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PART II
Section 1

Department of the Treasury

•
Coast Guard

•
Shipping



Title 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

[CGFR 65-50]

REPLICATION OF VESSEL INSPECTION REGULATIONS

The Vessel Inspection Regulations in 46 CFR Parts 1 through 145 are republished in their entirety in order to permit an editing of material for the purpose of obtaining uniformity in spelling of words; correction of names, addresses, and cross references; updating of procedures, etc. This republication of the regulations does not alter or change the requirements previously published in the FEDERAL REGISTER. This publication will permit the use of a single source for these regulations rather than numerous sources to show the amendments and changes made since 1938.

The changes in procedures, which are not subject to rulemaking procedures under the Administrative Procedure Act, which have been included in this document are as follows:

a. Penalty processing procedure, 46 CFR 2.50-20 (b) through (f).

b. Mailing of notices or decisions and orders by certified mail in suspension and revocation of proceedings, 46 CFR 137.05-25 (b), 137.15-15 (a), 137.15-20 (b), and 137.20-175 (c).

c. Editorial corrections of text previously published were made in 46 CFR 2.20-5 (c), 10.20-1, 12.02-15, 12.15-9 (c), 25.30-10 (e), 30.10-22, 31.10-5 (a) (1), 31.10-25, 31.30-1 (b), Table 31.10-18 (b), 32.25-1 (b), 35.20-1 (b), 66.01-1, Table 71.25-20 (a) (1), 76.50-5 (e), 78.05-1, Table 91.25-20 (a) (1) and 95.50-5 (e).

It is ordered, That the rules and regulations in 46 CFR Parts 1 through 145, reprinted as set forth below, shall be deemed to be the requirements which have a future force and effect on and after January 1, 1966.

Dated: December 20, 1965.

W. D. SHIELDS,
Vice Admiral, U.S. Coast Guard,
Acting Commandant.

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AUTHORITY: The provisions of this Part 1 issued under sec. 633, 63 Stat. 545, R.S. 4405, as amended, and 4462, as amended, 14 U.S.C. 633, 46 U.S.C. 375, 416. Interpret or apply R.S. 4450, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 1-12, 60 Stat. 237-244, secs. 1, 2, 68 Stat. 484, sec. 3, 68 Stat. 675, sec. 3, 70 Stat. 152; 46 U.S.C. 239, 367, 239a, 239b, 390b, 5 U.S.C. 1001-1011, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-9, August 3, 1954, 19 F.R. 5195; 167-14, November 26, 1954, 19 F.R. 8026; 167-17, June 29, 1955, 20 F.R. 4976; 167-20, June 18, 1956, 21 F.R. 4894.

§ 1.01 Organization.

(a) The Commandant is the head of the agency and exercises overall direction over the policy and administration of the Coast Guard.

(b) To carry out the regulatory and enforcement aspects of marine safety, the staff officers designated in this paragraph are assigned to the Commandant. The chain of military command is from the Commandant directly to the District Commanders. The staff officers at Headquarters act only on the basis of the Commandant's authority and by his direction.

(1) The Chief, Office of Merchant Marine Safety, under the general direction of the Commandant directs, supervises, and coordinates the activities of the Chief, Merchant Marine Technical Division, Chief, Merchant Vessel Inspection Division, and Chief, Merchant Vessel Personnel Division, located at Headquarters; supervises through the District Commanders the administration of the Merchant Marine Safety Divisions of District Offices and Officers in Charge, Marine Inspection; and exercises technical control over the Merchant Marine Details in foreign ports.

(i) The Chief, Merchant Marine Technical Division, at Headquarters, under the direction of the Chief, Office of Merchant Marine Safety, passes on plans and specifications for the construction or alteration of merchant vessels, conducts or reviews stability tests on merchant vessels, examines equipment and devices submitted to Headquarters, supervises the load lines assigned by classification societies, and otherwise provides technical assistance with respect to enforcing and improving merchant marine materiel standards.

(ii) The Chief, Merchant Vessel Inspection Division, at Headquarters, under the direction of the Chief, Office of Merchant Marine Safety, administers

the inspection program for merchant vessels and the program of enforcing and improving merchant marine matériel and operational safety standards, and reviews and maintains records of marine casualties other than recreational boating accidents.

(iii) The Chief, Merchant Vessel Personnel Division, at Headquarters, under the direction of the Chief, Office of Merchant Marine Safety, administers the program for the enforcement and development of prescribed merchant marine personnel standards, including but not limited to the licensing, certificating, shipment and discharge of seamen, and the investigation and institution of proceedings looking to suspension and revocation under Title 46, U.S. Code, sections 239 and 239b, of licenses, certificates, and documents held by persons.

(2) The Chief, Office of Operations, under the general direction of the Commandant, directs, supervises, and coordinates the activities of the Chief, Recreational Boating Safety Division, located at Headquarters; and supervises through the District Commanders the administration of the recreational boating safety program.

(1) The Chief, Recreational Boating Safety Division, at Headquarters, under the direction of the Chief, Office of Operations, administers the enforcement program applicable to uninspected vessels used for recreational purposes and the imposition and collection of penalties in connection therewith; supervises the Federal numbering of undocumented vessels; reviews applications for approval of State numbering systems as required by Title 46, U.S. Code, section 527a; maintains liaison with Federal and State agencies having related interest; develops and coordinates arrangements with State Governments for cooperation in the enforcement of State and Federal laws relating to recreational boating; administers the boating accident report program and compiles, analyzes and publishes the data thus obtained, together with recommendations for the enhancement of boating safety; and reviews and maintains records of recreational boating accidents.

(3) The Chief Counsel of the Coast Guard at Headquarters, under the general direction and supervision of the General Counsel, Department of the Treasury, and the Commandant, considers cases involving alleged violations of navigation and vessel inspection laws or regulations prescribed thereunder and published in this chapter or in 33 CFR Chapter I, and reviews appeals to the Commandant from statutory monetary penalties assessed therefor. Upon completion of such a review, the Chief Counsel prepares a proposed action for the Commandant's consideration or, in appropriate cases, he takes final action on behalf of, and as directed by, the Commandant.

§ 1.05 Organization; districts.

(a) To assist the District Commander in carrying out the regulatory and enforcement aspects of marine safety in the Coast Guard Districts, there is as-

signed to each District Commander a staff officer designated as Chief, Merchant Marine Safety Division. The chain of military command is from the District Commander to each Officer in Charge, Marine Inspection, in his district. The Chief, Merchant Marine Safety Division, is a staff officer assigned to the District Commander and acts only on the basis of the authority of the District Commander and by his direction.

(1) The Chiefs, Merchant Marine Safety Division, in the District Offices, under the supervision of their respective District Commanders, direct the activities in their districts relative to vessel, factory and shipyard inspections; reports and investigations of marine casualties and accidents; processing of violations of navigation and vessel inspection laws; the licensing, certificating, shipment and discharge of seamen; the investigation and institution of proceedings looking to suspension and revocation under Title 46, U.S. Code, sections 239 and 239b, of licenses, certificates, and documents held by persons; and all other marine safety regulatory activities except those functions related to recreational boating when under the supervision of the Chiefs, Operations Division, in the District Offices.

(2) Unless otherwise provided for, the Chiefs, Operations Division, in the District Offices, under the supervision of their respective District Commanders, direct the activities in their districts relative to administration of the law enforcement program applicable to uninspected vessels used for recreational purposes and the imposition and collection of penalties in connection therewith; maintain liaison with Federal and State agencies having related interests; develop and coordinate agreements and arrangements with Federal and State agencies for cooperation in the enforcement of State and Federal laws related to recreational boating; and review investigative reports of recreational boating accidents.

(b) The Officers in Charge, Marine Inspection, in the Coast Guard districts, under the supervision of their respective District Commanders, are in charge of marine inspection offices located in various ports and have command responsibility within assigned marine inspection zones for the performance of duties with respect to the inspection, enforcement, and administration of navigation and vessel inspection laws, rules, and regulations governing marine safety. The Officer in Charge, Marine Inspection, has been designated and delegated to give immediate direction to Coast Guard activities relating to marine safety functions consisting of inspection of vessels in order to determine that they comply with the applicable laws, rules, and regulations relating to construction, equipment, manning, and operation, and to be satisfied that such vessels are in seaworthy condition for the services in which such vessels are to be operated; shipyard inspections; factory inspections of materials and equipment for vessels; the licensing, certificating, shipment and

discharge of seamen; investigations of marine casualties and accidents; investigations of violations of law; negligence, misconduct, unskillfulness, incompetence or misbehavior of persons holding licenses, certificates, or documents issued by the Coast Guard; initiations of actions seeking suspension or revocation under Title 46, U.S. Code, sections 239 and 239b of licenses, certificates and documents held by persons, and presentation of cases at hearings before examiners; and the enforcement of navigation, vessel inspection and seamen laws in general.

(c) For descriptions of Coast Guard districts and marine inspection zones see 33 CFR Part 3.

§ 1.10 Suspension and revocation proceedings.

(a) The Commandant is the final and sole authority for action on appeals or reviews of suspension and revocation proceedings. The Commandant has not delegated the authority to make final decisions on appeals.

(b) To assist the Commandant in the general supervision of the hearing, appeal, and review functions with respect to proceedings looking to suspension and revocation of licenses, certificates, and documents (held by persons) under Title 46, U.S. Code, sections 239 and 239b, there is assigned to the Commandant's Staff a Chief Examiner who is an examiner appointed under the Administrative Procedure Act (5 U.S.C. 1001-1011).

(1) The Chief Examiner at Headquarters, under the general direction and supervision of the Commandant, is assigned the following duties:

(i) Acts as an adviser and as a special assistant to the Commandant in matters concerning hearings conducted pursuant to Title 46, U.S. Code, sections 239 and 239b;

(ii) Trains new examiners and coordinates the activities of all examiners;

(iii) Conducts hearings under Title 46, U.S. Code, sections 239 and 239b; and

(iv) Makes appropriate recommendations to the Chief Counsel for the latter's consideration in the preparation of the final actions by the Commandant with respect to appeals or in cases reviewed on the Commandant's motion under Subpart 137.35 in Part 137 of this chapter.

(c) The Chief Counsel of the Coast Guard at Headquarters, under the general direction and supervision of the General Counsel, Department of the Treasury, and of the Commandant, acts as an adviser and as a special assistant to the Commandant in all matters having legal implications.

(1) The Chief Counsel prepares a proposed decision for the Commandant's consideration in cases of appeal or review in suspension and revocation proceedings.

§ 1.15 Field examiners.

(a) The hearings conducted under Title 46, U.S. Code, sections 239 and 239b, are presided over by examiners. These examiners are located in various ports and are under the exclusive ad-

ministrative control of the Commandant.

(b) The examiners are appointed under the provisions of the Administrative Procedure Act (5 U.S.C. 1001-1011) and are civilian employees of the Coast Guard.

§ 1.20 General flow of functions.

(a) As indicated in 33 CFR 1.01-20, the Officer in Charge, Marine Inspection, is deemed to have final authority subject to the rights of appeal set forth in § 2.01-70 of this subchapter with respect to the functions described in § 1.05(b).

(b) The general course and method by which the functions (other than those dealing with suspension or revocation of licenses, certificates, or documents described in paragraph (c) of this section) concerning marine safety activities are channeled begins with the Officer in Charge, Marine Inspection, at the local Marine Inspection Office. From this officer the course is to the Chief, Merchant Marine Safety Division, on the staff of the District Commander and then to the District Commander. From the District Commander the course is to the Chief of one of the three divisions within the Office of Merchant Marine Safety at Headquarters. In most administrative cases the channel ends at this point. However, on matters of policy or appeals the course is through one of these divisions to the Chief, Office of Merchant Marine Safety, and then to the Commandant, whose decisions are final.

(c) In proceedings involving the suspension or revocation of a Coast Guard license, certificate or document issued to an individual, the course and method by which such proceedings are channeled are as follows:

(1) In the United States, the Commonwealth of Puerto Rico, Territory of Guam, the Virgin Islands, and other possessions, the proceedings are initiated by the preferment of charges and specifications against the holder of the Coast Guard license, certificate or document. A Coast Guard Investigating Officer under the supervision of an Officer in Charge, Marine Inspection, or an Officer in Charge, Marine Inspection, causes the charges and specifications to be served on the person described therein (person charged) who is a holder of a Coast Guard license, certificate or document. At a hearing the Coast Guard submits evidence to support the charges and specifications, while the person charged may submit evidence in rebuttal or mitigation. The examiner renders a decision on the basis of the evidence adduced at the hearing and the law. The examiner's decision is given to the person charged.

(i) In every case the file containing the charges and specifications and examiner's decision is forwarded by the Officer in Charge, Marine Inspection, to the District Commander, and thence to the Commandant.

(ii) In a case where an appeal is made by the person charged, the notice of appeal is filed with the District Commander of the Coast Guard District in which the

hearing was held. The District Commander submits a complete transcript of the record with the notice of appeal to the Commandant.

(2) In the event an examiner is assigned to a foreign port, proceedings are initiated by the preferment of charges and specifications against the holder of a Coast Guard license certificate or document. This is usually initiated by a merchant marine detail officer (investigating officer) who causes the charges and specifications to be served on the person described therein (person charged) who is the holder of a Coast Guard license, certificate or document. At a hearing, the Coast Guard presents evidence to prove the charges and specifications, while the person charged submits evidence of denial or mitigation. The examiner then renders a decision on the basis of the evidence adduced at the hearing and the law. In each case the examiner's decision is given to the person charged. The file containing the charges and specifications and examiner's decision is forwarded by the merchant marine detail officer to the Commandant. An appeal from such an examiner's decision is filed with the District Commander in the District in which such person first arrives in the United States. The District Commander transmits the notice of appeal to the Commandant.

