PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL
UNITED STATES COAST GUARD

Vol. 5 July 1948 No. 7

Proceedings of the

MERCHANT MARINE COUNCIL

Published monthly at Coast Guard Headquarters, Washington 25, D. C., under the auspices of the Merchant Marine Council, in the interest of safety at sea. Except for the cover picture and the picture and article on page 104, there are no restrictions on the republication of material appearing in this issue.

Mention of source will be appreciated.

CONTENTS

COUNCIL ACTIVITIES

HEARING FOR PROPOSED CHANGES IN REGULATIONS

The Merchant Marine Council will hold a semiannual meeting in Room 4120, Coast Guard Headquarters, 13th and E Streets NW., Washington, D. C., commencing with a public hearing at 9:30 a. m. September 28, 1948. This hearing of the Council will receive comments on the proposed changes in the regulations which it will consider. A tentative agenda for this hearing is as follows:

1. Addition of regulations governing the licensing of radio officers as necessary to implement Public Law 525, 80th Congress.

2. Amendment of regulations describing requirements for licensing of masters, mates, pilots, or engineers on vessels operating exclusively in Hawaiian waters.

3. Amendment of regulations describing requirements as to evidence of citizenship required to be produced by applicants for merchant mariner's documents, licenses and certificates of service.

4. Amendments to regulations concerning life preservers.

5. Amendments of regulations covering boundary lines for inland waters, pilot rules for inland waters and pilot rules for midwestern rivers.

6. Specifications for backfire flame arresters for carburetors on motorboats and motor vessels.

7. Amendment to regulation regarding hydrostatic tests for pressure vessels.

8. Amendment to regulations regarding piping systems.

9. Amendment to regulations regarding proof of ownership when applying for award of number for an undocumented vessel.

10. Termination of certain approvals for safety valves.

The proposed changes in the regulations are described generally in the following paragraphs. It is expected that copies of the proposed amendments will be available for distribution the first of August and comments on the proposals may be submitted in writing or at the hearing.

PILOT RULES AND BOUNDARY LINES

The Division of the Federal Register, who publishes the Code of Federal Regulations, are going to publish a new edition of the Code in 1949. That Division has requested all Departments and Agencies of the Government to review those parts of the Code which contain regulations issued by those Departments with the hope of eliminating deadwood and reviewing the format. In conformance with this program it is proposed to delete parts 301, 311, 321 and 331 of title 33 of the Code of Federal Regulations, which parts are entitled, respectively, "International Rules for Preventing Collisions at Sea," "Inland Rules of the Road," "Navigation Rules for the Great Lakes," and "Navigation Rules for Western Rivers." The reason for the deletion is that these parts are repetitions of the statutory Rules of the Road now contained in the statutes and the United States Code. The Coast Guard will continue to print both the statutory Rules of the Road and the Pilot Rules in the pamphlets now issued to vessels.

Public Law 544 approved May 21, 1948, 33 U. S. C. 154, was passed by Congress to bring within the application of the Inland Rules certain waters which are now under the Western Rivers Rules. Therefore it will be necessary to make amendments to certain sections in part 302 of title 33 of the Code of Federal Regulations to redefine boundary lines in order to bring some of the rivers entering into the Gulf of Mexico within the application of the Inland Rules. Also it will be necessary to make amendments to certain of the Pilot Rules of Inland Waters appearing in part 312 in order to extend the waters on which these Rules will be applicable on January 1, 1949. Further, it will be necessary to amend the Pilot Rules for Western Rivers appearing in part 332 in order to implement Public Law 544, which includes a complete redraft of Navigation Rules for the Mississippi River and Mobile River systems. A number of the Pilot Rules which now appear in part 332 were incorporated into the new statute and in order to avoid repetition it is proposed to delete those sections from the regulations.

LICENSING OF RADIO OFFICERS

Public Law 525 approved May 12, 1948, provides for the licensing of marine radio telegraph operators as ship radio officers. It is proposed to add a new subpart 10.13 to provide for licensing of radio officers in order to implement the statute. The new regulations will prescribe requirements which an applicant for license as radio officer must meet before obtaining a license.

OFFICERS ON VESSELS IN HAWAIIAN WATERS

Amendments are proposed to be made imposing the same requirements for obtaining licenses as masters, mates, pilots or engineers on vessels in Hawaiian waters as are required for these officers on vessels in other ocean and coastwise waters.

CITIZENSHIP REQUIREMENTS

It is proposed to amend regulations to require that all applicants for licenses, merchant mariner's documents, and certificates of service shall be required to produce evidence of citizenship or nationality prior to issuance of such documents and whether such applicants are aliens or citizens of the United States. Heretofore where applicants could not produce evidence of citizenship or nationality a question mark was placed alongside the space indicating the place of birth and such applicants were considered to be aliens.

GENERAL REGULATIONS

It is proposed to amend the marine engineering regulations and material specifications to clarify the requirements for hydrostatic tests conducted on refrigeration systems as well as to specify temperature and pressure limitations in certain piping systems rather than use the term "Class II piping."

Another proposal is to transfer the specifications for cork and balsa wood life preservers from the various regulations to Subchapter Q—Specifications. These specifications are primarily for manufacturers. The requirements are being also revised and brought up to date. In addition, certain parts of the specification for kapok life preservers are being revised to allow alternate methods of construction and use of colored cloth.

For vessels over 16 feet in length and propelled by outboard motors it is proposed to exempt the owners of such vessels to submit a builder's statement when submitting proof of ownership with their applications for certificates of award of number for an undocumented vessel.

TERMINATION OF APPROVALS FOR CERTAIN SAFETY VALVES

It is proposed to terminate certain approvals of safety valves which do not comply with the revised marine engineering regulations and material specifications which became effective on and after July 1, 1948. Those safety valves which are in use on merchant vessels will be permitted to be continued in service so long as they are in good and serviceable condition.

AMENDMENTS TO THE REGULATIONS

The amendments to the regulations which were recommended by the Merchant Marine Council for adoption at its semiannual meeting held on March 30 and 31, 1948 were approved by the Commandant and published in the Federal Register of June 26th, 1948. These amendments will be published in the Appendix of the "Proceedings" for this issue and in subsequent issues. Due to space limitations it is not possible to publish all amendments in this issue of the "Proceedings."

"BIG MAMA", THE MISSISSIPPI'S "SHOVINGEST" BOAT

"Big Mama," the world's biggest and most powerful river towboat, has been kicking up a muddy spray along the Mississippi River for 45 years. But early this spring her pilot rang "stop engines" for the last time. For *"Big Mama,"* foretelling the end of a colorful era, gave way to new streamlined Diesel boats and went into retirement.

There was no other boat on the river quite like *"Big Mama,"* as she was fondly nicknamed by the river men who regarded her as the mother of all towboats. The September issue of "The Lamp," publication of Standard Oil Co. (New Jersey), describes her prowess as the Mississippi's "shovingest" craft and her unusual features which distinguish her from other vessels.

Displacing 1,500 tons and measuring 315 feet long and 62 feet wide, *"Big Mama"* pushed heavier and longer large tows than any other Mississippi craft. More than 100 persons could be seated comfortably at dinner in the main forward cabin. Her famous stern paddlewheel, a massive structure 37 feet in diameter, turned on a 40-ton shaft and as one of her own pilots once remarked, "when it pushes water, something's sure got to move."

The big river steamer, whose real name was the *Sprague*, appeared on the Mississippi when river transportation was changing from fast passenger travel to slow mass movement of heavy freight. She was built in 1902 at Dubuque, Iowa, for the coal trade out of the Ohio River to New Orleans, and made her first trip in time to exchange whistled greetings with the last of the great white fleet of swift packetboats that had made Mississippi River steamboating famous.

And *"Big Mama's"* whistle, like her sizeable proportions, is something to remember. No other vessel's whistle could roll such deep and sonorous echoes so far along the river. She was the only boat on the river who, by long-established custom, could cross her two big searchlight beams to form a great, shining X. Even the pilots of airliners knew this unique night display and blinked their landing lights in recognition.

"Big Mama's" service for the petroleum industry began in 1925 when she started to move crude oil from the Smackover field in Arkansas to the big refinery at Baton Rouge. Five years later she was transferred to the job of pushing refined oil products upriver.

Early in her career, she set a mark no other boat has ever equaled by pushing 61 barges of coal from Cairo to New Orleans. The tow was 1,100 feet long and carried enough coal to fill 1,500 railroad cars.

In April 1926, *"Big Mama"* set another mark by shoving 19 steel barges loaded with crude oil from Grand Lake, Ark., to Baton Rouge. There

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was enough oil in that tow to load a tank car train 10 miles long.

The popular river boat also used her great power to save lives and to help win wars. In 1927, when the Mississippi burst its banks near Greenville, Miss., "*Big Mama*," with two empty barges, swung out of the raging main channel and steamed inland more than a mile, battering her way over treetops to rescue almost all of Greenville's stranded population.

In World War I, the big vessel participated in the Government's great effort to move millions of tons of vital materials to tidewater for shipment overseas. In World War II, she shoved so much vital oil cargoes so regularly that she was called "the only pipe line running lengthwise of the Mississippi."

"*Big Mama*" traveled more than a million miles on the river, a distance equal to about 40 trips around the world. In her 22 years in the petroleum trade she had only two major mishaps, once in 1927 when she struck a bar during a windstorm and three of her barges burned, and again, years later, when a gigantic whirlpool seized her and her tow, spun them around twice and smashed them against the river bank.

Because of the tremendous size of "*Big Mama*" and her tows, which together measured as much as 1,000 feet long, the pilot h d to have much knowledge of the river and an uncanny memory of the bottoms and banks. Although longer than the Queen Mary, the vessel and her tow were taken through narrow, tortuous channels that were less than a thousand feet wide with a current of 10 miles an hour.

After "*Big Mama*" made her last trip, her work for the Louisiana Division of the Esso Standard Oil Co. was given to the Diesel boats.

But "*Big Mama*" will not disappear completely. She has willed her famous whistle to another steamer and so those deep-toned echoes will be rolling down the Mississippi for some years to come.

Courtesy Esso Standard Oil Co., New York, N. Y.

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D. C.

Amendment of Parts 8 and 13 of the Commission's Rules and Regulations Governing the Ship Service and Commercial Radio Operators, Respectively

ORDER

At a session of the Federal Communications Commission held at its office in Washington, D. C., on the 2d day of June 1948:

The Commission having under consideration (1) its action of December 15, 1947, under the provisions of section 318 of the Communications Act of 1934, as amended, temporarily waiving, subject to certain provisions, the requirement of licensed radio operators for ship radar stations licensed in the Ship Service, until March 15, 1948, or the effective date of permanent rules adopted by the Commission governing operator license requirements for such stations, whichever date occurred earlier; (2) its action of December 15, 1947, amending parts 8 and 13 of the Commission's Rules Governing Ship Service and Commercial Radio Operators, respectively, so as to provide temporary rules in line with and of the same duration as the aforesaid temporary waiver; (3) its action of March 15, 1948, extending the aforesaid waiver and temporary rules until June 15, 1948, or the effective date of such permanent rules, whichever date occurred earlier; and (4) a proposal again to extend the duration of the aforesaid waiver and temporary rules to November 15, 1948, or the effective date of such permanent rules, whichever is earlier;

IT APPEARING, That on March 31, 1948, the Commission adopted a notice of proposed rule making setting forth certain proposed permanent rules to govern operator license requirements for ship radar stations licensed in the Ship Service and inviting comments thereon until May 10, 1948; and

IT FURTHER APPEARING, That in view of the comments which have been received on the proposed permanent rules and in view of certain requests

which have been made for a public hearing, permanent rules will not be adopted by the Commission until a date beyond June 15, 1948; and

IT FURTHER APPEARING, That pending the final adoption of permanent rules governing operator license requirements as aforesaid, it is necessary to continue beyond June 15, 1948, the temporary rules governing operator license requirements for ship radar stations licensed in the Ship Service; and

IT FURTHER APPEARING, That because of the temporary nature of the proposed extension, and because of the opportunity which heretofore has been afforded to all interested parties to submit comments on the subject of operator requirements for ship radar stations licensed in the Ship Service, and because the need for the continuance of the temporary rules is urgent, the public notice and procedure provided for in section 4 of the Administrative Procedure Act are found to be impracticable and unnecessary herein, and for the same reasons, and because the extension of the temporary rules in question will continue to relieve a restriction, such extension should be made effective immediately; and

IT FURTHER APPEARING, That unless the waiver hereinabove referred to of the requirements of section 318 of the act is extended, the provisions of that section will, after June 15, 1948, require ship radar stations licensed in the Ship Service to be operated by licensed radio operators; and

