, 29 were suspended with probation granted, 2 were voluntarily surrendered, none were closed with admonition, and 3 were dismissed after hearing.

U. S. GOVERNMENT PRINTING OFFICE: 1949