(3) In a foreign port where no examiner has been assigned, no proceedings are initiated by the Coast Guard. In a case originating in a foreign port where a merchant marine detail officer is assigned, such officer investigates the matter to the extent possible and then refers the case to the Officer in Charge, Marine Inspection, having jurisdiction over the vessel's first port of arrival in the United States, or its Territories, or if the person leaves the vessel, then to the Officer in Charge, Marine Inspection, having jurisdiction at such person's first port of arrival in the United States, or its Territories or to the Commandant. The Officer in Charge, Marine Inspection, investigates the case and determines whether or not proceedings are to be initiated against the holder of a Coast Guard license, certificate, or document.

(d) In the performance of their duties, all Coast Guard examiners are bound by law and the regulations in this chapter or in 33 CFR Chapter I. For publicizing statements of policy, clarification of points or procedure, and general administrative instructions, the Commandant may, from time to time, issue instructions via a series designated as "Hearing Examiners' Circulars." A complete file of these instructions is available for reading purposes during normal working hours at Headquarters, each district office, and each Marine Inspection Office.

§ 1.25 Judicial review.

(a) Nothing in this chapter shall be construed to prohibit any party from seeking judicial review of any Commandant's decision or action taken pursuant to the regulations in this part or Part 137 of this chapter with respect to

suspension and revocation proceedings arising under Title 46, U.S. Code, sections 239 and 239b.

(b) In the absence of an appeal to, or review by, the Commandant from the decision of the examiner in a suspension and revocation proceeding, such decision of the examiner shall be final and binding on the person charged for all purposes as of the effective date of the decision.

PART 2—VESSEL INSPECTIONS

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- 2.95-1 Certificates or documents issued by Coast Guard.
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- 2.95-10 Equipment or material required to be approved.

AUTHORITY: The provisions of this Part 2 issued under R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret sec. 3, 60 Stat. 238, 5 U.S.C. 1002. Treasury Department Order 120, July 31, 1950, 15 F.R. 6521, unless otherwise noted.

Subpart 2.01—Inspecting and Certifying of Vessels

AUTHORITY: The provisions of this Subpart 2.01 interpret or apply under R.S. 4421, as amended, 4453, as amended; 46 U.S.C. 399, 435; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 167-14, November 26, 1954, 19 F.R. 8026; 167-20, June 18, 1956, 21 F.R. 4894; CGFR 56-28, July 24, 1956, 21 F.R. 5659; 167-38, October 26, 1959, 24 F.R. 8857, unless otherwise noted.

§ 2.01-1 Applications for inspections.

(a) *Application forms.* (1) Applications for the inspections of vessels required to be inspected by the Coast Guard by 46 U.S.C. 362, 363, 367, 390a, 391, 391a, 392, 395, 404, 405, 526, 1333, or 50 U.S.C. 198, shall be made by the master, owner or agent on the following Coast Guard forms which are obtainable from the Officer in Charge, Marine Inspection, at any local Marine Inspection Office, U.S. Coast Guard.

(i) CG-3752—Application for Inspection of U.S. Vessel.

(ii) CG-986—Application for Inspection of Foreign Vessel.

(2) These applications require information on name and type of vessel, nature of employment and route in which to be operated, and place where and date when the vessel may be inspected.

(b) *To whom submitted.* The completed form shall be submitted to the Officer in Charge, Marine Inspection, in the Marine Inspection Office located in, or nearest, the port at which the inspection is to be made. The applicant will be advised in writing of the time when the inspection will be made.

(c) *New vessels.* Applications for inspection of new vessels shall be preceded by the submission of applicable drawings or prints in accordance with the specific requirements in Subchapters D (Tank Vessels), E (Load Lines), F (Marine Engineering), H (Passenger Vessels), I (Cargo and Miscellaneous Vessels), J (Electrical Engineering), and/or T (Small Passenger Vessels) of this chapter applicable to that particular type of vessel and/or type of service in which the vessel is proposed to be operated.

(d) *Foreign-built vessels.* (1) Those foreign-built vessels which are specifically authorized by public or private laws to engage in the coastwise trade, and those foreign-built vessels which are documented to engage in the foreign trade shall be inspected and certificated as required by law and/or the regulations in this chapter which are applicable to their class and employment.

(2) Under certain circumstances as described in law (see 46 U.S.C. 11, 13, 289, 292, 316, 808, 883, or other laws), certain foreign-built vessels are not permitted to engage in the United States coastwise trade (domestic trade) unless specifically authorized by law. Therefore, when foreign-built vessels are intended for use in the coastwise trade as defined by the Bureau of Customs, such vessels will not be inspected and certificated unless specifically authorized by law to engage in the coastwise trade.

§ 2.01-5 Certificate of inspection.

(a) *Issuance of certificates.* Upon completion of the inspection of a vessel and on condition that the vessel and her equipment are approved by the inspectors, a certificate on one or more of the following Coast Guard forms will be issued by the Officer in Charge, Marine Inspection:

(1) CG-841—Certificate of Inspection.

(2) CG-854—Temporary Certificate of Inspection.

(3) CG-989—Certificate of Examination for Foreign Passenger Vessel.

(4) CG-3463—Certificate for Foreign Vessel to Carry Persons in Addition to Crew.

(5) CG-3753—Certificate of Inspection (for small passenger vessel).

(b) *Vessels issued certificates.* (1) All domestic vessels shall be issued a Temporary Certificate of Inspection (CG-854) and a Certificate of Inspection (CG-841) or Certificate of Inspection (for small passenger vessel) (CG-3753).

(2) Foreign passenger vessels of countries signatory to the International Convention for the Safety of Life at Sea, 1948, shall be issued a Certificate of Examination for Foreign Passenger Vessel (CG-989).

(3) Foreign passenger vessels of countries which are nonsignatory to the International Convention for the Safety of Life at Sea, 1960, shall be issued a Temporary Certificate of Inspection (CG-854) and a Certificate of Inspection (CG-841).

(4) All foreign freight vessels carrying 12 or less passengers shall be issued a Certificate for Foreign Vessels to Carry Persons in Addition to Crew (CG-3463).

(c) *Description of certificates.* The certificate of inspection issued to a vessel will describe the vessel, the route which she may travel, the minimum manning requirements, the safety equipment and appliances required to be carried on board, the total number of persons which may be carried, and the names of the operators and the owners. The period for which a certificate of inspection is valid is stated on the certificate. The certificate may be renewed by making application for inspection as provided for in § 2.01-1.

(d) *Amending certificates.* Where by reason of a change in the character of a vessel or in her route, equipment, etc., the vessel will not comply with the requirements of the certificate of inspection previously issued, a certificate amending such certificate may be issued at the discretion of the Officer in Charge, Marine Inspection, to whom request is made, on Coast Guard Form CG-858—Certificate of Inspection Amendment.

§ 2.01-7 Classes of vessels (including motorboats) examined or inspected and certificated.

(a) The regulations in this chapter concerning inspecting and certificating vessels are applicable to vessels (including motorboats) as indicated in the following table 2.01-7(a):

RULES AND REGULATIONS

TABLE 2.01-7(a)

Method of propulsion	Size or other limitations ¹	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations ¹			
		Vessels inspected and certified under Subchapter D—Tank Vessels ²	Vessels inspected and certified under either Subchapter H—Passenger Vessels ^{3,4,5} or Subchapter T—Small Passenger Vessels ^{3,4}	Vessels inspected and certified under Subchapter L—Cargo and Miscellaneous Vessels ^{3,5}	Vessels subject to provisions of Subchapter C—Uninspected Vessels ^{3,5}
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam.....	Vessels not over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	All tugboats and towboats.	All vessels except those covered by columns 3, 4, and 5. ⁸
	Vessels over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk. ²	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers. ⁷ 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, may carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.
Motor.....	Vessels of not over 15 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. ²	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers. ⁷ 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. ²	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail.....	Vessels not over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire..	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	None.
Nonself-propelled....	Vessels not over 100 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire..	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All barges carrying passengers except those covered by column 4.

¹ Where length is used in this table it means the length measured from end to end over the deck, excluding sheer. This expression "means a straight line measurement of the overall length from the foremost part of the vessel to the aftmost part of the vessel, measured parallel to the centerline."

² Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Dangerous Cargoes) of this chapter may also be applicable under certain conditions.

³ Public nautical schoolships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical schoolships, as defined by 46 U.S.C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

⁴ Subchapter H (Passenger Vessels) of this chapter covers only those vessels of 100 gross tons or more. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of less than 100 gross tons.

⁵ Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of flammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the flammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

⁶ Any vessel on an international voyage is subject to the requirements of the International Convention for Safety of Life at Sea, 1960.

⁷ The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U.S.C. 390).

⁸ Bollers and machinery are subject to examination on vessels over 40 feet in length.

(b) The specific application of regulations concerning inspecting and certifying vessels is set forth in the specific subchapter governing a particular class of vessels.

(1) For passenger vessels see Part 70 of Subchapter H (Passenger Vessels) of this chapter.

(2) For cargo and miscellaneous vessels see Part 90 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

(3) For tank vessels see Part 30 of Subchapter D (Tank Vessels) of this chapter.

(4) For small passenger vessels see Part 175 of Subchapter T (Small Passenger Vessels) of this chapter.

(5) For uninspected vessels see Part 24 of Subchapter C (Uninspected Vessels) of this chapter.

§ 2.01-8 Application of regulations to vessels or tankships on an international voyage.

(a) Where, in various places or portions of this chapter, requirements are stipulated specifically for "vessels on an international voyage" or "tankships on an international voyage," it is intended that these requirements apply only to vessels or tankships, as applicable, which are subject to the International Convention for Safety of Life at Sea, 1960.

(b) For details regarding application of Convention requirements to tankships, see § 30.01-6 of this chapter; to passenger vessels, see § 70.05-10 of this chapter; to cargo ships other than tankships, see § 90.05-10 of this chapter; and to small passenger vessels, see § 176.35-1 of this chapter. (E.O. 11239, 30 F.R. 9671, 3 CFR, 1965 Supp.).

§ 2.01-10 Inspection requirements—domestic vessels.

(a) If during the inspection of a vessel made at the request of the master, owner, or agent, the vessel or her equipment is found not to conform to the requirements of law or regulations in this chapter, the requirements which must be met will be listed on Form CG-835, Notice of Merchant Marine Inspection Requirements, and given to the master of the vessel.

(b) The Coast Guard on its own initiative may examine or inspect or reinspect at anytime any vessel subject to Title 52 of the Revised Statutes (R.S. 4399-4500; 46 U.S.C. 170, 214-240, 361-498), and acts amendatory thereof or supplemental thereto. If during such examination, inspection, or reinspection, any failure to comply with any applicable requirement of law and/or applicable regulations in this chapter, or any defects or imperfections become apparent tending to render the navigation of the vessel unsafe, or that repairs have become necessary, the Coast Guard will so notify the master and state what is required.

§ 2.01-13 Inspection requirements—foreign vessels.

(a) Foreign vessels registered in countries which are parties to the effective International Convention for Safety of Life at Sea are normally subject to the

examination provided for in Chapter I of that Convention. However, in the case of any vessel involving novel features of design or construction, upon which that Convention is silent or which involve potential unusual operating risks, a more extensive inspection may be required when considered necessary to safeguard the life or property in United States' ports where such vessel may enter. In such a case, pertinent plans and/or calculations may be required to be submitted sufficiently in advance to permit evaluation before inspection.

(b) Foreign vessels registered in countries which are not parties to the effective International Convention for Safety of Life at Sea, or foreign vessels registered in countries which are parties to the effective Convention but which vessels are exempted from part or all of the Convention, may under conditions specified in applicable inspection laws be subject to inspection and certification as specified in regulations governing specific categories of vessels.

(c) For details concerning application of regulations to foreign vessels, see Part 30 in Subchapter D (Tank Vessels), Part 70 in Subchapter H (Passenger Vessels), Part 90 in Subchapter I (Cargo and Miscellaneous Vessels), § 146.02-2 in Subchapter N (Dangerous Cargoes), and Part 175 in Subchapter T (Small Passenger Vessels) of this chapter.

(R.S. 4400, as amended, 4417a, as amended, 4472, as amended, sec. 26, 41 Stat. 998, as amended, sec. 3, 70 Stat. 152; 46 U.S.C. 362, 391a, 170, 882, 390b)

§ 2.01-15 Vessel repairs.

(a) The procedures to be followed in notifying the Coast Guard about vessel repairs varies according to the type of vessel and service in which engaged. Additional requirements for repairs of certain equipment and installations are in Subchapters E (Load Lines), F (Marine Engineering), and/or J (Electrical Engineering) of this chapter. The requirements by types of vessels are as follows:

(1) Tank vessels—Parts 31 and 35 of Subchapter D (Tank Vessels) of this chapter.

(2) Passenger vessels—Part 71 of Subchapter H (Passenger Vessels) of this chapter.

(3) Cargo and miscellaneous vessels—Part 91 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

(4) Small passenger vessels—Part 176 of Subchapter T (Small Passenger Vessels) of this chapter.

(5) Public nautical schoolships—Subpart 167.30 of Subchapter R (Nautical Schools) of this chapter.

(b) If repairs to a vessel are necessary, such vessel may be permitted to proceed to another port for repairs, if in the opinion of the inspector it can be done with safety. The permit is granted by the Officer in Charge, Marine Inspection, upon request in writing by the master or owner of the vessel and is issued on Coast Guard Form 948, Permit To Proceed to Another Port for Repairs. No repairs or alterations affecting safety of a vessel or her machinery shall be made unless applicable requirements in Sub-

chapters D (Tank Vessels), E (Load Lines), F (Marine Engineering), H (Passenger Vessels), I (Cargo and Miscellaneous Vessels) and/or J (Electrical Engineering) of this chapter are met.

§ 2.01-20 Revocation of certificates of inspection.

(a) Under the authority of 46 U.S.C. 391, 391a, or 435 the certificates of inspection referred to in § 2.01-5 may be revoked if the vessel is found at a reinspection not to comply with the terms of the vessel's certificate of inspection.