IT FURTHER APPEARING, That under the provisions of section 318 aforesaid the Commission may waive the requirement of licensed radio operators for ship radar stations licensed in the Ship Service if the Commission first shall find that such a waiver will serve the public interest, convenience, or necessity; and

IT FURTHER APPEARING, That under Commission Order 133, dated May 10, 1946, the Commission waived to a limited extent the licensed radio operator requirements of section 318 aforesaid with regard to shipboard radar stations licensed in the Experimental Service; and

IT FURTHER APPEARING, That during the interim period preceding the final adoption and effectiveness of permanent rules governing operator license requirements for ship radar stations licensed in the Ship Service, radar stations so licensed can be as well operated by unlicensed personnel as can radar stations licensed in the Experimental Service; and

IT FURTHER APPEARING, That under the foregoing circumstances it will serve the public interest and convenience temporarily to waive, to the same extent as now provided in the Experimental Service by Order 133, the licensed radio operator requirements with regard to ship radar stations licensed in the Ship Service; and

IT FURTHER APPEARING, That authority to accomplish the aforesaid objective is contained in sections 303 (f), (g), (1), and 318 of the Communications Act of 1934, as amended;

IT IS ORDERED, That, effective June 15, 1948, the provisions of section 318, aforementioned, are hereby waived insofar as such provisions require any person to hold a radio operator license issued by this Commission in order to operate ship radar stations licensed by this Commission in the Ship Service, provided that this waiver shall extend only to the normal operation of such radar stations on board ship and shall not be construed to permit unlicensed personnel to make any adjustments or to do any servicing or maintenance that may affect the proper operation of the station; provided further that this waiver shall not be construed to affect in any way the responsibility of the station licensee for the proper operation of the station; and provided further that the waiver herein ordered may, in the discretion of the Commission and without advance notice or hearing, be changed or cancelled by order of the Commission, and shall in no event extend beyond the effective date of permanent rules adopted by the Commission governing operator license requirements for ship radar stations licensed in the Ship Service, or beyond November 15, 1948, whichever is earlier;

IT IS FURTHER ORDERED, That effective June 15, 1948, parts 8 and 13 of the Commission's Rules Governing Ship Service and Commercial Radio Operators, respectively, are amended as follows:

(1) Footnote 71 to Section 8.195 is amended as follows:

(a) By deleting in the first sentence thereof the phrase "and a second temporary waiver effective March 15, 1948," and substituting therefor, the phrase "and by subsequent temporary waivers effective March 15, 1948 and June 15, 1948."

(b) By deleting in the last sentence thereof the phrase "June 15, 1948" and substituting therefor the phrase "November 15, 1948."

(2) The fourth footnote appended to section 13.1 which footnote commences "By order dated and effective December 15, 1947 * * *," is amended as follows:

(a) By deleting the phrase "and by a second order dated March 12, 1948 and effective March 15, 1948," and substituting therefor the phrase "and by subsequent orders effective March 15, 1948 and June 15, 1948."

FEDERAL COMMUNICATIONS COMMISSION,
[s] T. J. SLOWIE,
Secretary.

Adopted: June 2, 1948.

HEARING UNITS

Coast Guard Merchant Marine Investigating units and Merchant Marine details investigated a total of 682 cases during the month of April 1948. Of this number charges were preferred involving 27 licenses and 65 unlicensed men. No hearings were held because examiners were not available.

CORRECTION IN "RULES OF THE ROAD"

Attention is called to some errors which appeared in the May 1948 issue of the "Proceedings" on pages 74 and 75 under the heading "Rules of the Road." In referring to the whistle signals to be used in passing, the article stated that short blasts were to be used. There should be substituted for the word "short" the word "distinct," which change was made in the most recent amendment to the Pilot Rules for the Great Lakes in March of this year. The bend signal and the signal to be used by a vessel leaving her dock and berth should read one long blast of the whistle of at least 8 seconds duration. On page 75 in the first paragraph under the heading "Steam Vessel Overtaking Another" the first phrase in the paragraph should read "When one steam vessel is overtaking another" instead of "When steam vessels are running in the same direction."

CANCELLATION OF ARTICLES OF SHIPS' STORES AND SUPPLIES

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

The Tanglefoot Co., Grand Rapids 4, Mich., Certification No. 167, dated 1 June 1948, Victory Difusor Liquid. This item is cancelled.

AFFIDAVITS

The following affidavits were accepted during the period from May 15 to June 15, 1948:

The Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio, Pipe Fittings.

Clark Cooper Co., Palmyra, N. J., Valves and Fittings.

LESSONS FROM CASUALTIES

RECKLESS OR NEGLIGENT MOTORBOAT OPERATORS

Now that the 1948 motorboat season is underway, the Coast Guard requests that owners cooperate to reduce accidents and calls for assistance to a minimum by operating their boats in a safe and sane manner. Every year many persons lose their lives, are injured, or have their property damaged as a result of reckless or negligent operation.

To those few who disregard the rights of others and insist upon operating their boats in a reckless or negligent manner, the Coast Guard offers a word of warning that it will vigorously prosecute cases of reckless or negligent operation coming to its attention. Section 14 of the Motorboat Act of 1940 provides a fine of not more than $2,000 or imprisonment for not more than 1 year or both such fine or imprisonment for reckless or negligent operation of any motorboats. The Coast Guard is charged with the responsibility of enforcing this law and will refer all cases of reckless or negligent operation to the United States Attorney General. Section 14 of the Motorboat Act is quoted below for ready reference:

> Any person who shall operate any motorboat or any vessel in a reckless or negligent manner so as to endanger the life, limb, or property of any person shall be deemed guilty of a misdemeanor and on conviction thereof by any court of competent jurisdiction shall be punished by a fine not exceeding $2,000, or by imprisonment for a term of not exceeding one year, or by both such fine and imprisonment, at the discretion of the court.

Reckless or negligent operation of motorboats does not necessarily mean excessive speed. Not observing the Pilot Rules—operating the boat improperly equipped or carrying an excessive number of persons—may be construed as reckless or negligent operation. Note that the law includes "the life, limb, or property of any person"—this would include the damage or destruction of shore property by excessive speed while too close to shore. Some motorboat operators are wilfully reckless or negligent. Others place themselves in the category of reckless or negligent operators by not using common sense and by not being familiar with the requirements of motorboating. In either case the end result may be the death or maiming of some person or persons, and in either case the operator is liable for the full penalty prescribed by the law.

A typical wilful violator, for example, is a fellow who spots some people in a rowboat and thinks it would be great sport to "scare the daylights out of them." He heads his boat straight for the rowboat and roars right at them, veering at the last minute, leaving the rowboat occupants trembling, wet with spray or probably overboard. Another type is one who considers it great sport to see how close he can get to a large commercial vessel. Sometimes he gets too close and tragedy results. Cases of this kind have already been reported during the 1948 season

The unintentional reckless or negligent operator fails to familiarize himself with the Pilot Rules, equipment requirements, or perhaps overloads his boat. He is also inclined to operate his boat at a speed not in keeping with safety considering the waters over which he is operating, although the speed of the boat may be less than it is capable of making. As an example of this, a motorboat operator who was running at a somewhat reduced speed was in the vicinity of some bathers but he did not see them. However, he knew from past experience that the area was frequented by swimmers. It is very difficult to observe a head in the water from a boat, especially if the water is choppy. His boat struck one swimmer and mangled his leg to such an extent that it had to be amputated. This terrible accident was considered avoidable, as in the first place the operator should have remained away from that vicinity; and in the second place, while he was operating at a reduced speed he was still going too fast to maintain a proper lookout. As this is written the case has not been settled but it is probable that the motorboat operator will receive a heavy fine and perhaps a prison sentence. In addition he undoubtedly faces a civil liability suit by the person whose leg was amputated.

In another case a 40-foot powerboat sank an anchored rowboat—cutting the rowboat in two. The result was that both occupants of the rowboat lost their lives. The powerboat operator stated that he was unaware of the accident until one of his party observed a head bobbing in the water in the wake of the boat and cried: "Man overboard." This case was heard in a United States District Court on a charge of reckless and negligent operation. The judge found the defendant guilty as charged in the indictment for negligent operation of a motorboat under the Act of April 25, 1940. A heavy fine and a suspended prison sentence were imposed on the powerboat operator. He, too, will probably face a civil liability suit.

The two specific cases cited above are just a few of those in the Coast Guard files and while the Coast Guard does not want to appear in the role of a "kill-joy," it does have a job to do to protect the motorboating public who, in the main, are law-abiding and cooperate with the Coast Guard in promoting safety on the navigable waters of the United States. To those few reckless or negligent operators of motorboats, the Coast Guard serves notice that they can expect to receive no sympathy—on the contrary they will be prosecuted most vigorously.

APPENDIX

Amendments to Regulations

TITLE 46—SHIPPING

Chapter I—Coast Guard: Inspection and Navigation

[CGFR 48-23]

MISCELLANEOUS AMENDMENTS

A notice regarding proposed changes in the inspection and navigation regulations was published in the FEDERAL REGISTER dated March 6, 1948 (13 F. R. 1237), and public hearings were held by the Merchant Marine Council on March 30 and 31, 1948, at Washington, D. C.

The purpose of the miscellaneous amendments to the regulations is to clarify their intent, effect editorial changes, establish additional safety requirements on the basis of experience obtained, and to permit certain practices to be employed by the industry in the construction, repair, and operation of merchant vessels, as well as to bring certain marine engineering requirements into closer agreement with the rules of the Amer-

ican Bureau of Shipping, heating boiler code of the American Society of Mechanical Engineers, and the rules for fusion welding piping of the American Welding Society. 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.

The Department of the Army, as well as various shipyards and contractors indicated that it is very difficult to obtain wire inserted glass with deliveries being up to 18 months from the time the orders are given. Accordingly, in order not to hinder the construction and delivery of passenger vessels, the use of plain glass as an alternate for the wire inserted glass will be permitted until July 1, 1949. This amendment to the regulations, 46 CFR 144.29, is published without prior general notice of its proposed issuance for the reason that notice and public rule making procedure in connection therewith are hereby found to be impracticable, and contrary to the public interest.

By virtue of the authority vested in me by R. S. 4405, as amended, 46 U. S. C. 375 and sec. 101 of Reorganization Plan No. 3 of 1946, 11 F. R. 7875, as well as the statutes cited with the regulations below, the following amendments to the regulations are prescribed, which shall become effective 90 days after date of publication of this document in the FEDERAL REGISTER:

Subchapter C—Motorboats, and Certain Vessels Propelled by Machinery Other Than by Steam More Than 65 Feet in Length

PART 28—SPECIFICATIONS AND PROCEDURE FOR APPROVAL OF EQUIPMENT

LIFESAVING EQUIPMENT

1. Section 28.4–1 *General provisions—approval* is deleted.

2. Section 28.4–2 *General characteristics of ring buoys* is deleted.

3. Section 28.4–3 *Buoyant materials* is deleted.

4. Section 28.4–7 *Specifications for 20- and 24-inch cork or balsa wood ring life buoys*, with figures 3 and 4, are deleted.

5. Section 28.4–8 *Specifications for kapok buoyant cushion*, with figure 5, are deleted.

6. Section 28.4–9 is amended to read as follows:

§ 28.4–9 *Factory inspection; life preservers.* The Coast Guard District Commander shall detail an inspector to any place where approved life preservers are manufactured, whose duty it shall be to test and examine such equipment manufactured at that place and satisfy himself that it is in accordance with the requirements of the regulations in this chapter. When found to be in accordance with the requirements, the inspector shall stamp them with a stamp bearing the initials of his name, the date of examination, and a certification that they have been examined and passed. (54 Stat. 163–167, 46 U. S. C. 526–526t)

Subchapter D—Tank Vessels

PART 30—GENERAL PROVISIONS

Section 30.3 is amended by adding the following paragraph (hh):

§ 30.3 *Definition of terms.* * * *

(hh) *Tankerman.* A "tankerman" is any person holding a certificate issued by the Coast Guard attesting to his competency in the handling of inflammable or combustible liquid cargo in bulk, or is any person holding a valid license as master, mate, pilot, or engineer. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 50 U. S. C. 1275)

PART 31—INSPECTION AND CERTIFICATION

INSPECTION OF TANK VESSELS

1. Section 31.3–2 is amended to read as follows:

§ 31.3–2 *Recognized classification society—TB/ALL.* (a) In the inspection of hulls, boilers, and machinery the rules promulgated by the American Bureau of Shipping and designated "Rules for Building and Classing Steel Vessels" respecting material and construction of hulls, boilers, and machinery, except as otherwise provided for by law and regulations in this chapter, shall be accepted as standard by the Coast Guard after being adopted by the Commandant and a copy filed with the Division of the Federal Register, The National Archives, Washington, D. C.