(b) Under the authority of 46 U.S.C. 390c(c) the certificates of inspection referred to in § 2.01-5 for a small passenger vessel may be revoked or suspended if such a vessel is found not to comply with the terms of the vessel's certificate of inspection when carrying more than 6 passengers.

§ 2.01-25 International Convention for Safety of Life at Sea, 1960.

(a) *Certificates required.* (1) The International Convention for Safety of Life at Sea, 1960, requires one or more of the following certificates to be carried on board certain passenger, cargo or tankships engaged in international voyages:

(i) Passenger Ship Safety Certificate.

(ii) Cargo Ship Safety Construction Certificate.

(iii) Cargo Ship Safety Equipment Certificate.

(iv) Cargo Ship Safety Radiotelephony Certificate.

(v) Cargo Ship Radiotelegraphy Certificate.

(vi) Exemption Certificate.

(vii) Nuclear Passenger Ship Safety Certificate.

(viii) Nuclear Cargo Ship Safety Certificate.

(2) The U.S. Coast Guard will issue through the Officer in Charge, Marine Inspection, the following certificates after performing an inspection of the vessel and determining the vessel meets applicable requirements:

(i) Passenger Ship Safety Certificate.

(ii) Cargo Ship Safety Construction Certificate except when issued to cargo ships by American Bureau of Shipping at the option of the owner or agent.

(iii) Cargo Ship Safety Equipment Certificate.

(iv) Exemption Certificate.

(v) Nuclear Passenger Ship Safety Certificate.

(vi) Nuclear Cargo Ship Safety Certificate.

(3) When authorized by the Commandant, U.S. Coast Guard, the American Bureau of Shipping may issue to cargo and tankships which it classes the Cargo Ship Safety Construction Certificate.

(4) The Federal Communications Commission will issue the following certificates:

(i) Cargo Ship Safety Radiotelephony Certificate.

(ii) Cargo Ship Radiotelegraphy Certificate.

(iii) Exemption Certificate.

(b) *Applications.* (1) The application for inspection and issuance of a cer-

tificate or certificates is made on the appropriate form listed in § 2.01-1, or by letter, to the Officer in Charge, Marine Inspection, in or nearest the port at which the inspection is to be made and shall be signed by the master or agent of the vessel. The certificates previously issued are surrendered at the time the inspection is performed. Further details are set forth in Subchapter H (Passenger Vessels), Subchapter T (Small Passenger Vessels), Subchapter D (Tank Vessels) and Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

(2) The application for the inspection of a vessel other than a passenger vessel concerning the issuance of a Cargo Ship Safety Radiotelephony Certificate or a Cargo Ship Safety Radiotelegraphy Certificate is made by formal application on FCC Form 801 to the local office of the Federal Communications Commission.

(c) *Certificates issued.* (1) If a vessel meets the applicable requirements of the Convention, it shall be issued appropriate certificates listed in paragraph (a) of this section. These certificates describe the vessel and state the vessel is in compliance with the applicable requirements of the Convention.

(2) A Convention certificate may be withdrawn, revoked or suspended at any time when it is determined the vessel is no longer in compliance with applicable requirements. (See § 2.01-70 for appeal procedures.)

(d) *CG-969—Notice of Receipt of Application for Passenger Ship Safety Certificate.* (1) The Passenger Ship Safety Certificate is issued by the Commandant after determining all applicable requirements of the Convention have been met. In the event the completion of the certification of any passenger vessel cannot be effected prior to the sailing of the passenger ship on a foreign voyage, or in any case where the Passenger Ship Safety Certificate is not received from the Commandant before the ship sails on a foreign voyage, the Officer in Charge, Marine Inspection, will issue a completed Form CG-969, describing the passenger ship and certifying that an application for a Passenger Ship Safety Certificate is being processed, and that in his opinion the vessel meets applicable requirements of the Convention administered by the Coast Guard.

(2) The completed Form CG-969 may be exhibited in explanation of the failure of the passenger ship to have on board a current Passenger Ship Safety Certificate. This completed Form CG-969 may be accepted as prima facie evidence that the passenger ship described therein is in compliance with the applicable requirements of the Convention.

(e) *Exempted vessel.* (1) A vessel may be exempted by the Commandant from complying with certain requirements of the Convention under his administration upon request made in writing to him and transmitted via the Officer in Charge, Marine Inspection. In such case the exemptions are stated in the Exemption Certificate, which is issued by the Commandant through the appropriate Officer in Charge, Marine Inspection.

(2) The Exemption Certificate which modifies the Cargo Ship Safety Radiotelephony Certificate or the Cargo Ship Safety Radiotelegraphy Certificate is issued by the Federal Communications Commission.

(f) *Posting certificates.* The Convention certificates issued to a vessel shall be posted in a prominent and accessible place on the vessel in a manner similar to that for certificates of inspection.

(g) *Foreign flag vessels.* At the request of the government of a country in which is registered a vessel engaged in an international voyage, such a vessel may be issued the applicable certificate or certificates listed in paragraph (a) of this section. The certificate will be issued only after inspection has been made by the issuing agency, providing the vessel is found to comply with the requirements of the Convention.

§ 2.01-40 *Passengers or persons in addition to crew on cargo or tank vessels.*

(a) Under authority of 46 U.S.C. 882 a cargo vessel or a tank vessel documented under the laws of the United States and subject to inspection under applicable regulations in Subchapter D (Tank Vessels) or Subchapter I (Cargo and Miscellaneous Vessels) of this chapter may be allowed by its certificate of inspection to carry not to exceed 16 persons in addition to the crew: *Provided*, That such vessel subject to the applicable provisions of the effective International Convention for Safety of Life at Sea may carry not to exceed 12 persons in addition to the crew.

(b) The application for permission to carry persons in addition to the crew may be included in the application described in § 2.01-1. If granted it is endorsed on the certificate of inspection.

§ 2.01-45 *Excursion permit.*

(a) Under authority of 46 U.S.C. 453 a passenger vessel may be permitted to engage in excursions and carry additional numbers of passengers. For details see Part 71 of Subchapter H (Passenger Vessels) of this chapter.

(b) The application for an excursion permit is made by the master, owner, or agent of the vessel to the Officer in Charge, Marine Inspection, on Coast Guard Form CG-950, Application for Excursion Permit. If, after inspection, permission is granted, it is given on Coast Guard Form CG-949, Permission to Carry Excursion Party. The permit describes the vessel, the route over which and the period during which the excursions may be made, and the safety equipment required for the additional persons indicated.

§ 2.01-50 *Persons other than crew on towing, oyster, or fishing steam vessels.*

(a) Under authority of 46 U.S.C. 458 a steam vessel engaged in towing, oyster dredging and planting, and fishing may be permitted to carry persons in addition to its crew.

(b) The application for a permit to carry such persons may be included in the application described in § 2.01-1. If

granted it is endorsed on the certificate of inspection.

§ 2.01-60 *Overtime compensation.*

(a) *General.* Extra compensation for overtime services performed by inspectors of vessels and their assistants, shipping commissioners and their deputies and assistants who may be required to remain on duty between the hours of 5:00 p. m. and 8:00 a. m. or on Sundays or holidays to perform services in connection with the inspection of vessels or their equipment, supplying or signing on or discharging crews of vessels is authorized by 46 U. S. C. 382b and regulations in Part 143 of this chapter, together with the method of computing such extra compensation.

(b) *Application and certification of time.* Application for the performance of such overtime services and certification of services performed is made by the master, owner, or agent of a vessel to the Officer in Charge, Marine Inspection, on Form CG-830, Application for and Certificate of Overtime Service.

(c) *Collection.* The bill for the collection of the overtime compensation is submitted by the Officer in Charge, Marine Inspection to the master, owner, or agent on whose vessel overtime services are performed on Form CG-832, Bill for Collection Overtime Services. Payment is made to the Collector of Customs of the port designated.

§ 2.01-70 *Appeals.*

(a) *General.* Any person aggrieved by any decision or action of the Officer in Charge, Marine Inspection, may appeal therefrom to the Coast Guard District Commander of the district in which the action or decision was made. A further appeal may be made to the Commandant, U.S. Coast Guard, from the decision of the District Commander.

(b) *Time limits.* (1) Appeals from decisions of the inspectors or the Officer in Charge, Marine Inspection, to the Coast Guard District Commander, shall be made in writing within 30 days after the decisions or actions appealed from shall have been rendered or taken. Such appeals shall set forth the requirements appealed from and the reasons why the decision or action should be set aside or revised.

(2) Appeals from the decisions of the Coast Guard District Commander to the Commandant shall be made in writing within 30 days after the decisions appealed from shall have been rendered.

(c) *Decision on appeals.* Pending the determination of the appeal, the decision of the Officer in Charge, Marine Inspection, shall remain in effect. The decision of the Commandant is final.

(R.S. 4417, as amended, 4463, as amended, secs. 1, 2, 49 Stat. 1544, as amended, sec. 3, 70 Stat. 152, sec. 3, 68 Stat. 675, sec. 8, 75 Stat. 403; 46 U.S.C. 391, 435, 222, 367, 390b, 50 U.S.C. 198, 33 U.S.C. 1007)

§ 2.01-80 *Vessel inspections in Alaska.*

(a) The waters of southeastern Alaska inside of the general trend of the shore from Cape Spencer, southeasterly to Cape Muzon, and thence easterly to Sitkian Island, shall be considered as

bays, sounds, and lakes other than the Great Lakes, for the purpose of administering the vessel inspection laws and applicable regulations in this chapter.

Subpart 2.20—Reports and Forms

AUTHORITY: The provisions of this Subpart 2.20 interpret or apply sec. 3, 68 Stat. 675; 50 U.S.C. 198; E.O. 11259, 30 FR. 9671; 3 CFR 1965 Supp., unless otherwise noted.

§ 2.20-1 Forms.

(a) *Posting.* Statutes and regulations require that certain forms be posted on vessels referred to in the statutes and regulations. The titles of the forms indicate the contents of the forms. They may be obtained from any Officer in Charge, Marine Inspection. The Coast Guard forms and the statutes or regulations which require that they be posted are listed in this section.

(b) *CG-809.* This form "Station Bills, Drills, and Reports of Masters" is required by §§ 35.10-5, 78.17-50(f), and 97.15-35(d) of this chapter.

(c) *CG-811.* This placard "Lifesaving Signals and Breeches Buoy Instructions" is required by §§ 35.12-5, 78.53-5, 97.43-5, and 167.65-50 of this chapter.

(d) *CG-3256.* This form "Atomic Attack Instructions for Merchant Vessels in Port" is required by 33 CFR 122.10.

(e) *CG-807.* This form "Pilot Rules for the Great Lakes and Their Connecting and Tributary Waters" is required by 33 U.S.C. 243 and 33 CFR 90.15.

§ 2.20-5 Rules of the Road pamphlets.

(a) *Required to be carried aboard.* Statutes and regulations require that current editions of, applicable Coast Guard pamphlets containing Rules of the Road shall, where practicable, be carried on board and maintained for ready reference on all vessels and craft over 65 feet in length while navigating within the certain waters as described in law or regulation. The titles indicate the waters on which generally applicable. These pamphlets may be obtained from any Marine Inspection Office. The Coast Guard pamphlet identification numbers and the statutes or regulations which require that they be carried on board certain vessels or craft over 65 feet in length are described in succeeding paragraphs in this section.

(b) *CG-169.* This pamphlet "Rules of the Road—International—Inland" is required by 33 U.S.C. 157 and 33 CFR 80.13(b) to be carried and available for ready reference, where practicable, on vessels navigating the harbors, rivers, and inland waters of the United States except the Great Lakes and their connecting and tributary waters as far east as Montreal, the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway.

(c) *CG-172.* Two copies of this pamphlet "Rules of the Road—Great Lakes" are required by 33 CFR 90.15(b) to be kept on board vessels navigating the

Great Lakes and their connecting and tributary waters.

(d) *CG-184.* This pamphlet "Rules of the Road—Western Rivers" is required by 33 U.S.C. 353 and 33 CFR 95.23 to be carried and available for ready reference, where practicable, on vessels navigating the Red River of the North, the Mississippi River and its tributaries above Huey P. Long Bridge, and that part of the Atchafalaya River above its junction with the Plaquemine-Morgan City alternate waterway.

§ 2.20-40 Chief engineer's reports.

(a) Repairs to boilers and pressure vessels. The chief engineer is required to report any repairs to boilers or unfired pressure vessels in accordance with §§ 33.25-5, 78.33-1, and 97.30-1 of this chapter.

(b) The chief engineer of any vessel is required to report any accident to a boiler, unfired pressure vessel, or machinery tending to render the further use of the item unsafe until repairs are made by §§ 35.25-5, 78.33-5, and 97.30-5 of this chapter.

(c) The Chief Engineer shall report the renewal of fusible plugs in boilers by letter to the Officer in Charge, Marine Inspection, who issued the certificate of inspection when such fusible plugs are renewed at other than the inspection for certification and there is no marine inspector in attendance at the renewal. See §§ 52.70-40(j) (2) and 67.50-20(c) (2) of this chapter for the content of the letter.

§ 2.20-50 Repairs or alterations in lifesaving or fire prevention equipment.

No repairs or alterations shall be made to any lifesaving or fire-detecting or fire-extinguishing equipment except in an emergency without advance notice to the Officer in Charge, Marine Inspection. See §§ 33.01-20, 34.01-5, 78.33-10, and 97.30-10 of this chapter.

§ 2.20-60 Reports of casualties and accidents.

(a) *General.* Reports of casualties or accidents occurring on or to vessels are required by Title 33, U.S. Code, section 361, or Title 46, U.S. Code, subsection 5261(c), and the regulations supplementary thereto in Subparts 35.15, 78.07, 97.07, and 136.05, and § 167.65-65 of this chapter, precedent to an investigation under Title 46, U.S. Code, section 239. A written notice is required from the master, owner, agent, or operator of a vessel to the Officer in Charge, Marine Inspection, at or nearest the port where the casualty or accident occurred as soon as possible after the casualty or accident. A report is required whenever any vessel is involved in a casualty or accident involving loss of life, material loss of property, serious injury to any person, damage affecting the seaworthiness or efficiency of a vessel, stranding or grounding. Whenever a vessel collides with an aid to navigation the officer in charge shall report such collision to the

nearest Officer in Charge, Marine Inspection; however, no report on Form CG-2692 is required unless it is a reportable marine casualty for other reasons.

(b) *Personal accidents.* The officer in charge of a vessel reports personal accidents on Form CG-924E (Report of Personal Injury or Loss of Life) whenever there is a loss of life on board a vessel or an accident occurs to passengers, members of the crew, and other persons who may be injured on board a vessel and incapacitated for a period in excess of 72 hours. This Form CG-924E should not be submitted if the accident involves a vessel numbered under the Federal Boating Act of 1958 when the Form CG-3865 (Boating Accident Report) should be submitted. If filed without delay, the Form CG-924E may also provide the notice required by other regulations in this chapter.

(c) *Vessel casualties.* The officer in charge of a vessel reports on Form CG-2692 (Report of Vessel Casualty or Accident) when accidents or casualties involve damage affecting seaworthiness of a vessel, stranding or grounding, or material property damage in excess of \$1,500. This Form CG-2692 should not be submitted if the accident involves a vessel numbered under the Federal Boating Act of 1958 when the Form CG-3865 (Boating Accident Report) should be submitted. If filed without delay, the Form CG-2692 may also provide the notice required by other regulations in this chapter. If a vessel casualty occurs which involves loss of life, the officer in charge of a vessel shall submit with complete Form CG-2692 a separate completed Form CG-924E for each person killed or injured.

(d) *Information required.* The written notice, as well as the reports, require a description of the vessel or vessels involved, names of owner and master, location, nature and probable cause of casualty or accident, the nature and extent of injury to persons, and the damage to property. The Forms CG-924E and CG-2692 may be obtained from any local marine inspection office.

(e) *Casualty involving aids to navigation.* The officer in charge of a vessel which collides with a lightship, buoy, or other aid to navigation under the jurisdiction of the Coast Guard, or is connected with any such collision is required to report the casualty or accident to the nearest Officer in Charge, Marine Inspection. See §§ 35.15-1, 78.07-20, 97.07-20, and 136.05-20 of this chapter.

(R.S. 4450, as amended, secs. 13, 17, 54 Stat. 166, as amended, sec. 10, 18 Stat. 128, as amended; 46 U.S.C. 239, 5261(c), 526p, 33 U.S.C. 361)

CROSS REFERENCE: For investigations or hearings on marine casualties see Parts 4, 136, and 137 of this chapter.

Subpart 2.45—Waivers of Navigation and Vessel Inspection Laws

AUTHORITY: The provisions of this Subpart 2.45 issued under secs. 1, 2, 64 Stat. 1120; 46 U.S.C., note preceding section 1. Treasury Department Order CGFR 51-1, Jan. 23, 1951, 16 F.R. 731.

§ 2.45-1 Authority for and limitations on issuance.

Compliance with certain of the navigation and vessel inspection laws may be waived by the Commandant under authority of the act of December 27, 1950 (Public Law 50-891, secs. 1, 2, 64 Stat. 1120; 46 U.S.C., note preceding section 1), and the delegation of waiver authority contained in Department of the Treasury Order CGFR 51-1, dated January 23, 1951 (16 F.R. 731), in any case where such waiver is deemed necessary in the interest of national defense.

§ 2.45-5 Policy.

(a) 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 interests of national defense 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 the national defense. While it is not the policy of the Coast Guard to countenance willful 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.

§ 2.45-10 Waivers issued.

(a) The waivers having general applicability are published in Part 154 of this chapter, as well as in 33 CFR Part 19.

§ 2.45-15 Specific individual waivers.

(a) Applications for waivers affecting only one vessel in any one order under the provisions of § 154.01 of this chapter are made on Form CG-2633, Application for Waiver Order. The application shall state the name of the vessel, her employment, the requirements of law or regulations, waiver of which is requested, the reasons why waiver is necessary, and shall be signed by the master, owner, or agent of the vessel, or by the representative of any interested Government agency. The application shall be made to the Coast Guard District Commander or to his designated representative at the port or place where the vessel is located. In any port or place of the Canal Zone or in any foreign port or place the application shall be made to the designated representative of the Commandant at such port or place or if the Coast Guard has not established facilities in such port or place to the nearest designated representative of the Commandant at a port or place where such facilities have been established.

(b) If the request is granted, the waiver order will describe the vessel, the requirements of law or regulations waived, the conditions to which the waiver is subject, and the period of time for which the waiver is effective.

§ 2.45-20 General waivers.

(a) Applications for waivers having general applicability should be addressed

to the Commandant (M), U.S. Coast Guard, Washington, D.C., 20226.

(b) Only the Commandant is authorized to issue general waivers which affect more than one vessel in one order.

Subpart 2.50—Assessment, Mitigation or Remission of Penalties

AUTHORITY: The provisions of this Subpart 2.50 interpret or apply R.S. 5294, as amended, sec. 26, 23 Stat. 59, as amended; 46 U.S.C. 7, 8.

§ 2.50-1 Delegation of authority.

(a) By virtue of the authority vested in the Secretary of the Treasury by Reorganization Plan No. 26 of 1950 (15 F.R. 4935), and by 14 U.S.C. 631, the Secretary transferred to the Commandant, U.S. Coast Guard, the functions vested in him under the navigation and vessel inspection statutes and amendments thereto (see § 2.50-40), by Treasury Department Order 120, dated July 31, 1950 (15 F.R. 6521), and subsequent Orders 167-14, dated November 26, 1954 (19 F.R. 8026), 167-20, dated June 18, 1956 (21 F.R. 4894), CGFR 56-28, dated July 24, 1956 (21 F.R. 5659), 167-32, dated September 23, 1958 (23 F.R. 7605), 167-33, dated September 23, 1958 (23 F.R. 7592), 167-38, dated October 26, 1959 (24 F.R. 8857), 167-44, dated October 18, 1960 (25 F.R. 10106), 167-45, dated June 16, 1961 (26 F.R. 5585), 167-46, dated November 6, 1961 (26 F.R. 10609), 167-48, dated October 19, 1962 (27 F.R. 10504), 167-58, dated January 29, 1964 (29 F.R. 2314), 167-64, dated December 7, 1964 (29 F.R. 17123), and 167-66, dated September 8, 1965 (30 F.R. 11735).

(b) Pursuant to granted authority from the Secretary, the Commandant may make provision for the performance of assigned functions by subordinates in the Coast Guard. Accordingly, the Commandant hereby authorizes each District Commander in his assigned district to administer certain statutes in accordance with procedures set forth in this subpart. The District Commander may further delegate such authority as he deems proper, not inconsistent with the provisions of this subpart, to his Chief of Staff, Chief, Merchant Marine Safety Division, or Chief, Operations Division, or any or all of them.

§ 2.50-5 Statutes providing for assessment, mitigation or remission of civil penalties.

(a) The general statutes authorizing the Coast Guard to assess, mitigate or remit civil penalties are sections 7 and 8 of Title 46, U.S. Code.

(b) Certain other specific statutes contain authority to assess, mitigate or remit civil penalties. (For examples, see sections 85g, 88g, 369, 457, 526p, and 527e of Title 46, U.S. Code.)

§ 2.50-10 Reports of violations of laws or regulations and instituting civil penalty proceedings generally.

(a) (1) Violations of the navigation and vessel inspection laws and regulations applicable thereto, more fully described in § 2.50-40, administered and enforced by the Coast Guard, are reported by Coast Guard personnel detecting them to the District Commander

of the district in which the violations occurred. When practicable, the alleged offender shall be informed of the nature of the apparent violation at the time it is detected by any Coast Guard officer. In all other instances, he shall be so informed upon the completion of any proceeding or investigation which indicates that a violation has occurred. An appropriate form prescribed by the Commandant or a letter will be used to notify the alleged offender of the nature of the violation and to advise him relative to the administrative procedure employed in conducting civil penalty cases. The notification shall advise the alleged offender to reply within 15 days or such longer period as the District Commander may in his discretion allow in order that his statement may be considered by the District Commander. The District Commander is hereby authorized to determine whether there has been a violation of any of the pertinent laws or regulations. In the event of a violation for which a criminal sanction is not deemed to be appropriate, the District Commander shall determine whether to invoke the statutory civil penalty. He may thereafter mitigate or remit an assessed civil penalty upon receipt from the offender of a petition for relief therefrom. If after consideration of the petition for relief, the District Commander decides that no violation occurred, or that the person cited did not commit the violation, the penalty case shall be closed and that person notified of that action. Where no such petition is received, or where an offense has been established and the offender denies that he committed the violation, the District Commander shall take no mitigation or remission action but shall demand payment of the full penalty. Where demand for payment of the penalty is made and the penalty amount is not paid, the District Commander shall refer the case to the United States Attorney for collection. The civil penalty procedure is more fully described in § 2.50-20.

(2) If a report of boarding or an investigation report submitted by a Coast Guard officer or investigative body discloses evidence of violation of a Federal criminal statute, the District Commander in accordance with § 2.50-25 shall refer the findings to the United States Attorney for appropriate action.

(b) (1) The District Commander may by specific order in writing delegate to his Chief of Staff, Chief, Merchant Marine Safety Division, and/or Chief, Operations Division, the authority to determine whether to invoke the statutory civil penalty and, upon receipt from the offender of a petition for relief from a penalty so invoked, whether to mitigate or to remit the penalty, as he may deem proper. The order shall prescribe the types of cases which the designated officer may initiate and process to the same extent permitted the District Commander by this subpart, and those types of cases which that officer may initiate and process to a lesser extent. With respect to the latter category of cases, the District Commander's order shall set forth in detail the limits of the authority delegated to the designated officer.

(2) The term "District Commander", as hereinafter used in this subpart to designate the officer authorized to assess, mitigate or remit penalties, shall also include the terms "Chief of Staff" or "Chief, Merchant Marine Safety Division," or "Chief, Operations Division," as appropriate, if such officer has been delegated authority to perform such functions.

§ 2.50-15 Transfer of civil penalty cases from one District Commander to another.

(a) Ordinarily the District Commander having jurisdiction over the situs of a violation of the navigation or vessel inspection laws will initiate civil penalty proceedings. Having assumed jurisdiction in a given case by initiating an investigation or other proceedings to determine fault, the District Commander may transfer that jurisdiction to another District Commander where convenience or necessity requires: *Provided*, That the rights of the alleged offender are not prejudiced thereby.

(b) The District Commander transferring jurisdiction will forward all records applicable to the case direct to the District Commander assuming jurisdiction.

§ 2.50-20 Civil penalties.

(a) (1) Violations of Title 46, U.S. Code, sections 526 to 526u (Motorboat Act of April 25, 1940, as amended), or Title 46, U.S. Code, sections 527 to 527h (Federal Boating Act of 1958), or implementing regulations in this chapter prescribed under these laws, when observed by Coast Guard law enforcement officers, will be brought to the attention of the alleged offender upon the issuance of Form CG-4100, "Report of Boarding and Notice of Violation."

(2) Violations of other navigation and vessel inspection laws, or regulations prescribed thereunder in this chapter or in 33 CFR Chapter I, will be brought to the attention of the alleged offender by appropriate form prescribed by the Commandant or by letter.

(b) If it is decided that a violation of a navigation or a vessel inspection law has occurred, a determination will be made whether to invoke no penalty at all and close the case, or whether to invoke the full statutory penalty. In the latter event, notice of the decision shall be given to the offender by appropriate form prescribed by the Commandant or by letter. The offender may thereupon petition for relief and the District Commander or his delegatee may mitigate the penalty or remit it in full, except as the latter action is limited by paragraph (f) of this section. When no penalty is invoked or the penalty is remitted, no further action by the offender will be necessary. When the penalty is mitigated, such mitigation will be made conditional upon payment within 15 days of the notice, or within such other longer period of time as the District Commander, in his discretion, may allow.

(c) If a statutory civil penalty for any violation of law or regulation is invoked by the District Commander or his dele-

gatee, the offender will be informed of his right to apply for relief within 15 days, or such longer period as the District Commander, in his discretion, may allow. The offender may, if he desires, appear in person before the District Commander or his designated representative. If the offender does not apply for relief but instead maintains that he is innocent of the violation(s) charged, and the District Commander, upon review, concludes that invocation of the penalty was proper and the offender persists in his position, no remission or mitigation action will be taken. On the other hand, should the offender submit his case to the District Commander on a *nolo contendere* basis, that is, by neither admitting nor denying his innocence, relief may be granted as the circumstances may warrant.

(d) (1) Upon notification of the offender of the decision of the District Commander, or his delegatee, the offender will be given instructions for making an appeal to the Commandant from the actions of the District Commander. Any such appeal shall be submitted to the Commandant through the District Commander within 15 days of the date of notification by the District Commander, or such longer period of time as the District Commander, in his discretion, may allow.

(2) In the event that there is an appeal from the decision of the Chief of Staff, the Chief, Merchant Marine Safety Division, or the Chief, Operations Division, acting under delegated authority, the District Commander shall review the case. Should the District Commander determine that the assessment of the penalty was not warranted, the case shall be closed and notification thereof given to the appellant. Those cases which, upon review by the District Commander, are determined to be properly instituted and administered in accordance with the regulations in this subpart and for which remission of the penalty is not considered justified shall be forwarded to the Commandant with the District Commander's recommendation.

(e) Should the alleged offender require additional time to present matters favorable to his case at any stage of these penalty proceedings, a request for additional time shall be addressed to the District Commander who may grant a reasonable extension of time where proper justification is shown.