(b) When such rules of the American Bureau of Shipping are adopted as standard by the Commandant, notice of such action will be published in the FEDERAL REGISTER. Such rules will apply to new construction contracted for on or after the effective date of publication, which will be 90 days after the date of the FEDERAL REGISTER in which the notice appears.

NOTE: The latest current rules of the American Bureau of Shipping as described in paragraph (a) of this section, which are hereby adopted as standard by the Commandant, are those dated 1948 and will apply to new construction contracted for on or after the effective date of this regulation as amended. As the "Rules for Building and Classing Steel Vessels" are usually published annually, information regarding the latest current rules of the American Bureau of Shipping which have been adopted by the Commandant subsequent to the effective date of § 31.3–2 may be obtained through the following sources: District Commander of any Coast Guard District; Commandant (MMT), U. S. Coast Guard, Washington 25, D. C.; or Director, Division of the Federal Register, The National Archives, Washington 25, D. C.

(c) The approved plans and certificate of the American Bureau of Shipping, or other recognized classification society for classed vessels, may be accepted by the Coast Guard as evidence of the structural efficiency of the hull and reliability of machinery of vessels subject to the regulations in this subchapter, except as otherwise provided for by laws and regulations in this chapter. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391 a, 50 U. S. C. 1275)

MANNING OF TANK VESSELS

2. Section 31.4–1 is amended to read as follows:

§ 31.4–1 *Licensed officers and crews—TB/ALL.* (a) The Officer in Charge, Marine Inspection, who inspects the vessel, shall make in the certificate of inspection for each tank vessel an entry of such complement of officers and/or crew as required by law and regulations in this subchapter, and which in the judgment of the Officer in Charge, Marine Inspection, will be necessary for her safe operation. The complement may be changed from time to time by indorsement on such certificate by an Officer in Charge, Marine Inspection, by reason of change of conditions or employment.

(b) In all cases where a certificate of inspection does not require at least two licensed officers, the Officer in Charge, Marine Inspection, shall enter in the certificate of inspection issued to any manned tank vessel subject to the regulations in this subchapter the number of the crew required to be certificated as tankermen. If the total complement of a tank vessel is either one or two persons, only one such person need be a certificated tankerman. If the total complement exceeds two, only two such persons need be certificated tankermen. (R. S. 4417a, sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

PART 32—REQUIREMENTS FOR HULLS, MACHINERY AND EQUIPMENT

HULLS AND HULL FITTINGS; GENERAL

1. Section 32.1–6 (b) is amended to read as follows:

§ 32.1–6 *Crew accommodations; tankers of 100 gross tons or over constructed after January 1, 1938—T/ALL.* * * *

(b) *Toilet and washing facilities.* (1) Each such tank ship shall be provided with at least one washbasin, one bathtub or shower, and one toilet for each eight members, or portion thereof, in the crew to be accommodated. The crew to be accommodated shall include all members who do not

occupy rooms to which private facilities are attached.

(2) When the engine room crew, exclusive of licensed officers and others separately provided for, exceeds eight, separate washing facilities shall be provided.

(3) Vessels contracted for after January 1, 1949, shall have the toilet rooms separate from the washrooms, and at least one washbasin shall be fitted in each toilet room. (R. S. 4417a and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

HULL REQUIREMENTS; NEW TANK VESSELS

2. Section 32.2–4 is amended by adding the following new sentence at the end thereof:

§ 32.2–4 *Pump rooms—TB/ALL.* * * * The access to a cargo pump room handling such liquids shall be from the open deck. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

BOILERS AND MACHINERY

3. Section 32.5–2 is amended to read as follows:

§ 32.5–2 *Test and inspection of boilers and equipment—TB/ALL.* Boilers, unfired pressure vessels, piping systems, and appurtenances shall be fabricated, tested, and inspected as required by Parts 50 to 57, inclusive, of this chapter (Subchapter F—Marine Engineering). (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

4. Section 32.5–5 is amended to read as follows:

§ 32.5–5 *Installation of fuel-oil systems—TB/ALL.* The installation of fuel-oil systems shall comply with the requirements in Part 55 of this chapter (Subchapter F—Marine Engineering). (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

VENTILATION AND VENTING

5. Section 32.7–4 (b) is amended to read as follows:

§ 32.7–4 *Venting of cargo tanks; new vessels—TB/ALL.* * * *

(b) (1) Cargo tanks in which Grade A liquids are to be transported shall be fitted with a venting system consisting of branch vent line from each cargo tank connected to a vent header which shall extend to a reasonable height above the weather deck and be fitted with a flame arrester or pressure-vacuum relief valve. Each branch vent line may be provided with a manually operated control valve, provided it is bypassed with a pressure-vacuum relief valve or each cargo tank to which such a branch vent line is connected is fitted with an independent pressure-vacuum relief valve. The vent header system shall be provided with suitable connections for flushing and draining.

(2) In barges with independent tanks carrying Grade A liquids, separate discharge pipes may be fitted to each pressure-vacuum relief valve, or the pressure-vacuum relief valve may be elevated, so that in either case the discharge from such valve will not be less than 7 feet above the deck where practicable. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

CARGO PUMPS AND CARGO PIPING

6. Section 32.8–2 (a) is amended to read as follows:

§ 32.8–2 *Cargo pump fittings and controls; new vessels—TB/ALL.* (a) Where a cargo pump is capable of developing a pressure exceeding 125 pounds at the pump under shut-off head conditons (based on water), a suitable relief valve shall be installed between the pump and shut-off valve in the cargo pump discharge and piped back into the suction. The relief valve setting shall not exceed the pressure for which the piping system is designed. (R. S. 4417a and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

7. Section 32.8–4 (a) is amended to read as follows:

§ 32.8–4 *Cargo piping; new vessels—TB/ALL.* (a) (1) The piping shall be arranged so as to avoid excessive stresses at the joints. For sizes exceeding 2 inches in diameter, flanged, welded, or other approved types of joints shall be employed. Packing material shall be suitable for the cargo carried. Connections at bulkheads shall be made so that the plating does not form part of a flanged joint. Piping may be carried through bunker spaces and deep tanks provided it is run through a pipe tunnel. The tunnel may be omitted where the pipe is extra heavy, all joints are welded, and bends are installed to provide for expansion and contraction.

(2) Cargo piping shall not pass through spaces containing machinery where sources of vapor ignition are normally present: *Provided*, That, in conversions effected during the National Emergency proclaimed by the President May 27, 1941, cargo piping for Grade E liquids passing through shaft alleys and machinery spaces may be permitted. (R. S. 4417a and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a; 50 U. S. C. 1275)

EQUIPMENT AND MISCELLANEOUS

8. Section 32.9–10 is amended to read as follows:

§ 32.9–10 *Cargo hose—TB/ALL.* Cargo hose, when carried on tank vessels, shall be of a grade suitable for oil service and shall be designed to withstand the pressure of the shut-off head of the cargo pump or pump relief valve setting, less static head, but in no case less than 100 pounds per square inch. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

PART 33—LIFESAVING APPLIANCES

REQUIREMENTS FOR LIFEBOATS, LIFE RAFTS, AND BUOYANT APPARATUS

1. Section 33.2–1 is amended to read as follows:

§ 33.2–1. *Tank ships; ocean—T/O.* (a) All tank ships which normally operate more than 20 miles off shore shall carry a sufficient number of lifeboats on each side to accommodate all persons on board: *Provided*, That such tank ships of 350 feet in length or over, having superstructure amidships and propelling machinery aft shall be provided with at least four lifeboats, one on each side in way of the after accommodations, and one on each side in way of amidships accommodations.

(b) No boat shall be of less than 180 cubic feet measurement. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

EQUIPMENT; LIFEBOATS, LIFE RAFTS, AND BUOYANT APPARATUS

2. Section 33.3–1 (y) is amended to read as follows:

§ 33.3–1 *Tank ship lifeboat equipment; ocean and coastwise—T/OC.* * * *

(y) *Parachute flare distress signals.* (1) Twelve approved parachute red flare distress signals and an approved means of projecting them, all contained in a portable watertight case. Service use of the signals shall be limited to a period of three years from date of manufacture. (For specifications for the above equipment, see subparts 160.024 and 160.036 in Subchapter Q of this chapter.)

(2) The stowage of this equipment is discretionary with the master.

(3) On ocean tank ships parachute red flare distress signal outfits need not be provided for more than two lifeboats.

(4) On coastwise tank ships parachute red flare distress signal outfits need not be provided for more than one lifeboat. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

3. Section 33.3–2 is amended by deleting paragraph (l) and by amending paragraph (e) to read as follows:

§ 33.3–2 *Tank ship lifeboat equipment; Great Lakes—T/L.* * * *

(e) *Distress signals.* (1) Twelve approved hand red flare distress sig-

nals in a watertight container, or twelve approved hand combination flare and smoke distress signals in a watertight container. Service use shall be limited to a period of three years from date of manufacture. Distress signals not bearing date of manufacture shall not be carried after January 1, 1949. (For specifications for the above signals, see subparts 160.021, 160.022, and 160.023 in Subchapter Q of this chapter.)

(2) Either an approved flashlight or twelve approved parachute red flare distress signals, and an approved means of projecting them; all contained in a portable watertight case, may be substituted for six of the above distress signals, but at least six of the above hand red flare distress signals shall be carried. Service use of the signals shall be limited to a period of three years from date of manufacture. (For specifications for the parachute red flare distress signal equipment, see subparts 160.024 and 160.036 in Subchapter Q of this chapter.)

LIFE BUOYS

4. Section 33.7–1 is amended to read as follows:

§ 33.7–1 *Number required; tank ships—T/ALL.* The minimum number of approved 30-inch life buoys and the minimum number to which approved automatic water lights shall be attached shall be in accordance with the following table:

Length of tank vessel	Minimum number of approved 30-inch life buoys	Minimum number of approved 30-inch life buoys with approved automatic water lights attached
Under 100 feet	2	0
100 feet and under 200 feet	4	2
200 feet and under 300 feet	6	2
300 feet and under 400 feet	12	4
400 feet and under 600 feet	16	9
600 feet and under 800 feet	24	12
800 feet and over	30	15

(R. S. 4417a and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

PART 34—FIRE-FIGHTING EQUIPMENT

FIRE EQUIPMENT FOR CARGO SPACE

1. Section 34.3–5 (b) is amended to read as follows:

§ 34.3–5 *Steam fire-extinguishing system for cargo spaces—T/ALL.*

* * *

(b) Where steam fire-extinguishing systems are fitted on tank ships, the master valve control mechanism shall be located in an easily accessible place above the freeboard deck, as defined in § 43.1 (g) of this chapter (Subchapter E—Load Lines). (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

2. Section 34.3–13 is amended to read as follows:

§ 34.3–13 *Fire-extinguishing systems for dry cargo spaces, lamp and paint rooms, etc.—T/ALL.* (a) Steam, inert gas, foam, or vapor systems shall be provided for extinguishing fires in dry cargo spaces, lamp and paint rooms, or similar compartments, and should, where practicable, be run independent of the extinguishing systems for the main bulk cargo tanks. In cases where vessel arrangements make this requirement impracticable, valves shall be installed between the main bulk tank extinguishing system and the other compartments served. These valves are to be marked: "This valve to be kept closed except in case of fire."

(b) Lamp, oil, and paint rooms in all classes of vessels shall be wholly and tightly lined with metal. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

3. Part 34 is amended by adding a new § 34.3–14, reading as follows:

§ 34.3–14 *Fire-extinguishing system, pump rooms—T/ALL.* Where a steam smothering system is installed in pump rooms, the outlet shall terminate in the lower pump room, just above the floor plates. Control valves for smothering system shall be located adjacent to the pump-room exit and marked as follows: "Steam smothering valve to pump room." (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

HAND FIRE EXTINGUISHERS

4. Section 34.5–6 is amended to read as follows:

§ 34.5–6 *Hand fire extinguishers; number required on tank ships—T/ALL.* (a) Tank ships shall be provided with chemical fire extinguishers as follows:

Size of vessel, gross tons:	*Minimum number of fire extinguishers*
Not over 100	2
Over 100 and not over 500	3
Over 500 and not over 1,000	6
Over 1,000	8

(b) The above table is based on the ordinary 2½-gallon foam type fire extinguisher; other types of fire extinguishers may be substituted according to the following schedule:

One 2½-gallon foam-type fire extinguisher is equivalent to one 15-pound carbon-dioxide (CO_2) type, or two 1-quart carbon-tetrachloride type, or one 12-pound dry-chemical type.