(f) Under the following circumstances the District Commander shall forward cases involving violations of the navigation and vessel inspection laws to the United States Attorney with the recommendation that action be taken to collect the full statutory penalty:

(1) When, within the prescribed time, the offender does not explain the violation, appeal for mitigation or remission, or otherwise respond to letters or form inquiries from the District Commander; or,

(2) When, having responded to such inquiries, the offender fails or refuses to pay the statutory or mitigated penalty, or to appeal to the Commandant, within the time prescribed; or,

(3) When the offender denies that the violation(s) was committed by him, the District Commander, upon review, disagrees and the offender thereafter fails to respond to the demand, appeal to the Commandant, or to remit payment of the full penalty within the time prescribed (see § 2.50-10(a)(1)); or,

(4) When the offender fails to pay within the prescribed time the penalty as determined by the Commandant after consideration of the offender's appeal from the action of the District Commander.

§ 2.50-25 Criminal penalties.

(a) Prosecution in the Federal courts for violations of those laws or regulations enforced by the Coast Guard which provide, upon conviction, for punishment by fine or imprisonment is a matter finally determined by the Department of Justice. This final determination consists of deciding whether and under what conditions to prosecute or to abandon prosecution.

(b) Except in those cases where the approval of the Commandant is required, the District Commander is hereby authorized to determine whether or not a violation of a statute carrying a criminal penalty is one which would justify referral of the case to the United States Attorney. The Commandant's approval is required in the following cases where evidence of a criminal offense is disclosed:

(1) Marine casualties or motorboat accidents resulting in death.

(2) Marine Boards (Part 136 of this chapter).

(3) Violations of port security regulations (33 CFR Parts 6, 121 to 126, inclusive).

(c) The District Commander will identify the laws or regulations which were violated and make specific recommendations concerning the proceedings to be instituted by the United States Attorney in every case.

(d) Referral of a case to the United States Attorney for prosecution terminates the Coast Guard's authority with respect to the criminal aspects of a violation.

§ 2.50-30 Civil and criminal penalties.

(a) If a violation of law or regulation carries both a civil and a criminal penalty, the District Commander is hereby authorized to determine whether to initiate civil penalty proceedings, in which case the procedure outlined in § 2.50-20 will be followed, or whether to refer the case to the United States Attorney for prosecution in accordance with § 2.50-25, which outlines the appropriate procedure for handling criminal cases.

(b) When the United States Attorney declines to institute criminal proceedings, the District Commander shall decide whether to initiate civil penalty proceedings or to close the case, whereupon the alleged violator shall be notified regarding that decision.

§ 2.50-35 Procedure for payment of civil penalty for violation of law or regulation.

(a) The payment must be by postal money order or check payable to the order of the U.S. Coast Guard when mailed to the District Commander, attention of the Collection Clerk. If the payment is made in person at the Office of the District Commander, the payment may be in cash or by postal money order or check payable to the order of the U.S. Coast Guard.

(b) The payment of any penalty is acknowledged on Coast Guard Form CG-2688 (Collection Receipt).

(c) If the penalty paid is determined by the Commandant to have been improperly or excessively imposed, and the money has already been covered into the United States Treasury, the payor will be notified and requested to submit an application for a refund on Form CG-1086, "Claim for Navigation Fine Exacted in Excess or in Error," which should be mailed to the appropriate District Commander for transmission to the Commandant. Such application must be made by the payor within one year of the date of payment of the penalty. If the penalty paid is determined by the Commandant to have been improperly or excessively imposed and the money has not been covered into the United States Treasury, the Coast Guard will notify the payor and upon application will refund the penalty or that portion considered to be in excess of the proper amount.

§ 2.50-40 Specific types of violations reported.

(a) *General.* The procedures in this subpart apply to detected violations of navigation and vessel inspection statutes and the regulations issued pursuant thereto which provide for the imposition of civil penalties. These procedures do not apply to penalties set forth in Title 14, U.S. Code.

(b) *Inspection laws.* The vessel inspection laws in Title 46, U.S. Code, and implementing regulations in this chapter (unless otherwise provided in specific statutes) which invoke civil penalties for violations of those laws and regulations are set forth in sections 497 and 498 of Title 46, U.S. Code.

(c) *Numbering of undocumented vessels.* The penalty for violations of the Federal Boating Act and implementing regulations in Parts 170-173 of this chapter is in section 527e of Title 46, U.S. Code.

(d) *Motorboats.* The penalties for violations of the Act of April 25, 1940, as amended (46 U.S.C. 526-526u) and the implementing regulations in subchapter C of this chapter are in section 526o of Title 46, U.S. Code.

(e) *Marine regattas or parades.* The penalty for violating the act of April 28, 1908, as amended, and applicable regulations in 33 CFR Part 100 is in section 457 of Title 46, U.S. Code.

(f) *Reckless or negligent operation.* The civil penalty for violating the reckless and negligent operation provisions of the act of April 25, 1940 (46 U.S.C. 526l(a)) and the regulations in this

chapter (Part 26) is applicable to the operation of all vessels and is in section 526o of Title 46, U.S. Code.

(g) *Rules of the road.* The penalties for violating applicable rules of the road and implementing regulations in 33 CFR Parts 80 to 96, inclusive, are in sections 158, 159, 244, 354, and 355 of Title 33, U.S. Code.

(h) *Load lines.* The penalties for violations of the Load Line Acts and the implementing regulations in parts 43 to 46 of this chapter are in sections 85g and 88g of Title 46, U.S. Code.

(i) *Great Lakes pilotage.* The civil penalty for violations of the Great Lakes Pilotage Act of 1960 is in section 216e of Title 46, U.S. Code.

(j) *Manning or employment of seamen.* The laws governing shipping of seamen or manning of certain vessels in Title 46, U.S. Code, and implementing regulations in this chapter in specific statutes invoke civil penalties for certain violations of those laws and regulations. (For example, see sections 562, 567, 568, 571, 575, 623, 641, 642, 643, and 672 of Title 46, U.S. Code.)

(k) *Dangerous Cargo Act and regulations.* The penalties for violations of the Dangerous Cargo Act and the implementing regulations in Parts 146 and 147 of this chapter are in subsection (14) of section 170 of Title 46, U.S. Code.

Subpart 2.75—Approvals of Safety Equipment, Materials and Installations, and Qualifications for Construction Personnel

AUTHORITY: The provisions of this Subpart 2.75 interpret or apply R.S. 4488, as amended, 4491, as amended, secs. 1, 2, 49 Stat. 1544, as amended, sec. 17, 54 Stat. 166, as amended, sec. 3, 54 Stat. 347, as amended, sec. 3, 70 Stat. 152, sec. 4(e), 67 Stat. 462, sec. 3, 68 Stat. 675, sec. 8, 75 Stat. 403; 46 U.S.C. 481, 489, 367, 526p, 1333, 390b, 43 U.S.C. 1333(e), 50 U.S.C. 198, 33 U.S.C. 1007. Treasury Department Orders 167-14, November 26, 1954, 19 F.R. 8028; 167-15, January 3, 1955, 20 F.R. 840; 167-20, June 18, 1956, 21 F.R. 4894; CGFR 56-28, July 24, 1956, 21 F.R. 5659; 167-38, October 26, 1959, 24 F.R. 8857; 167-46, November 6, 1961, 26 F.R. 10609. Additional authority is cited in parentheses following the sections affected.

§ 2.75-1 Approvals.

(a) Certain navigation and vessel inspection laws, or regulations in this chapter or in 33 CFR Chapter I, require the Commandant's approval before specific types of safety equipment, materials, or installations may be installed or used on vessels subject to Coast Guard inspection, or on other described vessels, motorboats, artificial islands, and fixed structures.

(b) The Commandant's approvals are issued to persons, partnerships, companies, or corporations who offer for sale specific items of safety equipment, materials, or installations, or intend them for their own or others' use. These approvals are intended to provide a control over the quality of such approved items. The Commandant's approvals apply only to those items constructed or installed in accordance with applicable requirements, and the details as described in the documents granting specific approval. If a

specific item when manufactured does not comply with these details, then it is not considered to be approved and the approval issued does not apply to such modified item. For example, if an item is manufactured with changes in design or material not previously approved, the approval does not apply to such modified item. The failure to comply with applicable requirements and details specified in the approval subjects the holder to immediate suspension of approval as described in § 2.75-40, and if necessary, to a public hearing seeking withdrawal of approval and removal of all such items from use or installation as provided in § 2.75-50.

(c) The Commandant's approvals are issued to qualified holders in the form of certificates of approval (Form CGHQ-10030), by appropriate description and identification in documents filed with the Office of the Federal Register and published in the FEDERAL REGISTER, or by letters, or by appropriate markings on drawings, plans, etc. Under the direction of the Commandant and the Chief, Office Merchant Marine Safety, the Chief, Merchant Marine Technical Division, is hereby delegated the authority to exercise the necessary actions relating to the granting, suspension, cancellation or revocation of approvals for specific items of safety equipment, materials, or installations required by law or regulation in this Chapter or in 33 CFR Chapter I to have the Commandant's approval. The authority hereby delegated to the Chief, Merchant Marine Technical Division, may be further delegated by him in the case of suspensions.

(d) The approvals granted to holders qualifying under the regulations in this chapter or in specifications, copies of which may be obtained from the Commandant (MMT), and to which official Coast Guard numbers are assigned, will be in the form of certificates of approval. Unless specifically provided otherwise, the approval shall be valid for a period of five years from the date on the certificate of approval, but subject to suspension and/or cancellation if it is found the item offered, sold, or used as Coast Guard approved differs in any detail from the item as described in the certificate of approval and referenced material.

(e) A specific Commandant's approval granted to anyone, which is described in a certificate of approval, or a letter, or marked plans, etc., cannot be transferred to another without a specific prior authorization from the Commandant. Such a transfer without the Commandant's authorization normally terminates such approval.

(f) From time to time, appropriate notices of actions taken regarding approvals will be published in the FEDERAL REGISTER. For the information of users of approved items, a listing by names of holders of current approvals by specific items is published in a Coast Guard pamphlet CG-190, Equipment Lists.

§ 2.75-5 Certificates of approval.

(a) The Chief, Merchant Marine Technical Division, will issue a certificate of approval to the manufacturer or party

named therein and certify that such manufacturer or party has submitted satisfactory evidence that the item described therein complies with the applicable laws and regulations, which are outlined on the reverse side of the certificate.

(b) The approval shall be in effect for a period of five years from the date on the certificate of approval unless sooner canceled or suspended by proper authority, or otherwise specifically stated in the certificate.

§ 2.75-10 Procedures for obtaining approvals.

(a) The procedural requirements for obtaining approvals of items covered by specifications and bearing official Coast Guard approval numbers are set forth in Parts 160 to 164, inclusive, of this chapter. For other items the procedural requirements are usually those described in the regulations governing such items.

(b) Applications for approvals are usually in letter form and should be addressed to the Commandant (MMT), United States Coast Guard, Washington, D.C., 20226. Correspondence pertaining to a particular item required to be approved should be mailed to the Commandant of the Coast Guard district in which the manufacturer's plant or factory is located. When plans, drawings, test data, etc., are required to be submitted by the manufacturer, it is desired that the application identify the material being transmitted with the application.

§ 2.75-15 Requirements and tests.

(a) Approved items described in certificates of approval are usually required to meet specific requirements and/or tests, prior to obtaining the approval. Additional factory tests to determine that proper uniformity and quality controls are followed during the manufacture of the specific items may be required. These requirements governing the manufacturer in particular are set forth in the regulations in this chapter or in specifications, copies of which may be obtained from the Commandant (MMT). If the requirements are met, a certificate of approval will be issued.

(b) When the specific item described in an application, together with accompanying drawings, plans, etc., does not meet applicable requirements or fails to meet specified tests, the applicant will be notified accordingly. The Coast Guard may suggest changes in order for the item to qualify and permit the issuance of an approval.

(c) For items not covered by specification requirements in Parts 160 to 164, inclusive (Subchapter Q—Specifications) of this chapter, the requirements in the navigation and vessel inspection laws, and applicable regulations in this chapter or in 33 CFR Chapter I apply and shall be met before approvals may be issued.

§ 2.75-20 Affidavits or certifications.

(a) In the manufacture of certain items of equipment, appliances, etc., or in their installation, affidavits or

certifications are required to be submitted to the Coast Guard stating that materials and/or construction used with respect thereto will comply with the applicable navigation and vessel inspection laws and regulations in this chapter or in 33 CFR Chapter I.

(b) For requirements regarding marine engineering materials or appliances, see Subpart 61.45 of Subchapter F (Marine Engineering) of this chapter.

§ 2.75-25 Portable fire extinguishers.

(a) The portable fire extinguishers listed and labeled as "marine type" by a recognized laboratory, as provided in Subpart 162.028 of Part 162 of Subchapter Q (Specifications) of this chapter, will be accepted as approved for use on merchant vessels, motorboats, etc., whenever required by the regulations in this chapter, and for use on artificial islands and fixed structures on the Outer Continental Shelf whenever required by the regulations in 33 CFR Parts 140 to 146, inclusive.

(b) The procedures for manufacturers to follow and the requirements governing portable fire extinguishers to qualify being listed and labeled as "marine type" by a recognized laboratory are set forth in Subpart 162.028 of Part 162 of Subchapter Q (Specifications) of this chapter.

(c) The procedures for a laboratory to qualify as a "recognized laboratory" and to be listed in § 162.028-5 of Subchapter Q (Specifications) of this chapter are as follows:

(1) The laboratory shall submit an informal application in writing on its usual letterhead paper to the Commandant (MMT), United States Coast Guard, Washington, D.C., 20226, requesting recognition and listing, as a recognized laboratory.

(2) Accompanying the informal application, as identified enclosures, shall be:

(i) A certification that it is a laboratory which has been and is regularly engaged in the examination, testing, and evaluation of portable fire extinguishers.

(ii) A certification that it has an established factory inspection, listing, and labeling program, together with a complete description of it and how it works.