(c) No fire extinguisher of a capacity greater than 2½ gallons (or equivalent sizes of other types) shall be allowed a greater rating than the ordinary 2½-gallon size, but fire extinguishers of less capacity are allowable on tank ships under the above table when their total contents equals the required quantity. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

PART 35—OPERATION

GENERAL SAFETY RULES

Section 35.4–5 is amended to read as follows:

§ 35.4–5 *Fresh air breathing apparatus—TB/ALL.* All manned tank vessels having cargo tanks which exceed 15 feet in depth, measured from the deck to the lowest point at which cargo is carried, shall be provided with fresh air breathing apparatus, including belt and life lines. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

PART 37—SPECIFICATIONS FOR LIFE-SAVING APPLIANCES

LIFE PRESERVERS

1. Section 37.6–3 *Buoyant materials—TB/ALL* is deleted. (R. S. 4417a and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

LIFE BUOYS

2. Sections 37.8–1 to 37.8–10, inclusive, and the figure for "Standard Ring Life Buoy" are deleted. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

LINE-THROWING GUN

3. Section 37.10–5 *Signal pistol—T/OC* and figure 1—Marine Signal Pistol are deleted. (R. S. 4417a, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 391a, 50 U. S. C. 1275)

Subchapter F—Marine Engineering

PART 52—CONSTRUCTION

SUBPART 52.01—PROCEDURE AND GENERAL REQUIREMENTS

1. Section 52.01–5 (13 F. R. 1706) is amended to read as follows:

§ 52.01–5 *Drawings.* (a) Manufacturers intending to fabricate boilers, unfired pressure vessels or appliances of riveted, welded, brazed, or seamless material to be installed on vessels subject to inspection by the Coast Guard, shall submit detail drawings in triplicate which shall be fully descriptive of the pressure containing parts of such boilers, unfired pressure vessels, or appliances to be manufactured, to the Officer in

Charge, Marine Inspection, having jurisdiction over the vessel. When due to location of the shipyard or design office, such a procedure would result in unnecessary delay in transmission, the drawings may be forwarded directly to the Commandant (MMT), U. S. Coast Guard, Washington 25, D. C.

(b) The procedure specified in paragraph (a) shall apply also to proposed alterations. (R. S. 4417a, 4418, 4426, 4427, 4429–4434, 4453, and 4491, sec. 14, 29 Stat. 690, 41 Stat. 305, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 363, 366, 367, 391a, 392, 404, 405, 407–412, 435, 1333, 50 U. S. C. 1275)

SUBPART 52.05—CYLINDRICAL SHELLS

2. Section 52.05–5 (a) (13 F. R. 1707) is amended to read as follows:

§ 52.05–5 *Materials.* (a) Plates shall be of marine boiler steel complying with subpart 51.04, except that boilers designed for pressures not exceeding 150 pounds per square inch may be constructed of steel plate meeting the specifications of subpart 51.22 and which are tested, inspected, and stamped as required by § 51.01–1 of this subchapter. (R. S. 4417a, 4418, 4426, 4427, 4429–4434, 4453, and 4491, sec. 14, 29 Stat. 690, 41 Stat. 305, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 363, 366, 367, 391a, 392, 404, 405, 407–412, 435, 1333, 50 U. S. C. 1275)

SUBPART 52.20—HEADS

3. Section 52.20–5 (a) (13 F. R. 1710) is amended to read as follows:

§ 52.20–5 *Materials and workmanship.* (a) Steel plate used in the fabrication of heads shall be either flange or firebox quality complying with subpart 51.04 or 51.22. Flanged or dished heads if pressed or flanged cold shall be stress-relieved as required by § 56.01–70 of this subchapter after the cold-forming operations are completed. Heads that are flanged or dished hot need not be stress-relieved. (R. S. 4417a, 4418, 4426, 4427, 4429–4434, 4453, and 4491, sec. 14, 29 Stat. 690, 41 Stat. 305, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 363, 366, 367, 391a, 392, 404, 405, 407–412, 435, 1333, 50 U. S .C. 1275)

SUBPART 52.60—SUPERHEATERS, HEADERS, WATER WALLS, AND ECONOMIZERS

4. Section 52.60–5 *Drawings and specifications* (13 F. R. 1723) is deleted.

PART 53—LOW-PRESSURE HEATING BOILERS

Part 53 (13 F. R. 1728, 1729) is amended to read as follows:

SUBPART 53.01—GENERAL

Sec.
53.01–1 Scope.

SUBPART 53.03—STEEL PLATE HEATING BOILERS

53.03–1 Scope.
53.03–5 Plan approval.
53.03–10 Materials.
53.03–15 Computations and design.
53.03–20 Braced and stayed surfaces.
53.03–25 Areas to be stayed.
53.03–30 Allowable stresses for stays and braces.
53.03–35 Boiler tubes.
53.03–40 Riveted boilers.
53.03–45 Welded boilers.
53.03–50 Boiler openings.
53.03–55 Installation.
53.03–60 Safety and relief valves.
53.03–65 Discharge capacities of safety and relief valves.
53.03–70 Fittings and appliances.
53.03–75 Hydrostatic tests, inspection, and stamping.

SUBPART 53.05—CAST-IRON HEATING BOILERS

53.05–1 Scope.
53.05–5 Manufacturer's certification.
53.05–10 Material.
53.05–15 Washout openings.
53.05–20 Flanged connections.
53.05–25 Threaded openings.
53.05–30 Hydrostatic tests, inspection, and stamping.
53.05–35 Installation.
53.05–40 Safety and relief valves.
53.05–45 Discharge capacities of safety and relief valves.
53.05–50 Fittings and appliances.

AUTHORITY: §§ 53.01–1 to 53.05–50, inclusive, issued under R. S. 4405, 4417a, 4418, 4426, 4427, 4429, 4430, 4431, 4432, 4433, 4434, 4453, 4491, sec. 14, 29 Stat. 690, 41 Stat. 305, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 363, 366, 367, 375, 391a, 392, 404, 405, 407, 408, 409, 410, 411, 412, 435, 1333, 50 U. S. C. 1275; and sec. 101, Reorg. Plan No. 3 of 1946; 11 F. R. 7875.

SUBPART 53.01—GENERAL

§ 53.01–1 *Scope.* (a) The regulations in this part apply to the design and construction of steel plate and cast iron steam and hot water boilers used for heating or hot water supply, the maximum allowable pressure of which shall not exceed the following:

(1) For steel plate boilers—30 pounds per square inch.

(2) For cast iron boilers—15 pounds per square inch.

(b) The maximum water temperature of hot water boilers shall not exceed 250° F.

(c) When operating conditions exceed those specified in paragraph (a), the boilers shall be designed and fabricated in accordance with the requirements of Part 52 of this subchapter for power boilers.

SUBPART 53.03—STEEL PLATE HEATING BOILERS

§ 53.03–1 *Scope.* The regulations in this subpart contain detail requirements for the design and construction of steel plate heating boilers.

§ 53.03–5 *Plan approval.* (a) Manufacturers of steel plate heating boilers of riveted or welded construction to be installed on vessels subject to inspection by the Coast Guard shall submit to the Commandant drawings in triplicate fully descriptive of the boilers to be fabricated.

(b) In event of approval of the boiler by the Commandant, it will be assigned a type approval number, which shall be stamped or otherwise permanently attached to each boiler in accordance with the provisions of § 53.03–75.

(c) The manufacturer shall also, upon request, furnish such additional drawings and specifications as may be necessary for the use of each Coast Guard District Commander and Officer in Charge, Marine Inspection. Unless the design or material of the boiler is changed, no further drawings will be required.

§ 53.03–10 *Materials.* (a) The material used in the fabrication of steel plate heating boilers shall conform to the requirements of Parts 51 and 52 of this subchapter for power boilers except where otherwise provided for in this subpart.

(b) Plates used for pressure parts of boilers subject to the radiant heat of the fire shall be of firebox quality steel conforming to the requirements of subparts 51.04 or 51.22 of this subchapter.

(c) Manufacturers of steel heating boilers shall submit a metallurgical test report, in accordance with § 51.01–25, certifying that the chemical and physical properties of the material used in the fabrication of the boiler conform to the applicable specifications of Part 51 of this subchapter.

§ 53.03–15 *Computations and design.* (a) The design pressure of boilers covered by this subpart shall not be less than 30 pounds per square inch.

(b) The maximum allowable pressure and minimum thickness of the cylindrical shell and dished heads of steel plate boilers shall be determined in accordance with the requirements of subparts 52.05 and 52.20 of this subchapter. The efficiency of the longitudinal welded joint shall be taken as 0.65.

(c) The minimum thickness of any boiler plate under pressure shall be ¼ inch for unstayed surfaces and $^{5}/_{16}$ inch for stayed surfaces and tube sheets.

§ 53.03–20 *Braced and stayed surfaces.* (a) The design pressure, minimum thickness of material, and pitch of stays for stayed surfaces shall be determined in accordance with the requirements of subpart 52.30 using coefficients as follows:

C=170 for plates exposed to the products of combustion and fitted with screw stays with riveted heads or welded collars.

C=190 for plates as above but not exposed to the products of combustion.

C=238 for plates exposed to the products of combustion fitted with screw stays with single nuts outside of plate and also for stays fitted with washers of twice the diameter of the stay. The thickness of the washers shall not be less than that of the plates through which the stays project and to which they are welded. Stays shall be supported at intervals not exceeding 6 feet.

C=274 for plates as above but not exposed to the products of combustion.

(b) The maximum distance from a corner welded joint to the nearest row of stay bolts shall not exceed one-half the maximum allowable pitch as determined by subpart 52.30.

(c) The diameter of a screw stay shall be taken at the bottom of the thread or point of least diameter. No screwed stay or stay attached by arc welding, shall be made of stock less than ¾ inch in diameter.

§ 53.03–25 *Areas to be stayed.* (a) The area of a segment of a flanged head to be stayed shall be the area enclosed by the lines drawn 2 inches from the tubes and 3 inches from the shell. For unflanged heads the area to be stayed shall be the area enclosed by the shell and a line drawn 2 inches from the tubes.

(b) The staying of unflanged heads of welded boilers is not required if the height of the segment between the top of the tubes and the under part of the shell does not exceed one and one-fourth times the maximum allowable pitch of the stays as determined by subpart 52.30. For boilers fabricated with the heads set inside the shell so that the distance from the end of the shell to the outside of the head is at least three times the shell thickness, staying is not required if the height of the segment between the top of the tubes and the under part of the shell does not exceed one and one-half times the maximum allowable pitch of the stays.

§ 53.03–30 *Allowable stresses for stays or braces.* The maximum allowable stresses for stays, staybolts, or braces shall be in accordance with table 53.03–30.

TABLE 53.03–30—MAXIMUM ALLOWABLE STRESSES FOR STAYBOLTS AND STAYS OR BRACES

Description of staybolts and stays or braces	Stresses (pounds per square inch)	
	For lengths between supports not exceeding 120 diameters [1]	For lengths between supports exceeding 120 diameters [1]
(a) Unwelded or flexible staybolts less than 20 diameters [1] long, screwed through plates with ends riveted over, or such staybolts welded in by the arc-welding process	7,500	.....
(b) Hollow steel stay-bolts less than 20 diameters [1] long, screwed through plates with ends riveted over, or such staybolts welded in by the arc-welding process	8,000	.....
(c) Unwelded stays or braces and unwelded portions of welded stays or braces	9,500	8,500

[1] Diameters taken at body of stay or brace.

§ 53.03–35 *Boiler tubes.* (a) The minimum thickness of copper tubes for heating boilers shall be determined by the following formula:

$$T=\frac{D}{45}+0.03 \qquad (1)$$

Where:

T=thickness of tube wall, in inches.

D=outside diameter of tube, in inches.

(b) Copper tubes thinner than No. 16 B. W. G. gauge shall not be used.

(c) The minimum thickness of steel or wrought iron tubes for heating boilers shall be in accordance with table 53.03–35 (c).

TABLE 53.03–35 (c)—STEEL OR WROUGHT IRON TUBE FOR HEATING BOILERS

Diameter (inches)	Minimum thickness of tubes (inches)
1 or over but less than 2½	0.095
2½ or over but less than 3¼	.105
3¼ or over but less than 4	.120
4 or over but less than 5	.135

(d) Tubes may be attached to tube sheets by rolling and beading, or by welding.

(e) Where rolled and beaded tubes are not normal to the tube sheets, the plates shall have sufficient thickness to provide a parallel seating of not less than ¼ inch in depth between planes at right angles with the axis of the tubes.