(iii) A description of its facilities used in the examination, testing, and evaluation of portable fire extinguishers, together with its name (if different from that of submitter), and location (city, street, and state).

(iv) A list of the names and home and office addresses of its principal officers and its managing directors (if any).

(v) A description of its special standards for listing and labeling portable fire extinguishers as "marine type," as contemplated by the specification in Subpart 162.028 of Part 162 of Subchapter Q (Specifications) of this chapter.

(3) If the Commandant finds that a laboratory qualifies as a "recognized laboratory," and it is subject to Coast Guard jurisdiction, the approval and listing will be published in the FEDERAL REGISTER and will be in effect until suspended, canceled or terminated by proper authority. The failure of a recognized

laboratory to maintain its established factory inspection, listing and labeling program as approved by the Commandant shall be cause for terminating a listing as a "recognized laboratory."

(Interpret or apply R.S. 4417a, as amended, 4426, as amended, sec. 1, 2, 49 Stat. 1545, as amended, sec. 8, 54 Stat. 165, as amended; 46 U.S.C. 391a, 404, 526g)

§ 2.75-30 Special purpose water safety buoyant devices.

(a) The special purpose water safety buoyant devices listed and bearing the combination "Laboratory/USCG" labels issued by a recognized laboratory, as provided in Subpart 160.064 of Part 160 of Subchapter Q (Specifications) of this chapter, will be accepted as approved for the designated use on all motorboats and small passenger vessels, and for general use on motorboats of Classes A, 1, or 2 not carrying passengers for hire, whenever so provided by the regulations in this chapter.

(b) The procedures for manufacturers to follow and the requirements governing special purpose water safety buoyant devices to qualify for being listed and labeled with the combination "Laboratory/USCG" labels are set forth in Subpart 160.064 of Part 160 of Subchapter Q (Specifications) of this chapter.

(c) The procedures for a laboratory to qualify as a "recognized laboratory" and to be listed in § 160.064-5 of Subchapter Q (Specifications) of this chapter are as follows:

(1) The laboratory shall submit an informal application in writing on its usual letterhead paper to the Commandant (MMT), United States Coast Guard, Washington, D.C., 20226, requesting recognition and listing as a recognized laboratory.

(2) Accompanying the informal application, as identified enclosures, shall be:

(i) A certification that it has been exempted from federal income tax under section 501(c)(3) of the Internal Revenue Code of 1954 as an organization organized and operated exclusively for testing for public safety.

(ii) A certification that it has an established factory inspection, listing, and labeling program together with a complete description of it and how it works.

(iii) A description of the facilities used in the examination, testing, and evaluation of special purpose water safety buoyant devices, together with the name of the facilities (if different from that of the submitter), and location (city, street, and state).

(iv) A list of names and home and office addresses of its principal officers, and the managing directors (if any).

(v) Copies of its special standards for listing and labeling special purpose water safety buoyant devices using the combination "Laboratory/USCG" label, as contemplated by 46 CFR Subpart 160.064 of Part 160 of Subchapter Q (Specifications) of this chapter.

(3) If the Commandant finds that a laboratory qualifies as a "recognized laboratory," and it is subject to Coast Guard jurisdiction, the approval and list-

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ing will be published in the FEDERAL REGISTER and will be in effect until suspended, canceled or terminated by proper authority. The failure of a recognized laboratory to maintain its established factory inspection, listing and labeling program as approved by the Commandant shall be cause for terminating a listing as a "recognized laboratory".

(R.S. 4426, as amended, sec. 6, 54 Stat. 164, as amended; 46 U.S.C. 404, 526e)

§ 2.75-40 Suspension of approval.

(a) Whenever it is determined that a specific item is not in compliance with the applicable laws, rules, and regulations, and the requirements specified in the approval issued by the Coast Guard, the District Commander or the Officer in Charge, Marine Inspection, will immediately notify the holder of the approval wherein the specific item fails to meet applicable requirements. If the defects, deficiencies or variations in the item are deemed important, such officer is authorized and may immediately suspend the approval, may require the holder to surrender the certificate of approval (if any), and may direct the holder to cease claiming the defective items are Coast Guard approved, pending a final decision from the Commandant in the matter.

(b) The procedures for appealing the temporary suspension shall be those described in § 2.01-70.

§ 2.75-50 Withdrawals or terminations of approvals.

(a) Approvals may be withdrawn if items are found not to be in compliance with the conditions of approval or if necessary by reason of changes in regulations. Notice will be given to the manufacturer who is given an opportunity to present his case at a public hearing of the Merchant Marine Council. (See 33 CFR 1.05-1, 1.05-10).

(b) Approvals of equipment are terminated when the manufacturer is no longer in business, or when the item is no longer being manufactured, or when the approval expires.

§ 2.75-60 Certification of ship's stores and supplies.

(a) Ship's stores and supplies of a dangerous nature, as defined in §§ 147.02-1 and 147.02-2 of Subchapter N (Dangerous Cargoes) of this chapter, shall not be used on board vessels, domestic or foreign, on the navigable waters of the United States, including its territories and possessions (see 33 CFR Part 2), unless they have been certified for such use by the Coast Guard.

(b) The procedure for obtaining certification of ship's stores and supplies are in §§ 147.03-1 to 147.03-10, inclusive, of Subchapter N (Dangerous Cargoes) of this chapter.

(c) The ship's stores and supplies of a dangerous nature which do not require a certification are described in §§ 147.03-1 and 147.03-11 of Subchapter N (Dangerous Cargoes) of this chapter.

(R.S. 4472, as amended; 46 U.S.C. 170)

§ 2.75-70 Welders.

(a) Welders are required to pass tests before being permitted to make welds subject to inspection by the Coast Guard. Description of the tests is contained in Part 56 of this chapter.

(R.S. 4417, as amended, 4418, as amended, 4429, as amended; 46 U.S.C. 391a, 392, 407)

Subpart 2.85—Load Lines

§ 2.85-1 Assignment of load lines.

(a) Vessels listed in 46 U.S.C. 85, 88, and 88a are required by those laws to have load lines assigned.

(b) The procedures for the assignment of load lines, the issuance of Load Line Certificates, the annual inspections required, the causes for cancellation of certificates, and the forms of those certificates are contained in Parts 43-45 of Subchapter E (Load Lines) of this chapter.

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a)

Subpart 2.90—Plans, Drawings or Blueprints

§ 2.90-1 General requirements.

(a) Drawings, blueprints or plans showing the details of construction of vessels subject to inspection or installations thereon are required to be submitted for approval in accordance with applicable regulations in this chapter, information as to which may be obtained at any local Marine Inspection Office.

(b) The requirements for passenger vessel construction are in Parts 43-46, 70-78, of this chapter.

(c) The requirements for tank vessel construction are in Parts 30-39, 43-45, of this chapter.

(d) The requirements for cargo and miscellaneous vessel construction are in Parts 43-45, 90-97, of this chapter.

(e) The requirements for marine engineering installations or equipment are in Parts 50-69 of this chapter.

(f) The requirements for electrical engineering installations or equipment are in Parts 110-113 of this chapter.

(g) The requirements for items to be manufactured under specific approval by the Commandant are in Parts 160-164 of this chapter.

(Interpret or apply sec. 3, 68 Stat. 675; 50 U.S.C. 198. E.O. 11239, 30 F.R. 9671; 3 CFR 1965 Supp.)

Subpart 2.95—Retention of Records by the Public

AUTHORITY: The provisions of this Subpart 2.95 also interpret or apply sec. 4, 67 Stat. 462, sec. 3, 70 Stat. 152, sec. 3, 68 Stat. 675; 43 U.S.C. 1333(e), 46 U.S.C. 390b, 50 U.S.C. 198. Treasury Department Orders 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-15, Jan. 3, 1955, 20 F.R. 840; 167-20, June 18, 1956, 21 F.R. 4894.

§ 2.95-1 Certificates or documents issued by Coast Guard.

(a) Certificates or documents issued to the public, as required by laws, rules, or regulations, shall be retained for the applicable period of time, as follows:

(1) If the certificate or document specifies a definite period of time for which it is valid, it shall be retained for so long as it is valid unless it is required to be surrendered; or,

(2) If the certificate or document does not specify a definite period of time for which it is valid, it shall be retained for that period of time such certificate or document is required for operation of the vessel; or,

(3) If the certificate or document is evidence of a person's qualifications, it shall be retained for so long as it is valid unless it is required to be surrendered.

(b) Nothing in this section shall be construed as preventing the Coast Guard from canceling, suspending, or withdrawing any certificate or document issued at any time.

§ 2.95-5 Certificates or documents issued by others.

(a) Certificates or documents issued by other public agencies or private organizations, which are accepted as prima facie evidence of compliance with requirements administered by the Coast Guard, shall be retained for the applicable period of time as follows:

(1) If the certificate or document specifies a definite period of time for which it is valid, it shall be retained for so long as it is valid unless it is required to be surrendered; or,

(2) If the certificate or document does not specify a definite period of time for which it is valid, it shall be retained for the period of time such certificate or document is required for operation of the vessel; or,

(3) If the certificate or document is evidence of a person's qualifications, it shall be retained for so long as it is valid unless it is required to be surrendered.

§ 2.95-10 Equipment or material required to be approved.

(a) The manufacturer of any equipment or material, which must also be approved by or found satisfactory for use by the Commandant, shall keep the required drawings, plans, blueprints, specifications, production models (if any), qualification tests, and related correspondence containing evidence that the Coast Guard has found such equipment or material satisfactory, during the period of time the approval or listing is valid. (Most of the specifications containing detailed descriptions of records required to be retained by the public are in Parts 160 to 164, inclusive in Subchapter Q (Specifications) of this chapter.

PART 3—MERCHANT MARINE PERSONNEL

Subpart 3.01—Licenses and Documents

Sec.
3.01-1 Applications for licenses or documents.

3.01-75 Appeals.

Subpart 3.10—Disclosure of Information Regarding Shipment and Discharge of Merchant Mariners

3.10-1 General.

3.10-5 Applications.

- Sec.
- 3.10-10 Designation of representatives.
- 3.10-15 Shipping articles.
- 3.10-20 Copies of shipping articles.
- 3.10-25 Official logbooks.
- 3.10-30 Copies of logbook entries.
- 3.10-35 Costs.

Subpart 3.13—Shipment and Discharge of Seamen

- 3.13-1 Signing-on and discharging seamen.
- 3.13-10 Shipping articles.
- 3.13-15 Forecastle card.
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Subpart 3.15—Arbitration by Shipping Commissioners

- 3.15-1 Arbitration.
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Subpart 3.19—Effects of Deceased or Deserting Seamen

- 3.19-1 Accounts of wages and effects.
- 3.19-5 Kinsman's petition.

CROSS REFERENCE: For Coast Guard jurisdiction, see 33 CFR Part 1.

Subpart 3.01—Licenses and Documents

AUTHORITY: The provisions of this Subpart 3.01 issued under R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply sec. 7, 49 Stat. 1936, as amended, sec. 3, 70 Stat. 152, sec. 3, 68 Stat. 675; 46 U.S.C. 689, 390b, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-20 June 18, 1956, 21 F.R. 4894.

§ 3.01-1 Applications for licenses or documents.

Applications for licenses, extension of routes, or documents required for officers or seamen by 46 U.S.C. 214, 224, 226, 228, 229, 229b, 230-237, 243, 367, 391a, 404, 405, 526f, 1333, 672, 643, 481, or 50 U.S.C. 198 and the regulations in Parts 10 and 12 of this chapter as a prerequisite for employment shall be made on one of the following Coast Guard forms which are obtainable from the Officer in Charge, Marine Inspection, at any local marine inspection office: CG 866, License application; CG-719, Seaman's certificate application. The procedures for obtaining the licenses or documents, renewals, if necessary, or duplicates, if lost; the qualifications; and examinations necessary, are all set forth in Parts 10 and 12 of this chapter, together with Coast Guard numbers and titles of forms used, obtainable from any marine inspection office.

§ 3.01-75 Appeals.

(a) *General.* Any person aggrieved by any decision or action of the Officer in Charge, Marine Inspection, may appeal therefrom to the Coast Guard District Commander of the district in which the action or decision was made. A further appeal may be made to the Commandant, U.S. Coast Guard, from the decision of the District Commander.

(b) *Time limits.* (1) Appeals from decisions of the inspectors or the Officer in Charge, Marine Inspection, to the Coast Guard District Commander, shall be made in writing within 30 days after

the decisions or actions appealed from shall have been rendered or taken. Such appeals shall set forth the requirements appealed from and the reasons why the decision or action should be set aside or revised.

(2) Appeals from the decisions of the Coast Guard District Commander to the Commandant shall be made in writing within 30 days after the decisions appealed from shall have been rendered.

(c) *Decision on appeals.* Pending the determination of the appeal, the decision of the Officer in Charge, Marine Inspection, shall remain in effect. The decision of the Commandant is final.

Subpart 3.10—Disclosure of Information Regarding Shipment and Discharge of Merchant Mariners

AUTHORITY: The provisions of this Subpart 3.10 issued under R.S. 4405, as amended, 4462, as amended, sec. 7, 49 Stat. 1936, as amended; 46 U.S.C. 375, 416, 689. Interpret or apply R.S. 4448, as amended, 4551, as amended, secs. 1, 2, 49 Stat. 1544, as amended, sec. 3, 70 Stat. 152, sec. 3, 60 Stat. 238, sec. 3, 68 Stat. 675; 46 U.S.C. 234, 643, 367, 390b, 5 U.S.C. 1002, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-20, June 18, 1956, 21 F.R. 4894.

§ 3.10-1 General.

(a) Upon oral or written inquiry to the Coast Guard, information will be released as to the dates and ports of the commencement and termination of all voyages by merchant vessels for which shipping articles are signed before shipping commissioners. The inquiry should be addressed to the Officer in Charge, Marine Inspection, who has custody over such records.

(b) Other information contained in shipping articles or logbooks covering voyages of merchant vessels which are required to be kept by the Coast Guard will be released only to the extent and under the conditions provided in this subpart.