§ 53.03–40 *Riveted boilers.* Riveted joints of heating boilers shall conform to the requirements of subpart 52.10 as specified for power boilers.

§ 53.03–45 *Welded boilers.* (a) The design and construction of welded heating boilers shall conform to the applicable requirements prescribed in part 56 of this subchapter for power boilers, except as hereinafter specified.

(b) Radiographic examination and stress relieving of welded joints are not required.

(c) Welded longitudinal shell joints shall be of the double welded butt type or of the single welded butt type fitted with a backing strip.

(d) The circumferential welded shell joints may be of the single or double welded butt type.

(e) Unstayed dished heads without flanges, either concave or convex to the pressure, may be used, provided the diameter of the heads does not exceed 42 inches and the radius of dish does not exceed the diameter of the shell. For diameters exceeding 42 inches, heads meeting the requirements for power boilers shall be used.

(f) Where stays or tubes are welded to plates, the holes shall be countersunk or beveled by machining or pressing to within at least 1/16 inch of the full thickness of the plate. The staybolts shall be attached to the plates by strength fillet welds.

(g) Welded joints attaching unflanged heads, tube sheets, sides, or combustion chamber plates shall be of the single or double welded butt type where possible. Other acceptable types of attachments are the square tee double fillet welded joint and single or double bevel grooved joints.

(h) Unflanged plates of welded joints shall be beveled not less than 45° to permit complete penetration of the weld metal and shall have a fillet reinforcement whose throat dimension shall not be less than one and one-fourth times the thickness of the shell or head, whichever is the least.

§ 53.03–50 *Boiler openings.* (a) Boilers shall be provided with suitable manhole or handhole openings or washout plug openings to permit internal inspection and removal of sediment. Where the size of the boiler is such that entrance is impractical manhole openings may be omitted.

(b) A manhole shall be placed in the front head below the tubes of a horizontal return tubular boiler 48 inches or over in diameter. There shall be a manhole in the upper part of shell or head of a fire-tube boiler over 48 inches in diameter, except a vertical fire-tube boiler, or a boiler used exclusively for hot-water heating where there is no steam space.

(c) Vertical fire-tube or similar type boilers shall have at least 3 handholes or washout plugs in the lower part of the water leg and at least 2 handholes or washout plugs near the line of the lower tube sheet.

(d) A fire door or other access opening not less than 11 by 15 inches or 10 by 16 inches or 15 inches in diameter shall be provided for the furnace of an internally fired boiler in which the least furnace dimension is 28 inches or over.

(e) Washout plugs shall be made of nonferrous material and be of not less than 2 inches pipe size.

(f) Washout openings may be used for return pipe connections and the washout plug placed in a tee so that the plug is directly opposite and as close as possible to the opening in the boiler.

(g) All threaded openings shall be tapped into material having a minimum thickness as specified for the various pipe sizes in table 53.03–50 (g).

TABLE 53.03–50 (g)—MINIMUM THICKNESS OF MATERIAL FOR THREADED CONNECTIONS

Pipe size (inches)	Minimum thickness of material or length of thread required (inches)
1 and under	1/4
1 1/4 to 2, inclusive	5/16
2 1/2	7/16
3 to 3 1/2, inclusive	5/8

(h) Flanged pipe connections to boilers shall conform to the standards given in table 55.07–15 (e3) of Part 55 of this subchapter for the corresponding pipe sizes.

§ 53.03–55 *Installation.* (a) Feed or make-up water shall not be discharged directly into any part of a boiler exposed to the radiant heat of the fire. Feed water shall not be introduced through the openings or connections used for the water column, the water gauge, or the gauge cocks.

(b) Hot water systems shall be so installed that there will be no opportunity for the fluid-relief column to be accidentally shut off.

(c) When a stop valve is used in the supply pipe connection of a single boiler, there shall be one used in the return pipe connection.

(d) A stop valve shall be used in each supply and return pipe connection if more than one boiler is connected to a common system.

(e) Provision shall be made for cleaning the interior of the return piping at or close to the boiler.

(f) When stop valves are used they shall be properly designated on tags of metal or other durable material as indicated by the following:

> Supply valve—Number ( ). Do not close without also closing return valve—Number ( ).

> Return valve—Number ( ). Do not close without also closing supply valve—Number ( ).

(g) After installation the boiler shall be hydrostatically tested to twice the pressure at which the safety or relief valve is set to open.

§ 53.03–60 *Safety and relief valves.* (a) Each steam boiler shall have one or more approved safety valves of the spring-pop type adjusted and set to discharge at a pressure not to exceed 30 p. s. i.

(b) No safety valve shall be smaller than 3/4 inch nor larger than 4 inches. Safety valves may be attached to heating boilers by either flanged or screwed connections. The inlet opening shall have an inside diameter approximately equal to, or greater than the seat diameter.

(c) Each hot-water heating boiler shall have one or more approved relief valves of the spring-loaded type without disk guides on the pressure side of the valve. The valves shall be set to discharge at a pressure not exceeding the design pressure of the boiler. No relief valve shall be smaller than 3/4 inch nor larger than 2 inches pipe size.

(d) Each safety and relief valve shall have a suitable lifting device which will positively lift the disk from its seat at least 1/10 inch when there is no pressure on the boiler.

(e) Safety and relief valves shall be installed with spindle vertical if possible, and may be connected directly to the boiler, or to a fitting connected to the boiler by means of a close nipple or Y base, or to a steam pipe between two boilers, or to a header connecting steam outlets on the same boiler. Safety and relief valves shall not be connected to an internal pipe in the boiler.

(f) When a Y base is used the inlet area shall be not less than the combined outlet areas.

(g) Shut-off valves shall not be placed between the safety and relief valve and the boiler, nor in the discharge piping between such valves and the atmosphere.

(h) The escape from safety and relief valves shall be fitted with discharge piping so arranged that there will be no danger of scalding operating personnel. The area of the discharge pipe shall be not less than the area of the valve or aggregate area based on the nominal diameters of the valves with which it connects. The discharge pipe shall be fitted with an open drain.

§ 53.03–65 *Discharge capacities of safety and relief valves.* (a) The sizes and discharge capacities of safety and relief valves for heating boilers shall conform to the requirements of subpart 52.65 covering safety valves for power boilers except as provided for in this part.

(b) The safety and relief valves for each boiler shall be tested for capacity at 3 percent for steam boilers and 10 percent for hot-water boilers over the 30 p. s. i. required set pressure of the valves.

(c) For determining the B. t. u. discharge of relief valves for hot-water boilers the weight of steam (W) in pounds per hour shall be multiplied by 1,000. The weight of steam (W) shall be determined by § 52.65–10 of this subchapter.

(d) The minimum valve capacity in pounds per hour shall be determined by dividing the maximum B. t. u. output at the boiler nozzle for which the unit is designed by 1,000 or by multiplying the square feet of heating surface by 5. In some instances, a larger valve may be required and in all cases the requirement of paragraph (e) of this section shall be met.

(e) The safety and relief valve capacity for each boiler shall be such that with any fuel-burning equipment installed, the pressure cannot rise more than 6 percent for steam boilers and 10 percent for hot-water boilers above the maximum allowable pressure of the boilers.

(f) Each safety or relief valve shall be plainly marked by the manufacturer in such a way that the markings will not be obliterated in service. The markings may be stamped on the valve body or stamped or cast on a plate securely fastened to the body, and shall contain the following information:

(1) The name of manufacturer _____

(2) Size _____ inches.
(The pipe size of the valve inlet)

(3) Pressure _____ p. s. i.
(Set pressure)

(4) Capacity _____ lbs. per
(In accordance with § 52.65–10)
hour or relief valve marking. Capacity _____ B. t. u. per hour.

§ 53.03–70 *Fittings and appliances*—(a) *Steam gauges.* (1) Each steam boiler shall have a steam gauge connected to its steam space, or to its water column, or to its steam connection by means of a siphon or equivalent device exterior to the boiler and of sufficient capacity to keep the gauge tube filled with water and so arranged that the gauge cannot be shut off from the boiler except by a cock, with T or lever handle, placed in the pipe near the gauge. The handle of the cock shall be parallel to the pipe on which it is located when the cock is open.

(2) Connections to steam gauge siphon shall be of nonferrous metal when smaller than 1 inch pipe and longer than 5 feet between the siphon and point of connection of pipe to boiler, and also when smaller than 1/2 inch pipe size and shorter than 5 feet between the siphon and point of connection of pipe to boiler.

(3) The scale on the dial of the gauge shall be graduated to not less than 30 p. s i. The gauge shall be provided with effective stops for indicating pointer at the zero point. The travel of the pointer from zero to 30 p. s. i. shall be at least 3 inches.

(b) *Water pressure gauges.* (1) Each hot water boiler shall have a pressure gauge connected to it or to its flow connection in such a manner that it cannot be shut off from the boiler except by a cock, with T or lever handle, placed on the pipe near the gauge. The handle of the cock shall be parallel to the pipe on which it is located when the cock is open.

(2) Pressure gauge connections shall be of nonferrous material when smaller than 1 inch pipe size and longer than 5 feet between gauge and point of connection of pipe to boiler, and also when smaller than ½ inch pipe size and shorter than 5 feet between gauge and point of connection of pipe to boiler.

(c) *Thermometers.* (1) Each hot water boiler shall have a thermometer so located and connected that it will be easily readable when observing the water pressure.

(2) The thermometer shall be so located that it shall at all times indicate the temperature in degrees Fahrenheit of the water in the boiler or near the outlet.

(d) *Temperature combustion regulator.* A temperature combustion regulator, which will control the rate of combustion to prevent the temperature of the water from rising above 250° F. at or near the outlet, or a thermostatic device which will relieve the pressure on the boiler when the temperature exceeds 250° F. shall be installed on each hot water heating boiler.

(e) *Bottom blowoff.* Each boiler shall have a blowoff pipe connection fitted with a valve or cock of not less than ¾ inch pipe size connected to the lowest water space available.

(f) *Water gauge glasses.* Each steam boiler shall have one or more water gauge glasses attached to the water column or boiler by means of valved fittings with the lower fitting provided with a valve or pet cock.

(g) *Gauge cocks.* Each steam boiler shall have two or more gauge cocks located within the visible range of the water glass.

(h) *Water column pipes.* The minimum size of pipes connecting a water column to a steam boiler shall be 1 inch. No connections, except for regulator, drain or steam gauge, shall be attached to a water column or the piping connecting a water column to a boiler. If the water column or gauge glass is connected to the boiler by pipe and fittings, a T, or equivalent fitting, in which a drain valve and piping may be attached, shall be installed in the water piping connection at every right angle turn to facilitate cleaning.

(i) *Low-water fuel cut-off.* (1) All automatically fired steam boilers shall be equipped with low-water fuel cut-off so located as to automatically cut off the fuel supply when the surface of the water falls below the lowest safe water level.

(2) An automatic water feeding device, so located as to supply the required amount of feedwater when the surface of the water falls below the safe water level, may be installed in conjunction with the required low-water fuel cut-off.

§ 53.03–75 *Hydrostatic tests, inspection, and stamping.* (a) Each boiler shall be subject to a hydrostatic test pressure of not less than 60 pounds per square inch by the manufacturer.

(b) In the event of any defects developing, the defective material may be replaced and the boiler retested.

(c) Individual shop inspection of heating boilers by an inspector is not required. Such inspection shall be made by the manufacturer while the boiler is subjected to the required hydrostatic test pressure to insure that there are no defects in workmanship and materials.

(d) Upon completion of the hydrostatic tests and inspection and after the boiler is found acceptable it shall be stamped in a suitable location so as to be readily visible, with the following data:

(Name of fabricator and serial number)

(Month and year fabricated)
---p. s. i.
(Maximum w. p.) (Steam or water)
---- B. t. u. per hour, or pounds per hour.
(Safety or relief valve capacity, minimum)

(Coast Guard Approval No.)

SUBPART 53.05—CAST-IRON HEATING BOILERS

§ 53.05–1 *Scope.* The regulations in this subpart contain detail requirements for the design and construction of cast-iron heating boilers.

§ 53.05–5 *Manufacturer's certification.* A manufacturer desiring to fabricate cast-iron heating boilers for use on vessels subject to inspection by the Coast Guard shall submit an affidavit on Form CG–935A certifying that such boilers will comply with all the applicable requirements of the regulations in this subchapter.

§ 53.05–10 *Material.* The material used in the fabrication of cast-iron heating boilers shall conform to the requirements of subpart 51.64 for grade B or grade C cast iron.