§ 3.10-5 Applications.

(a) *Form.* The applications for access to and release of information may be made orally except when the regulations in this subpart require a written application for such record. When a written application is required the application should be addressed to the Officer in Charge, Marine Inspection, or to the person designated as having authority to grant access to or release of information from such records. The written application shall be executed by the parties desiring the information or by any person designated to represent such party as described in § 3.10-10.

(b) *Contents.* The application shall:

- (1) Clearly state or describe the information desired;
- (2) Identify the applicant, and if the applicant is a representative of another, specify the nature of the representation and attach proof of designation when required;
- (3) Set forth the interest of the applicant in the subject matter;
- (4) The purpose for which the information is desired; and

(5) Whether or not the information or record sought is intended for use in prosecuting a claim against the United States.

§ 3.10-10 Designation of representatives.

(a) In any case when access to or release of information from any record is permitted to any party by this subpart, the permission shall extend, when such party is deceased or incompetent, to an executor, administrator, heir, guardian, trustee, or legal representative of such party: *Provided*, That the relationship is established by production of satisfactory documentary evidence.

(b) When access to or release of information from any record is sought by one acting as agent or attorney on behalf of any party recognized by regulations in this chapter, the representation as agent or attorney shall be established by the filing with the Officer in Charge, Marine Inspection, documentary proof of such representation. This proof may be in one of the following forms:

- (1) A statement of authority in the handwriting of and signed by the party represented; or,
- (2) A notarized statement of authority signed by the party represented; or,
- (3) A copy of a contract of retainer signed by the party represented.

(c) This authorization shall contain a statement of the specific matters in which representation is authorized.

§ 3.10-15 Shipping articles.

(a) Upon oral or written inquiry, access to and release of information from shipping articles may be had by:

- (1) The master, owner, charterer, or operator, or an agent of the owner, charterer, or operator, of the vessel for voyage(s) covered by the shipping articles.
- (2) Any officer of the United States Government acting in the course of his official duty.

(3) Any officer of a State, Territory, or Possession, or any political subdivision thereof, or the District of Columbia, acting in the course of his official duty.

(b) Upon oral or written inquiry, access to and release of information with respect to general provisions in the shipping articles and specific entries therein pertaining to a crewmember may be had by such crewmember for voyage(s) covered by the shipping articles.

(c) In any case of personal injury, illness, or death of any member of the crew, a crewmember or his authorized representative, upon written application, may examine the shipping articles and may make excerpts of such entries therein pertaining to such party. In addition, when the written application identifies certain crewmembers who may have personal knowledge of such injury, illness, or death by names, nicknames, or ratings, excerpts may be made with respect to their names and addresses, "Z" or "BK" numbers, ratings, and names and addresses of their next of kin.

§ 3.10-20 Copies of shipping articles.

(a) For any party allowed to have access to and release of information from shipping articles by § 3.10-15(a), certified copies may be furnished upon request.

(b) For any party allowed to make excerpts from shipping articles by § 3.10-15(b), certified copies of such excerpts may be furnished upon request.

§ 3.10-25 Official logbooks.

(a) Upon oral or written inquiry, access to and release of information from official logbooks may be had by:

(1) The master, owner, charterer, or operator, or an agent of the owner, charterer, or operator, of the vessel for the voyage(s) covered by the official logbook.

(2) Any officer of the United States Government acting in the course of his official duty.

(3) Any officer of a State, territory, or possession, or any political subdivision thereof, or the District of Columbia, acting in the course of his official duty.

(b) Upon written application, the examination of official logbooks may be permitted to the following:

(1) Any member of the crew for voyage(s) covered by the official logbook.

(2) Any passenger transported or any owner of cargo shipped on voyage(s) covered by the official logbook.

(3) Any underwriter of the vessel or its cargo for voyage(s) covered by the official logbook.

(4) Any representative of any party described in this paragraph when authorized in accordance with § 3.10-10.

(c) Excerpts may be made by parties described in paragraph (b) of this section of such entries in the official logbook which pertain to the party making the application. In addition, when the application states in general terms the information desired, excerpts may be made of these entries in the official logbook which are demonstrated to the custodian as being relevant and material to the interest of the party as stated in the application.

§ 3.10-30 Copies of logbook entries.

(a) For any party allowed to have access to and release of information or to make excerpts of certain entries from official logbooks by § 3.10-25, certified copies of such entries may be furnished upon request.

§ 3.10-35 Costs.

The access to and release of information, as authorized in this subpart, shall be subject to the payment of costs. (See 33 CFR 1.25)

Subpart 3.13—Shipment and Discharge of Seamen

AUTHORITY: The provisions of this Subpart 3.13 issued under R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply sec. 7, 49 Stat. 1936, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 689, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026.

§ 3.13-1 Signing-on and discharging seamen.

The master of any merchant vessel of 75 tons or upward, engaged in the intercoastal trade or of any vessel bound from a port in the United States to any foreign port, other than vessels engaged in trade between the United States and the British North American possessions or the West Indies, or the Republic of Mexico, is required to enter into an agreement with each member of the crew who shall be discharged under the agreement and receive wages in the presence of a shipping commissioner in accordance with 46 U.S.C. 564. Where the complete crew has been signed on in the presence of a shipping commissioner and the later shipment of other seamen becomes necessary because of desertion or casualty, the master may sign on such replacements without the presence of a shipping commissioner but he is required to report the transaction immediately upon arrival at first port of call to the United States consul at or nearest such port, or in the Panama Canal Zone to the shipping commissioners or deputy shipping commissioners there. Shipping commissioners may, at the request of the master or owner of a vessel, ship and discharge all or part of the crew of a vessel engaged in the coastwise trade, or trade between the United States and the Dominion of Canada, or Newfoundland, or the West Indies, or Mexico, in accordance with 46 U. S. C. 646.

§ 3.13-10 Shipping articles.

For the signing-on and discharging of seamen in accordance with 46 U.S.C. 564, 565, 566, and 713, and the regulations in Part 14 of this chapter, the shipping commissioners furnish Forms CG-705, CG-705A, and CG-705B, Shipping articles, same except for size, to record the agreement entered into between the master and crew of a vessel. Copies of these forms are obtainable upon request from shipping commissioners or Officers in Charge, Marine Inspection, at marine inspection offices, U.S. Coast Guard. It is the duty of shipping commissioners to see that each officer signing on is in possession of a continuous discharge book, certificate of identification, or United States merchant mariner's document, and a license; and that each signing on in an unlicensed capacity is in possession of a continuous discharge book or a certificate of identification and a certificate of service or certificate of efficiency or a United States merchant mariner's document representing such certificates. The shipping articles are prepared in quadruplicate, original and duplicate retained by the master pending completion of voyage, the triplicate retained by shipping commissioner, and quadruplicate forwarded to Commandant, U. S. Coast Guard. After the members of the crew are signed on the shipping commissioner prepares Form CG-708, Shipping of Seamen, certifying that the crew members knew and willingly signed the shipping articles, which is attached to the shipping articles. When the voyage or period of time covered by the ship-

ping articles is completed, the members of the crew are discharged and the wages paid in the presence of the shipping commissioner, if required by law, and proper entries made in the shipping articles.

§ 3.13-15 Forecastle card.

At the commencement of every voyage or engagement the master is required to post certain excerpts from the shipping articles in such part of the vessel as to be accessible to the crew in accordance with 46 U. S. C. 577. The Forecastle Card, Form CG-704, is obtainable from shipping commissioners or Officer in Charge, Marine Inspection, U. S. Coast Guard.

§ 3.13-30 Allotments.

A merchant mariner desiring to make an allotment of his wages, in accordance with the regulations in Part 15 of this chapter, fills out Form CG-722, Seaman's Allotment Note, furnished by the shipping commissioner at the time he signs the shipping articles, or copies may be obtained upon request from shipping commissioners in the United States ports, or from United States consular officers in foreign ports. If the allotment complies with the law, it is approved. No appeals are permitted.

§ 3.13-35 Logbooks.

Every vessel of 75 tons or upward, engaged in the intercoastal trade, or any vessel bound from a port in the United States to any foreign port, other than in the British North American possessions, shall have an official logbook and every master of such vessel shall make or have entries made therein regarding matters required by 46 U.S.C. 201, 202, 203, 701, 702, and 85. One or more copies of the official logbook, Coast Guard Form CG-706-B or 706-C, depending upon the number of persons employed as crew, is furnished the master of a vessel at the time the crew is signed on before a shipping commissioner; or copies of the official logbook are obtainable upon request from the Officer in Charge, Marine Inspection. After the official logbooks have served their purpose they are filed with the shipping commissioner or Officer in Charge, Marine Inspection.

§ 3.13-40 Discharges.

When a master of a vessel in accordance with Part 14 of this chapter discharges a merchant seaman and makes entries in the seaman's continuous discharge book, he will fill out Form CG-718E, Record of Entry in Continuous Discharge Book, which is forwarded to the Commandant, United States Coast Guard. The Form CG-718E is obtainable from shipping commissioners, collectors of customs and deputy collectors of customs acting as shipping commissioners or Officers in Charge, Marine Inspection. When a seaman holds a certificate of identification, a certificate of discharge, Form CG-718A, is issued and approved by a shipping commissioner or master as evidence of service performed. This form may be obtained upon request from shipping commissioners, collectors of customs or deputy

collectors of customs acting as shipping commissioners or Officers in Charge, Marine Inspection.

§ 3.13-45 Seamen not shipped or discharged before shipping commissioners.

Masters of certain vessels are required to report on ship personnel not shipped or discharged before a shipping commissioner. The Form CG-735 (T) has been prepared and must be used by the masters in accordance with Part 14 of this chapter. The form may be obtained upon request from shipping commissioners, collectors or deputy collectors of customs acting as shipping commissioners, or Officers in Charge, Marine Inspection. When voyage is completed, it must be delivered to nearest marine inspection office for transmission to Headquarters.

§ 3.13-50 Service record.

A merchant mariner upon discharge in accordance with the requirements of Part 14 of this chapter has recorded in his continuous discharge book entries regarding his service. When the merchant mariner requests in person or writing for a record of sea service shown in a surrendered continuous discharge book, the Officer in Charge, Marine Inspection, or other issuing officer will prepare in duplicate Form CG-723, Certificate of Seamen's Service, and will deliver the original to the seaman and send the duplicate to Commandant, U.S. Coast Guard.

Subpart 3.15—Arbitration by Shipping Commissioners

AUTHORITY: The provisions of this Subpart 3.15 issued under R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply sec. 7, 49 Stat. 1936, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 689, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026.

§ 3.15-1 Arbitration.

The Form CG-717, Agreement as to Arbitration, is used by seamen, master, consignees, agents or owners of vessels in submitting matters to shipping commissioners. This form is obtainable from shipping commissioners or collectors of customs or deputy collectors of customs acting as shipping commissioners. One copy of the form is made and this copy is retained by the shipping commissioner who acts on the matters submitted and his decision is final. No appeals are allowed.

§ 3.15-5 Mutual releases.

The Form CG-713A, Mutual Release, is used by masters and seamen to effect settlement of claims for wages in cases of seamen signed off prior to completion of a voyage. This form may be obtained from shipping commissioners or collectors of customs or deputy collectors of customs acting as shipping commissioners. One copy is prepared and retained by the shipping commissioner who acts on the matters involved and his decision is final. A certificate of mutual release,

Form CG-739, is prepared by the shipping commissioner or person acting as shipping commissioner, signed by the seaman when given to him by the shipping commissioner, and is used by the seaman not present at sign-off of vessel's crew as evidence that he has signed a mutual release. This form is prepared in duplicate from information in shipping articles and official logbook.

Subpart 3.19—Effects of Deceased or Deserting Seamen

AUTHORITY: The provisions of this Subpart 3.19 issued under R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply sec. 7, 49 Stat. 1936, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 689, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026.

§ 3.19-1 Accounts of wages and effects.

The masters of certain United States vessels in the cases of deceased or deserting seamen have to prepare Form CG-1517, Account of Wages and Effects of Deceased or Deserting Seamen, for use in disposition of the wages and effects of such seamen. The forms may be obtained upon request from shipping commissioners, collectors or deputy collectors of customs acting as shipping commissioners, or Officers in Charge, Marine Inspection. Four copies are prepared and submitted to the shipping commissioner for transmission to the District Court. The shipping commissioner upon examination of information on the form, may approve or disapprove the account after reviewing the vessel's official logbook. No appeal is permitted. The seamen's next of kin is informed of the action taken.

§ 3.19-5 Kinsman's petition.

The next of kin of a deceased seaman has to petition the District Court of the United States for the wages and effects of the deceased seaman on Form CG-726, Kinsman's petition for wages and effects of deceased seaman. This form may be obtained upon request from shipping commissioners, collectors or deputy collectors of customs acting as shipping commissioners, or Officers in Charge, Marine Inspection. One copy of the form is presented by the next of kin to the United States District Court who acts upon the petition and either approves or disapproves the petition.

PART 4—INVESTIGATIONS AND HEARINGS

Subpart 4.01—Casualties and Accidents

Sec.
4.01-1 Reports.
4.01-5 Investigation.

AUTHORITY: The provisions of this Part 4 issued under secs. 2, 633, 63 Stat. 496, 545; 14 U.S.C. 2, 633. Interpret or apply R.S. 4450, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 239, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-17, June 29, 1955, 20 F.R. 4976.

CROSS REFERENCE: For Coast Guard jurisdiction, see 33 CFR Part 1.

§ 4.01-1 Reports.

(a) Regulations regarding reports of marine casualties and accidents are in Part 136 of this chapter.

(b) Regulations regarding reports of boating accidents under the Federal Boating Act of 1958 are in Part 173 of this chapter.

§ 4.01-5 Investigation.

(a) Regulations for casualty and accident investigation procedures are contained in Part 136 of this chapter.