§ 53.05–15 *Washout openings.* All cast-iron steam and hot water heating boilers shall be provided with suitable washout openings to permit the removal of any sediment that may accumulate therein. Washout openings may be used for return pipe connections and the washout plug placed in a T so that the plug is directly opposite and as close as possible to the opening in the boiler.

§ 53.05–20 *Flanged connections.* Flanged pipe connection openings in boilers shall conform to the American Standard given in table 55.07–15 (j1) of § 55.07–15 (j) of this subchapter for the corresponding pipe size and shall have the corresponding drilling for bolts or studs.

§ 53.05–25 *Threaded openings.* All threaded openings shall be tapped into material having a minimum thickness as specified in table 53.05–25.

TABLE 53.05–25—MINIMUM THICKNESS OF MATERIAL FOR THREADED CONNECTIONS

Pipe size (inches)	Minimum thickness of material required (inches)
¼ and under	5/16
⅜ to 2½, inclusive	7/16
3 to 3½, inclusive	9/16

§ 53.05–30 *Hydrostatic tests, inspection, and stamping.* (a) The completed boiler shall be subject to a hydrostatic test pressure of not less than 60 pounds per square inch by the manufacturer.

(b) In the event of any defects developing, the defective cored section may be replaced and the boiler retested.

(c) Individual shop inspection of cast-iron heating boilers by an inspector is not required. Such inspection shall be made by the manufacturer while the boiler is subjected to the required hydrostatic-test pressure to insure that there are no defects in workmanship and materials.

(d) (1) All cast-iron heating boilers shall be plainly and permanently marked, stamped, or cast with the following data:

(i) ---
(Name of fabricator and serial number).
(ii) ---
(Month and year fabricated).
(iii) --- p. s. i.
(Maximum w. p.) (Steam or water).
(iv) --- pounds per hour or B. t. u. per hour. (Safety or relief valve capacity, minimum).
(v) Coast Guard Approval No.---

(2) Items (i), (ii), and (iii) shall be stamped or cast on all cored sections of the boiler. In addition, a name plate containing all the markings listed herein shall be attached in a suitable location on the outside of the completed boiler or casing.

§ 53.05–35 *Installation.* The provisions of § 53.05–55 shall apply to cast-iron boilers.

§ 53.05–40 *Safety and relief valves.* The provisions of § 53.03–60 shall apply to cast-iron boilers except that the safety or relief valve shall be set to discharge at a pressure not to exceed 15 p. s. i.

§ 53.05–45 *Discharge capacities of safety and relief valves.* (a) The provisions of § 53.03–65 shall apply except as specified in this section.

(b) Safety valves for cast-iron heating boilers shall be tested for capacity at 33⅓ percent over the 15 p. s. i. required set pressure. Relief valves shall be tested at 10 percent over the required set pressure.

(c) The safety and relief valve capacity for each cast-iron boiler shall be such that, with any fuel-burning equipment installed, the pressure cannot rise above the maximum allowable pressure more than 5 p. s. i. for a steam boiler or 3 p. s. i. for a hot-water boiler.

§ 53.05–50 *Fittings and appliances.* The provisions of § 53.03–70 shall apply to fittings and appliances for cast-iron boilers.

PART 55—PIPING SYSTEMS

SUBPART 55.04—PIPING CLASSIFICATION

1. Section 55.04–1 (13 F. R. 1731) is amended to read as follows:

§ 55.04–1 *Class I piping.* Class I piping includes the various systems conveying mediums over pressures or temperatures as follows:

TABLE 55.04-1—PRESSURE AND TEMPERATURE LIMITATIONS

Service	Pressure (pounds per square inch)	Temperature (° F.)
Lethal gases and liquids.	Any	Any.
Gases or vapors	Over 150	Over 500-650.[1]
Water	Over 150	Over 300.
Fuel oil	Over 150	Over 150.
Lubricating oil	Over 150	Over 200.
Compressed gases	Over 150	

[1] For temperatures exceeding 500° F., the pressure shall not exceed the following: 150 pounds per square inch when the temperature is 500° F.; 140 pounds per square inch when the temperature is 550° F.; 130 pounds per square inch when the temperature is 600° F.; 120 pounds per square inch when the temperature is 650° F.

(R. S. 4417a, 4418, 4426, 4427, 4429–4434, 4453, and 4491, sec. 14, 29 Stat. 690, 41 Stat. 305, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 363, 366, 391a, 392, 404, 405, 407–412, 435, 1333, 50 U. S. C. 1275)

SUBPART 55.07—DETAIL REQUIREMENTS

2. Section 55.07–15 is amended by changing the descriptions for figures 55.07–15 (f5) and 55.07–15 (f6) (13 F. R. 1736) to read as follows:

§ 55.07–15 *Joints and flange connections.* * * *

(f) * * *

FIGURE 55.07–15 (f5). Flanges machined from steel plate meeting the requirements of subpart 51.22 may be used for class II piping for pressures not exceeding 125 pounds per square inch and temperatures not exceeding 450° F. The machined flanges shall comply with table 55.07–15 (e3). The face of the flanges shall extend beyond the end of the pipe at least equal to the thickness of the pipe wall.

FIGURE 55.07–15 (f6). Steel plate flanges meeting the material and construction requirements listed in figure 55.07–15 (f5) may be used for class II piping for pressures not exceeding 150 pounds per square inch and temperatures not exceeding 650° F. The flange shall be attached to the pipe as shown by figure 55.07–15 (f6). For temperatures exceeding 500° F., the pressure shall not exceed that permitted by table 55.07–15 (e10).

(R. S. 4417a, 4418, 4426, 4427, 4429–4434, 4453, and 4491, sec. 14, 29 Stat. 690, 41 Stat. 305, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 363, 366, 391a, 392, 404, 405, 407–412, 435, 1333, 50 U. S. C. 1275)

3. Section 55.07–15 (g) (13 F. R. 1735) is amended to read as follows:

(g) Forged or cast steel valves, flanges, and pipe fittings of the socket welding type, wherein the pipe is inserted into the socket and is secured by means of a strength fillet weld may be employed for pipe diameters not exceeding 2 inches for class I piping and without diameter limitation for class II piping. (R. S. 4417a, 4418, 4426, 4427, 4429–4434, 4453, and 4491, sec. 14, 29 Stat. 690, 41 Stat. 305, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 363, 366, 391a, 392, 404, 405, 407–412, 435, 1333, 50 U. S. C. 1275)

SUBPART 55.10—PUMPING ARRANGEMENTS AND PIPING SYSTEMS

4. Section 55.10–1 (13 F. R. 1739) is amended to read as follows:

§ 55.10–1 *Bilge and ballast systems*—(a) *General.* All vessels shall be provided with a satisfactory pumping plant capable of pumping from and draining any compartment when the vessel is on an even keel and either upright or listed. For this purpose wing suctions will generally be necessary except in narrow compartments at the ends of the vessel. Arrangements shall be made whereby water in the compartments will drain to the suction pipes. Efficient means shall be provided for draining water from all tank tops, other watertight flats and holds. Peak tanks, chain lockers and decks over peak tanks may be drained by eductors, ejectors, or hand pumps.

(b) *Bilge pumps.* Bilge pumps for vessels of various types, sizes, and service shall be provided as follows:

(1) *Large self-propelled passenger and cargo vessels.* (i) Ocean, coastwise, and Great Lakes vessels, 180 feet in length or more, shall have at least three power pumps connected to the bilge main. For passenger vessels operating more than 200 miles offshore, one of the required pumps shall be an emergency pump of a reliable submersible type, the source of power for which shall be located above the bulkhead deck.

(ii) When the criterion numeral exceeds 30 an additional independent power pump shall be provided.

NOTE: See § 46.4 of this chapter (Subchapter E—Load Lines) for determination of criterion numeral.

(iii) One of the required bilge pumps may be attached to the main propelling engine.

(iv) The bilge and ballast systems of Great Lakes cargo vessels are exempted from the requirements of this paragraph; however, suitable means of pumping and draining compartments acceptable to the Commandant shall be provided.

(2) *Small self-propelled passenger and cargo vessels.* (i) All vessels below 180 feet in length shall have at least two power pumps connected to the bilge main.

(ii) One of the required bilge pumps may be attached to the main propelling engine, except as provided for in subdivision (iv) of this subparagraph.

(iii) On lakes, bays, sounds, and river vessels where steam is always available, or where suitable water supply is available from a power pump of adequate pressure and capacity, syphons or eductors may be substituted for one of the required power pumps provided a syphon or eductor is permanently installed in each cargo hold or compartment.

(iv) A vessel of 100 gross tons or less shall have at least one power pump or two suitable hand pumps. The pumps shall meet the requirements of paragraph (f) of this section, but in no case shall the capacity be less than 50 gallons per minute.

(3) *Self-propelled tank vessels.* (i) Two power driven bilge pumps shall be connected to the bilge main in the machinery space of each tank ship.

(ii) One of the required bilge pumps may be attached to the main propelling engine.

(iii) The bilges forward of the cargo tanks may be drained by a power or hand pump, syphons, or eductors. If syphons or eductors are employed, the same shall be permanently installed in each compartment.

(4) *Oceangoing sailing vessels and barges.* Efficient hand pumps which can be operated from above the bulkhead deck or the highest convenient level which is always accessible shall be installed on oceangoing sailing vessels and barges. There shall be one pump for each compartment or two pumps connected to a bilge main having at least one branch to each compartment. Where power is always available two power pumps connected to the bilge main may be substituted for the hand pumps.

(5) *River and harbor service, unmanned barges.* Suitable hand or power-operated pumps or syphons, portable or fixed, carried either on board the barge or on the towing vessel shall be provided for river and harbor service on unmanned barges.

(c) *Priming.* Suitable means shall be provided for priming centrifugal pumps.

(d) *Location.* The power bilge pumps shall be located in separate watertight compartments where practicable. If watertight bulkheads separate the engine and boiler rooms a direct suction shall be fitted to each compartment unless the bilge pumps are distributed throughout these compartments, in which case at least one pump in each compartment shall be fitted with a direct suction in its compartment.

(e) *Other pumps.* Sanitary, ballast, and general service pumps may be accepted as independent power bilge pumps if fitted with the necessary connections to the bilge-pumping system.

(f) *Independent power bilge pumps.* The independent power bilge pumps required by paragraph (b) of this section shall be capable of drawing the water through their suction pipes at a velocity of not less than 400 feet per minute under ordinary working conditions.

5. Section 55.10–5 (13 F. R. 1739) is amended by adding a new subparagraph (3) to paragraph (a) and by amending paragraph (g), which read as follows:

§ 55.10–5 *Bilge and ballast piping.*

(a) * * *

(3) For vessels of 100 gross tons or less the bilge pipe sizes computed by formulas (1) and (2) of this paragraph are not mandatory, but in no case shall the size be less than one inch nominal pipe size.

* * * * *

(g) Pipes for draining cargo or machinery spaces shall be separate from pipes which are used for filling or emptying spaces where water or oil is carried and shall be controlled by separate valves at the pumps so arranged as to preclude the entrance of water or oil into cargo or machinery spaces. The foregoing requirements do not apply to bilge and ballast systems on Great Lakes cargo vessels which may employ a common line for the bilge and ballast system for the cargo spaces.

This document will be continued in subsequent issues of the Proceedings.

Dated: June 22, 1948.

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

[F. R. Doc. 48–5789; Filed, June 25, 1948; 8:59 a. m.; 13 F. R. 3521 to 3543, June 28, 1948]

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 3–48

United States Coast Guard

MAY 11, 1948.

Procedure for effecting waivers of navigation and inspection laws and conditional waivers of manning requirements: Changes in waiver authority occasioned by extension of Public Law 27, 80th Congress, as amended.

PART I. GENERAL INFORMATION

(a) Navigation and Vessel Inspection Circular 8–47 (21) August 1947) is superseded by this circular and is cancelled effective 15 July 1948. The provisions of this circular are effective on and after 15 July 1948.

(b) The purpose of this circular is to publish in one document an explanation of outstanding general waivers of manning requirements and the procedures for effecting individual waivers of the navigation and inspection laws as authorized and limited by Public Law 27, 80th Congress, as amended by Public Laws 293 and 423, 80th Congress. A copy of Public Law 27 as amended by Public Laws 293 and 423 follows this circular.

(c) A revision of Navigation and Vessel Inspection Circular 8–47 is necessary because of the changes in the general waivers of manning requirements which are to be in effect on and after 15 July 1948 and which were decided upon after public hearing by the Merchant Marine Council of the Coast Guard on 31 March 1948. This circular contains no changes in the procedure for effecting individual waivers (part II of this circular) and the method of reporting crew shortages occurring during a voyage (part III of this circular). Part IV of this circular explains the general conditional waiver of manning requirements which permits conditionally the employment of holders of limited able seaman certificates to the extent of one-half the total number of AB's required on vessels other than those navigating the Great Lakes. The conditional general waivers permitting a relaxation in the able seaman and qualified member of the engine department requirements on Great Lakes vessels are explained in part V of this circular. The employment of "war service" aliens on subsidized vessels under general waiver is explained in part VI. The conditions upon which aliens may be employed on subsidized vessels are the same as explained in Circular 8–47 except the allowable maximum percentage has been reduced from 25 to 15 percent.

(d) On and after 15 July 1948 the following changes in the procedure for effecting waivers of manning requirements will be in force:

(1) The substitution of persons certificated or licensed in lower ratings to fill higher ratings may be made only by individual waiver in accordance with part II of this circular, except for AB's on all cargo and tank vessels and firemen on coal burning Great Lakes cargo and tank vessels. (See parts IV and V of this circular.)

(2) Only holders of limited (12 months—any waters) AB certificates may be substituted under general waiver for up to one-half the number of AB's required on cargo and tank vessels other than those navigating the Great Lakes. (See part IV.)

(3) On Great Lakes cargo and tank vessels only those persons with 8 months or more service on deck may be substituted under general waiver for up to one-half the number of AB's required, and persons with 3 months or more service in the fireroom of coal burning vessels may be substituted under general waiver for QMED's in the rating of fireman. (See part V.)

(4) Under general waiver only up to 15 percent of the total unlicensed crew on subsidized vessels may be "war service" aliens. (See part VI.)

(e) By the terms of Public Law 27 as amended by Public Laws 293 and 423, the Commandant's authority to grant waivers remains in force only until 1 March 1949. A further extension of this date appears unlikely.

(f) Since 1 June 1947 no alien has been permitted to serve as a watch officer on United States vessels and the procedure formerly set up by the Coast Guard for approving aliens to serve under waiver as watch officers is inoperative and all outstanding lists of approved aliens and individual letters of approval are without force and effect.

(g) It is the policy of the Coast Guard, in the current administration of the laws and regulations relating to navigation and vessel inspection, to further the orderly reconversion of the merchant marine from wartime to peacetime operations by simplifying the procedure involved therein, eliminating all causes of delay in the sailing of vessels, and by bringing

about a proper balance between the factors of safety at sea and this orderly reconversion. Various orders have been issued since 1 March 1942 for the purpose of carrying out this policy. While it is not the policy of the Coast Guard to countenance wilful violations of the laws and regulations or negligence in meeting the requirements thereof, neither is it contemplated that masters who exercise all reasonable efforts to comply with the requirements in effect be cited for violations on technical grounds.

PART II. PROCEDURE FOR EFFECTING INDIVIDUAL WAIVERS OF NAVIGATION AND INSPECTION LAWS

(a) Public Law 27, 80th Congress, as amended by Public Laws 293 and 423, 80th Congress, authorizes the Commandant of the Coast Guard to waive compliance with the navigation and vessel inspection laws administered by the Coast Guard to the extent and in such manner and upon such terms as may be deemed necessary by him in the orderly reconversion of the merchant marine from wartime to peacetime operations. The waiver dated May 14, 1947, in document CGFR 47–30, page 106, June 1947 Proceedings issued pursuant to this law is an order of the Commandant in which he finds it necessary in the orderly reconversion of the merchant marine to make effective certain waivers to the extent and in the manner set forth therein. This order outlines the procedure under which the requirements of the laws in question may in urgent situations be relaxed by Coast Guard District Commanders and their designated representatives in ports located within their respective districts, and by designated representatives of the Commandant in other than domestic ports at which Coast Guard officers are assigned to duty. The objective of this order is to make possible a flexible means of maintaining a proper balance between safety at sea and the orderly reconversion of the merchant marine from wartime to peacetime operation.

(b) Each Coast Guard District Commander may designate, in writing, qualified commissioned or civilian officers of appropriate rank or position to act as his representatives in the carrying out the provisions of the waiver dated May 14, 1947, in document CGFR 47–30, page 106, June 1947 Proceedings. In his order of designation the District Commander may impose such restrictions and conditions upon the authority of such representatives as he may deem proper. Copies of such designations shall be forwarded to Headquarters. The ports at which such representatives are designated shall be determined by the respective District Commanders.

(c) It is to be noted that under this procedure application may be made by any person interested in the vessel involved, including representatives of any interested Government agency. It should also be noted that applications are to be forwarded to Headquarters for action by the Commandant in all cases in which it appears to the Coast Guard officer concerned that the delay involved in Headquarters action will not prevent the vessel from sailing on time or otherwise impede the orderly reconversion of the merchant marine. In other words, it is intended that waivers be made effective in the field only in those cases in which time will not permit action by Headquarters. However, the Coast Guard officer concerned is the sole judge of whether time will permit reference of the application to Headquarters. While it is contemplated that applications will be made in writing except in unusual circumstances, no oral application which is made with representations of urgency and which is otherwise merited should be denied on the ground that it could have been made in writing but for the neglect of the person making the same. However, full particulars of cases in which it appears that the oral application privilege has been abused shall be reported to Headquarters for appropriate action. This action in proper cases may be either by way of proceedings for suspension or revocation in the case of licensed officers or by report to the agency involved in cases involving representatives of the Government. Headquarters should also be advised of the particulars of all cases in which the waiver is made effective upon oral application and the application is not reduced to writing and filed within the period specified in the waiver order as required by inclosure (2). In such cases Headquarters will advise the appropriate district commanders whether the penalties provided by law for failure to comply with the requirements conditionally waived should be invoked.

(d) This waiver order does not authorize general waivers. Only the Commandant is authorized to issue general waivers which affect more than one vessel in one order.

(e) Although the certification of the person making an application should always be given due consideration, it is not contemplated that the Coast Guard officers authorized to make the waiver effective will be guided solely by the representations contained in applications. Each application should be considered in the light of such factors as the time at which the vessel is scheduled to depart, the mission of the vessel, the requirements of law proposed to be relaxed, the effect of relaxation upon the safety of the vessel and the persons on board, the consequences of failure to relax such requirements insofar as orderly reconversion of the merchant marine is concerned, and all other relevant factors. If after full consideration of the application it is the judgment of the Coast Guard officer concerned that orderly reconversion of the merchant marine justifies the risk so calculated then the waiver should be made effective to the extent deemed justified. On the other hand, if the Coast Guard officer concerned after having given such consideration to the application is of the opinion that the waiver is not justified he shall refuse to issue the waiver order regardless of the representations contained in the application.

(f) Of the factors listed above which should be given consideration in connection with each application for waiver, perhaps the most important is the effect of relaxation upon the safety of the vessel and the persons on board. This is particularly true in cases involving the laws and regulations governing the handling and stowage of ammunition, explosives, gasoline, and other dangerous cargo. Consequently, it is expected that provisions of these laws and regulations will be made inoperative only in cases of extreme necessity and that in each such case, unless the application has been sent to Headquarters, the Coast Guard officer concerned will, if time permits, consult the head of the appropriate division at Headquarters by telephone prior to making the waiver effective. It is also expected that in important cases involving other laws or regulations Headquarters will likewise be consulted by telephone if time permits.

(g) Applications for waivers and the waiver order will continue to be made on Coast Guard Form CG 2633 with the following changes made on the form. The number "37" appearing in the title of the application and order should be changed to "3–48 Part II," and the words "Conduct of war" appearing in the certification made by the applicant should be stricken out and the words "orderly reconversion of the merchant marine from wartime to peacetime operations" substituted therefor. This form will be revised on reprinting. One copy of every application filed and acted upon in the field shall be forwarded to Coast Guard Headquarters regardless of whether the application is granted or denied. In cases where the application is denied a notation to that effect, signed by the Coast Guard officer concerned, shall

be made on the face of the copy of the application sent to Headquarters.

PART III. CREW SHORTAGE REPORTS REQUIRED UNDER R. S. 4463; FORM OF REPORTING

(a) R. S. 4463 (46 U. S. C. 222) provides, among other things, for the establishment of a crew complement for every vessel subject to the inspection laws. This complement specifies the number of officers and seamen of various ranks and ratings considered necessary to the safe navigation of the vessel. Under R. S. 4463, a vessel for which a complement has been established is prohibited from being navigated prior to the filling of such complement by the signing on of the full crew called for thereby, that is, a crew which meets the requirements of the complement both as to number and quality. Furthermore, that statute requires such complements to be filled prior to the navigation of the vessel after the expiration of each period for which a full crew is signed on.

(b) Parts IV and V of this circular explain general waivers of the requirements of R. S. 4463 as to quality of the crew but not as to the number of the crew. There is no waiver permitting a vessel to be navigated with less than the total number of crew members specified in its complement and this situation is governed by R. S. 4463.

(c) R. S. 4463 outlines the conditions under which a vessel may be navigated in situations where the vessel is deprived of the services of any number of her crew during the period for which the full crew has been signed on. In such cases if the vacancies are filled with replacements of the same grade or a higher rating the vessel may, of course, continue to be navigated just as though no vacancies had occurred. She may be navigated without all positions occupied by such replacements only if (1) such services were lost through desertion or casualty; (2) such services were lost without the consent, fault, or collusion of the master, owner, or any other person interested in the vessel; (3) the master was unable to obtain replacements of the same grade or of a higher rating to fill the vacant positions; and, (4) it is the judgment of the master that the vessel is sufficiently manned.

(d) For purposes of administration of R. S. 4463, the terms "desertion or casualty" shall be construed to include all circumstances beyond the control of the master, owner, or any other person interested in the vessel which result in crew vacancies.

(e) In cases where a vessel which has been deprived of the services of crew members through desertion or casualty is navigated with fewer crew members on board than the complement for the vessel calls for, or with replacements of lower grade or rating, R. S. 4463 requires that the master report such shortage and explain the cause thereof in writing to the Officer in Charge, Marine Inspection, within 12 hours of the arrival of the vessel at her destination. No particular form is required by this statute to be used in making such report.

(f) To reduce paper work and simplify the filing of reports Coast Guard Form CG 729 may be used. Masters using this form must make appropriate modification thereof to indicate that the report is a shortage report under R. S. 4463, enter thereon the name and license or certificate number of each member of the crew who left the vessel, state the cause of the shortage and the port at which it occurred, certify that no replacements of the same grade or of a higher rating were obtainable and that in his judgment the vessel was sufficiently manned, and file the same in duplicate with the Officer in Charge, Marine Inspection, within 12 hours of the arrival of the vessel at her destination.

(g) Form CG 729 may be modified to report crew shortages. Reports in this form shall be accepted by the Officer in Charge, Marine Inspection. This officer shall forward one of the copies filed with him to Headquarters without delay.

The waiver dated April 12, 1948, in document CGFR 48–18, page 78, May 1948 Proceedings.

PART IV. CONDITIONAL WAIVER OF MANNING REQUIREMENTS: ABLE SEAMEN ON OTHER THAN GREAT LAKES CARGO AND TANK VESSELS

(a) Is a conditional waiver of the manning requirements for merchant cargo and tank vessels other than those navigating the Great Lakes.

(b) This waiver has general application to all cargo and tank vessels other than those navigating the Great Lakes. It permits holders of AB certificates endorsed "any waters—12 months" to be employed in the crews of cargo and tank vessels to the extent of the nonavailability of fully qualified AB's but not to exceed one-half the number of able seamen required on the vessel by its Certificate of Inspection. On the average vessel where six AB's are required this will mean that three of the six may be holders of limited certificates instead of one of the six allowed by law.

(c) No written reports of substitutions made in crews pursuant to this general waiver are required of a vessel's master, owner, or operator. Shipping Commissioners, however, shall make a notation on the shipping articles of all AB's signed on under this general waiver. This notation shall be made opposite the seaman's name in the column entitled "capacity" by adding "12 mos" under the letters "AB."

(d) The requirement in the waiver order that reasonable efforts be made to secure properly certificated AB's is to be literally construed. While no statement outlining these efforts is required the Coast Guard may require a justification for substitutions in specific cases, especially those where it appears there has been a violation of the intent and purpose of the waiver authority. In this connection attention is called to the penalty provision contained in the waiver order.

(e) It is pointed out that all crew substitutions on passenger vessels and substitutions other than those specifically authorized by inclosure (4) and explained in this Part may be made only upon application to and approval by the Coast Guard District Commander or his authorized representative and on an individual ship basis in accordance with the procedure outlined in Part II of this Circular.

PART V. CONDITIONAL WAIVER OF MANNING REQUIREMENTS: ABLE SEAMEN AND QMED'S ON GREAT LAKES VESSELS

(a) The waivers dated April 12, 1948, in documents CGFR 48–19 and 48–21, pages 79 and 80, May 1948 Proceedings, are conditional waivers of the manning requirements applicable to Great Lakes merchant cargo and tank vessels.

(b) The waiver order in CGFR 48–19 has general application to all cargo and tank vessels navigating the Great Lakes. It permits certificated ordinary seamen who have served a minimum of 8 months on deck at sea or on the Great Lakes to be employed in the crews of cargo and tank vessels to the extent of the nonavailability of fully qualified able seamen but not to exceed one-half the number of such able seamen required on the vessel by its Certificate of Inspection. Certificated ordinary seamen employed under this waiver are required to present to the master of the vessel at the time of being employed authentic evidence of at least 8 months' service on deck at sea or on the Great Lakes. The evidence of this service is required to be in the form of certificates of discharge or other properly authenticated records of service which show the name of the vessel or vessels and the dates employed thereon. Entries in continuous books or signed records of service issued to the man by masters or operators of vessels

meet the requirements of this provision.

(c) The waiver contained in CGFR 48–21 is the waiver order which has general application to all coal burning merchant cargo and tank vessels of the United States navigating the Great Lakes. It permits seamen who are certificated for other engine room ratings to be employed as QMED in the rating of fireman on coal burning Great Lakes vessels to the extent of the nonavailability of fully qualified QMED's in the rating of fireman. Seamen substituted for QMED's under this waiver must have served a minimum of 3 months in the fireroom of coal burning Great Lakes vessels and such seamen must present to the master of the vessel at the time of being employed authentic evidence of this 3 months' service. Certificate of discharge, entries in continuous discharge books, and signed records of service issued by masters or operators showing the name of the vessel or vessels and the dates employed thereon will be acceptable.

(d) No written reports of substitutions made in crews of Great Lakes vessels pursuant to the general waivers are required of a vessel's master, owner, or operator. The requirement in these waiver orders that reasonable efforts be made to secure properly certificated AB's and QMED's is to be literally construed and the Coast Guard may require an explanation in the form of a justification for substitutions in specific cases, especially those where it appears that there has been a violation of the intent and purpose of the waiver authority. In this connection attention is called to the penalty provision contained in the waiver orders.

(e) It is pointed out that all crew substitutions on passenger vessels and substitutions other than those specifically authorized by CGFR 48–19 and 48–21, and explained in this Part may be made only upon application to and approval by the Coast Guard District Commander or his authorized representative and on an individual ship basis in accordance with the procedure outlined in Part II of this Circular.

PART VI. EMPLOYMENT OF ALIENS AS UNLICENSED CREW MEMBERS OF SUBSIDIZED VESSELS; CONDITIONAL WAIVER

(a) The conditional waiver, dated April 12, 1948, in document CGFR 48–20, page 80, May 1948 Proceedings, is a conditional waiver order which appeared in the Federal Register for 17 April 1948. This order cancels, effective on and after 15 July 1948, the waiver order dated 31 July 1947, but changes this latter order only to the extent of reducing the percentage of aliens allowed on subsidized vessels from 25 percent to 15 percent.

(b) This order is a conditional waiver of the statutory citizenship requirements for the unlicensed crews of subsidized U. S. merchant vessels and permits the employment of aliens in the unlicensed crew of such vessels subject to certain restrictions. These restrictions are: (1) Aliens eligible for employment under this waiver are those who served between 7 December 1941 and 2 September 1945 aboard vessels operated by the War Shipping Administration, the United States Maritime Commission, or the Army Transport Service. (This includes foreign flag vessels operated by these agencies.) (2) The number of aliens who may be employed under this general waiver is limited to 15 percent of the total unlicensed crew of the particular vessel. (3) Aliens may be employed only if citizen seamen with appropriate ratings are not available for employment in the unlicensed crew as determined after reasonable efforts made by the master, or owner, or others concerned with supplying crews. (4) Aliens claiming to have the required service between 7 December 1941 and 2 September 1945 must present to the shipping commissioner or master at the time of employment evidence in the form of certificates of discharge or other properly authenticated record of service showing the name of the vessels and the dates served thereon.

(c) This waiver order has general application to all subsidized U. S. merchant vessels and does not require the submission or use of waiver forms or reports on individual aliens employed under its provisions or on vessels on which such aliens are employed. This waiver does not permit aliens to be employed as watch officers or to be substituted for watch officers.

(d) (1) The intent of Public Law 293, under which the waiver order of 12 April 1948 was issued, was to allow the employment of qualified "war service" aliens in skilled ratings in which there was a shortage of available citizen seamen. This waiver of 12 April 1948 is not limited to the employment of aliens in skilled ratings because it is anticipated that cases may arise where citizens are not available to fill unskilled rating vacancies even though current information indicates there are sufficient citizen seamen in the unskilled ratings in all ports. The Congressional hearing prior to enactment of Public Law 293 brought out clearly that its purpose was to provide relief for the merchant marine and not for alien seamen.

(2) An example of misuse of the intent and purpose of the waiver and law under which it was issued is the case where three aliens were signed on a vessel in the unskilled ratings in which there is no shortage of citizen seamen. It then developed that three vacancies in the skilled ratings could not be filled within the alien quota, even though skilled aliens were available and citizens were not. The result was a delay in the vessel's sailing.

(3) While the waiver order of 12 April 1948 does not require the submission of any reports or forms on the aliens employed under its provisions and therefore, no signed statements concerning the nonavailability of citizen seamen, it is expected that Coast Guard District Commanders and personnel under their jurisdiction associated with administering and enforcing the navigation laws will keep fully informed on local conditions and not permit misuse or abuse of the intent and purpose of this waiver. Further, it is expected that these officers will advise the Commandant of any conditions known to them which in their opinion warrant a revision of outstanding waivers in the form of further relaxation or of further restrictions.

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

Public Law 27, as amended by Public Laws 293 and 423—80th Congress, reads as follows:

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That effective April 1, 1947, the Commandant, United States Coast Guard, is authorized to waive compliance with the navigation and vessel inspection laws administered by the Coast Guard to the extent and in such manner and upon such terms as may be deemed necessary by him in the orderly reconversion of the merchant marine from wartime to peacetime operations.

SEC. 2. The authority granted by this resolution shall remain in force only until March 1, 1949: *Provided*, That nothing herein contained shall be construed to authorize the Commandant, United States Coast Guard, to grant waivers for the employment of alien seamen except for those who served between December 7, 1941, and September 2, 1945, aboard vessels operated by the War Shipping Administration, the United States Maritime Commission, or the Army Transport Service. (Pub. Law 27, approved March 31, 1947; Pub. Law 293, approved July 31, 1947; Pub. Law 423, approved Feb. 27, 1948.)

Be careful—The life you save may be *YOUR OWN*

Merchant Marine Personnel Statistics

MERCHANT MARINE LICENSES ISSUED DURING MAY 1948

DECK OFFICERS

REGION	Master										Chief mate										Second mate									
	Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	35	59	1	8	----	----	8	44	3	2	21	12	----	2	----	----	1	5	----	1	34	12	----	----	----	----	----	----	----	----
Gulf coast	13	41	1	----	----	----	8	5	----	2	10	1	----	----	----	----	----	----	1	1	5	2	----	----	----	----	----	----	----	----
Great Lakes and rivers	----	5	----	1	1	2	----	----	6	11	----	1	----	----	----	----	----	----	6	7	----	1	10	7	----	----	----	----	----	----
Pacific coast	17	44	1	5	1	----	3	15	----	----	11	7	----	----	1	----	5	3	1	----	23	3	----	2	----	----	----	----	----	----
Total	65	149	3	14	2	2	19	64	9	15	42	21	----	2	1	----	6	8	8	9	62	18	10	9	----	----	----	----	----	----

REGION	Third mate										Pilots						Master mate				Total		
	Ocean		Coast-wise		Great Lakes		B. S. & L.		Rivers		Great Lakes		B. S. & L.		Rivers		Uninspected vessels, high seas				Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	121	25	----	----	----	----	----	----	----	----	----	1	75	102	3	2	1	----	----	----	303	275	578
Gulf coast	6	----	----	----	----	----	----	----	----	----	----	2	4	15	5	8	----	----	----	----	53	77	130
Great Lakes and rivers	----	4	----	----	----	----	----	----	----	----	3	13	1	1	23	14	----	----	----	----	50	67	117
Pacific coast	10	5	----	----	----	----	----	----	----	----	----	1	11	40	----	----	5	----	3	----	92	125	217
Total	137	34	----	----	----	----	----	----	----	----	3	17	91	158	31	24	6	----	3	----	498	544	1,042

ENGINEER OFFICERS

REGION	Chief engineer, steam				First assistant engineer, steam				Second assistant engineer, steam				Third assistant engineer, steam				Chief engineer, motor			
	Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Unlimited		Limited	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	18	98	9	58	15	31	3	1	27	29	----	1	139	38	----	----	2	23	8	28
Gulf coast	4	25	4	10	11	4	1	1	10	17	----	1	2	5	----	----	2	4	1	8
Great Lakes and rivers	1	9	3	41	1	2	3	10	1	2	----	3	2	6	----	----	1	4	1	9
Pacific coast	8	39	----	5	8	10	----	1	13	5	----	----	5	7	----	----	1	10	1	8
Total	31	171	16	114	35	47	7	13	51	53	----	5	148	56	----	----	6	41	11	53

REGION	First assistant engineer, motor				Second assistant engineer, motor				Third assistant engineer, motor				Uninspected vessels				Totals		
	Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Chief engineer		Assistant engineer		Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	1	2	5	6	3	3	1	----	132	16	----	2	3	----	1	----	367	336	703
Gulf coast	2	----	----	----	1	1	----	----	2	2	----	----	----	----	----	----	40	78	118
Great Lakes and rivers	----	----	----	2	----	1	----	----	1	7	----	----	----	----	----	----	14	96	110
Pacific coast	1	2	----	----	2	1	----	----	2	9	----	----	1	----	----	----	42	97	139
Total	4	4	5	8	6	6	1	----	137	34	----	2	4	----	1	----	463	607	1070

ORIGINAL SEAMEN'S DOCUMENTS, ISSUED MONTH OF MAY 1948

REGION	(1) Staff officer	(2) Continuous discharge books	(3) U. S. merchant mariner's documents	(4) AB any waters unlimited	(5) AB any waters 12 months	(6) AB Great Lakes 18 months	(7) AB tugs and towboats any waters	(8) AB * bays and sounds	(9) AB seagoing barges	(10) Lifeboatman	(11) Q. M. -E. D.	(12) Radio operators	(13) Certificate of service	(14) Tankerman
Atlantic coast	94	210	1,178	93	185	11	2	0	0	706	210	14	1,042	7
Gulf coast	5	13	345	29	53	11	1	0	0	89	117	4	269	19
Pacific coast	25	0	600	45	91	0	0	0	0	268	143	8	446	9
Great Lakes and rivers	6	1	1,255	37	104	52	0	0	0	133	92	2	1,163	14
Total	130	224	3,378	204	433	74	3	0	0	1,096	562	28	2,920	49

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

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

WAIVERS OF MANNING REQUIREMENTS FROM MAY 1 TO MAY 31, 1948

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

REGION	Number of vessels	Deck officers substituted for higher ratings	Engineer officers substituted for higher ratings	Able seamen substituted for deck officers	Ordinary seamen substituted for able seamen	Qualified members of engine department substituted for engineer officers	Wipers or coal passers substituted for qualified members of engine department	Wipers, coal passers, or cadets substituted for engineer officers	Ordinary seamen or cadets substituted for deck officers	Total
Atlantic coast	173	1	13		255		57			326
Gulf coast	59	1	6	1	71		21			100
Pacific coast	37		1		29		19			49
Great Lakes	46		3		36	1	25			65
Total	315	2	23	1	391	1	122			540

CREW SHORTAGE REPORTS FROM MAY 1 TO MAY 31, 1948

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

REGION	Number of vessels	Ratings in which shortages occurred												Total
		Chief mate	Second mate	Third mate	Radio	Able seamen	Ordinary seamen	Chief engineer	First engineer	Second engineer	Third engineer	Qualified member engine department	Wiper or coal passer	
Atlantic coast	2						1				1	1		3
Gulf coast	5			1		1	6			1	3			12
Pacific coast	1										1			1
Great Lakes	66		5	15		13	1		2	5	19	30	5	95
Total	74		5	16		14	8		2	6	24	31	5	111

U. S. GOVERNMENT PRINTING OFFICE: 1948