SUBCHAPTER B—MERCHANT MARINE OFFICERS AND SEAMEN

PART 10—LICENSING OF OFFICERS AND MOTORBOAT OPERATORS AND REGISTRATION OF STAFF OFFICERS

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10.02-23 Issuance of duplicate license.
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10.05-13 Master of Great Lakes steam and motor vessels.
10.05-15 Master of bays, sounds, and lakes other than the Great Lakes, steam and motor vessels.
10.05-17 Master of river steam or motor vessels.
10.05-19 Master of ferry steam or motor vessels.
10.05-21 Master or pilot of steam yachts.
10.05-23 Master of passenger barges.
10.05-25 Chief mate of ocean steam or motor vessels.

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10.05-41	Pilot of tank vessels of not more than 150 gross tons.
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10.20-7	Physical examination requirements.
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10.20-11	Issuance of duplicate license.
10.20-13	Suspension or revocation of license.

Subpart 10.25—Registration of Staff Officers

10.25-1	Application of regulations.
10.25-3	Grades of certificates issued.
10.25-5	Staff department defined.
10.25-7	General requirements.
10.25-9	Experience requirements.

AUTHORITY: The provisions of this Part 10 issued under R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Treasury Department Order 120, July 31, 1950, 15 F.R. 6521, unless otherwise noted.

Subpart 10.01—General**§ 10.01-1 Purpose of regulations.**

(a) The purpose of the regulations in this part is to provide a comprehensive and adequate means of determining the qualifications an applicant must possess in order to be eligible for a license as deck or engineer or radio officer on merchant vessels, or a license to operate motorboats or for a certificate of registry as staff officer.

§ 10.01-5 Authority for regulations.

(a) *General.* The authority to prescribe regulations generally is set forth in Title 46, U.S. Code, sections 375 and 416, as well as in certain other provisions in Title 46, U.S. Code, sections 170, 214, 215, 222, 224, 224a, 226, 228, 229, 230-234, 239, 240, 361, 362, 364, 372, 381, 391, 391a, 392, 393, 399, 400, 402-414, 435, 436, 451-453, 460, 461, 462, 464, 467, 470-482, and 489-498, and acts amendatory thereof or supplemental thereto. Under the provisions of Title 46, U.S. Code, section 372, the Commandant, United States Coast Guard, superintends the administration of the vessel inspection laws and is required to produce a correct and uniform administration of the inspection laws, rules and regulations.

(b) *Deck and engineer officers' licenses.* The regulations regarding requirements for deck and engineer officers' licenses interpret or apply Title 46, U.S. Code, sections 214, 224, 224a, 225, 226, 228, 229, 230, 231, 233, 237, 367, 391a, 404, 405, 672a, and 1132, and Title 50, U.S. Code, section 198. The regulations regarding requirements for deck and engineer officers' licenses for officers on vessels subject to the Officers' Competency Certificates Convention, 1936, interpret or apply Title 46, U.S. Code, section 224a.

(c) *Radio officers.* The regulations regarding the licensing of radio officers interpret or apply Title 46, U.S. Code, sections 229a-229h.

(d) *Motorboat operators' licenses.* The regulations regarding the licensing of motorboat operators interpret or apply Title 46, U.S. Code, sections 526f and 526g.

(e) *Staff officers.* The regulations regarding the registration of staff officers interpret or apply Title 46, U.S. Code, section 247.

(f) *Operators' and ocean operators' licenses.* The regulations regarding the operators' and ocean operators' licenses interpret or apply Title 46, U.S. Code, section 390b.

Subpart 10.02—General Requirements for All Deck and Engineer Officers' Licenses

AUTHORITY: The provisions of this Subpart 10.02 interpret or apply R.S. 4417a, as amended, 4426, as amended, 4427, as amended, 4438, as amended, 4438a, as amended, 4439, as amended, 4440, as amended, 4441, as amended, 4442, as amended, 4443, as amended, 4445, as amended, sec. 2, 29 Stat. 188, as amended, sec. 1, 34 Stat. 1411, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 70 Stat. 152, and sec. 3, 68 Stat. 675; 46 U.S.C. 391a, 404, 405, 224, 224a, 226, 228, 229, 214, 230, 231.

225, 237, 367, 390b, 50 U.S.C. 198. Treasury Department Orders 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-20, June 18, 1956, 21 F.R. 4894, unless otherwise noted.

§ 10.02-1 Issuance of licenses.

(a) Applicants for licenses are charged with the duty of establishing to the satisfaction of the Coast Guard that they possess all of the qualifications necessary, such as age, experience, character and citizenship, before they shall be entitled to be issued licenses. Until an applicant meets this mandatory requirement, he is not entitled to be licensed to serve as an officer on a vessel of the United States. No person who has been convicted by court-martial of desertion or treason in time of war, or has lost his nationality for any of the other reasons listed in § U.S.C. 1481, is eligible for a license. Neither is a person eligible for a license, who has been convicted by a court of record of a violation of the narcotic drug laws of the United States, the District of Columbia, or any State or Territory of the United States, within ten years prior to the date of filing the application; or who, unless he furnishes satisfactory evidence that he is cured, has ever been the user of or addicted to the use of a narcotic drug.

(b) After application to an Officer in Charge, Marine Inspection, any person who is found qualified under the requirements set forth in this subchapter shall be issued an appropriate license valid for a term of five (5) years. In appropriate cases a limitation commensurate with the experience of the applicant shall be placed upon the license.

(c) Every person to whom a license is issued shall place his signature and left thumb print thereon, and upon any sheets attached for additional indorsements.

(d) Every person who receives a license shall make oath before an Officer in Charge, Marine Inspection, or commissioned officer of the Coast Guard authorized to administer oaths under 10 U.S.C. 936 or 14 U.S.C. 636, to be recorded upon his official file, that he will faithfully and honestly, according to his best skill and judgment, without concealment or reservation, perform all the duties required of him by law and obey all lawful orders of his superior officers.

(Sec. 2, 68 Stat. 484; 46 U.S.C. 239b. Treasury Department Order 167-9, August 3, 1954, 19 F.R. 5195)

§ 10.02-3 Original license defined.

The first license issued to any person by the Coast Guard shall be considered an original license, when the United States records show no previous issue to such person.

§ 10.02-5 Requirements for original licenses.

(a) *General.* Before an original license is issued to any person to act in a licensed capacity on inspected vessels of the United States, he shall personally appear before an Officer in Charge, Marine Inspection and present satisfactory documentary evidence of his eligibility in respect to the requirements of this section.

(b) *Minimum age.* Any person who has attained the age of 21 years and is qualified in all other respects shall be eligible for a license except that a license as third mate, third assistant engineer or second class pilot may be granted an applicant who has reached the age of 19 years and who is qualified in all other respects, but no such license may be raised in grade before the holder thereof shall have reached the age of 21 years.

(c) *Citizenship.* No license shall be issued to any person who is not a citizen of the United States, either native-born or fully naturalized. The Officer in Charge, Marine Inspection must be satisfied as to the bona fides of all evidence of citizenship presented, and may reject any evidence that he has reason to believe is not authentic. Acceptable evidence of citizenship is described below in the order of its desirability, except that the first six (6) acceptable methods will be assigned equal weight:

- (1) Birth certificate or certified copy.
- (2) Certificate of Naturalization.
- (3) Baptismal certificate or parish record recorded within one year after birth.
- (4) Statement of a practicing physician certifying that he attended the birth and that he has a record in his possession showing the date on which it occurred.
- (5) State Department passport.

(6) A commission in the United States Navy, Marine Corps, Coast Guard, either regular or reserve; or satisfactory documentary evidence of having been commissioned in one of these services subsequent to January 1, 1936, provided such commission or evidence shows the holder to be a citizen.

(7) A continuous discharge book, certificate of identification, or merchant mariner's document issued by the Coast Guard or by the former Bureau of Marine Inspection and Navigation which shows the holder as an American citizen, provided the records indicate that the holder of such continuous discharge book, certificate of identification, or merchant mariner's document produced satisfactory evidence of his citizenship at the time of the issuance of the same.

(8) Delayed certificate of birth. If an applicant claiming to be a citizen of the United States submits a delayed certificate of birth issued under a State's seal, it may be accepted as prima facie evidence of citizenship in the absence of any collateral facts indicating fraud in its procurement.

(9) For persons deriving citizenship through naturalization of their parents, or for persons born outside the United States who claim to be United States citizens by virtue of their parents having been United States citizens at the time of such birth, a Certificate of Citizenship issued by the United States Immigration and Naturalization Service is acceptable as documentary evidence of citizenship.

(10) If none of the requirements set forth in subparagraphs (1) through (9) of this paragraph can be met by the applicant, he should make a statement to

that effect, and in an attempt to establish citizenship, he may submit for consideration data of the following character:

(1) Report of the Census Bureau showing the earliest record of age or birth available. Request for such information should be addressed to the Director of the Census, Washington, D.C., 20233. In making such request, definite information must be furnished the Census Bureau as to the place when the first census was taken after birth of the applicant, giving the name of the street and number of the house, or the names of the cross streets between which the house was located if residing in a city; or the name of the town, township, precinct, magisterial district, militia district, beat or election district if residing in the country; also the names of parents, or the names of other persons with whom residing on the date specified.

NOTE: A census was taken in the following years: June 1, 1880, 1870, 1880, and 1900; April 15, 1910; January 1, 1920; April 1, 1930; April, 1940, April, 1950 and April, 1960. (Records for 1890 are not available.)

(ii) Affidavits of parents, or relatives; or affidavits by two or more responsible citizens of the United States, stating citizenship; school records; immigration records; or insurance policies.

(d) *Written application.* The Officer in Charge, Marine Inspection shall require all applicants for original license to make written application upon Coast Guard Form CG-866.

(e) *Physical examination.* (1) All applicants for an original license shall be required to pass a physical examination given by a medical officer of the United States Public Health Service and present a certificate executed by this Public Health Service Officer to the Officer in Charge, Marine Inspection. This certificate shall attest to the applicant's acuity of vision, color sense, and general physical condition. In exceptional cases where an applicant would be put to great inconvenience or expense to appear before a medical officer of the United States Public Health Service, the physical examination and certification may be made by another reputable physician.

(2) Epilepsy, insanity, senility, acute venereal disease or neurosyphilis, badly impaired hearing, or other defect that would render the applicant incompetent to perform the ordinary duties of an officer at sea are causes for certification as incompetent.

(3) For an original license as master, mate or pilot, the applicant must have either with or without glasses, at least 20/20 vision in one eye and at least 20/40 in the other. The applicant who wears glasses, however, must also be able to pass a test without glasses of at least 20/40 in one eye and at least 20/70 in the other. The color sense will be tested by means of a pseudo-isochromatic plate test, but any applicant who fails this test will be eligible if he can pass the "Williams" lantern test or equivalent.

(4) Applicants for original engineers' licenses shall be examined only as to their ability to distinguish the colors

red, blue, green, and yellow. No applicant for original license as engineer shall be disqualified for failure to distinguish colors if any of his required experience is served prior to May 1, 1947.

(5) For original license as engineer the applicant must have, either with or without glasses, at least 20/30 vision in one eye and at least 20/50 in the other. The applicant who wears glasses, however, must also be able to pass a test without glasses of at least 20/50 in one eye and at least 20/70 in the other.

(6) Persons serving or intending to serve in the Merchant Marine Service are recommended to take the earliest opportunity of ascertaining, through examination by an ophthalmic surgeon, whether their vision, and color vision where required, is such as to qualify them for service in that profession.

(7) Where an applicant is not possessed of the vision, hearing, or general physical condition necessary, the Officer in Charge, Marine Inspection, after consultation with the Public Health Service physician or other examining physician, may make recommendation to the Commandant for an exception to these requirements, if in his opinion, extenuating circumstances warrant special consideration. Any requests for a decision by the Commandant must be accompanied by all pertinent correspondence, records, and reports. In this connection recommendations from agencies of the Federal Government operating Government vessels, as well as owners and operators of private vessels, made in behalf of their employees, will be given full consideration in arriving at a decision.

(f) *First Aid Certificate.* No candidate for original license shall be examined until he presents a certificate from the United States Public Health Service that he has passed a satisfactory examination based on the contents of "The Ship's Medicine Chest and First Aid at Sea," or other manual arranged for the purpose and having the approval of the United States Public Health Service.

(g) *Experience or training.* (1) All applicants for original licenses shall present to the Officer in Charge, Marine Inspection, letters, discharges, or other official documents certifying the amount and character of their experience and the names of the vessels on which acquired. The Officer in Charge, Marine Inspection, must be satisfied as to the bona fides of all evidence of experience or training presented and may reject any evidence that he has reason to believe is not authentic or which does not sufficiently outline the amount, type and character of service. Coast Guard issued "certificates of seaman's service" and "certificates of discharge" shall be returned to the applicant. The Officer in Charge, Marine Inspection, shall make entry on the application that service represented by these documents has been verified. All other documentary evidence of service or authentic copies thereof shall be filed with the application. No license shall be considered as satisfactory evidence of any qualifying experience required by this paragraph.

(2) No original license shall be issued to any person unless 25 percent of the required experience has been obtained within the 3 years immediately preceding the date of application. Service in the armed forces of the United States shall not be counted in computing the 3 years.

(3) No original license shall be issued to any naturalized citizen on less experience in any grade or capacity than would have been required of a citizen of the United States by birth.

(4) Experience and service acquired on foreign vessels is creditable for establishing eligibility for an original license, subject to evaluation by the Commandant to determine that it is a fair and reasonable equivalent to service acquired on merchant vessels of the United States, with respect to grade, tonnage, horsepower, waters and operating conditions. An applicant who has obtained his qualifying experience on foreign vessels is required to submit satisfactory documentary evidence of such service in the forms prescribed by subparagraph (1) of this paragraph, which certify the amount, character and scope of his service in these respects.

(5) No applicant for a license, who is a naturalized citizen, and who has obtained his experience on foreign vessels, shall be given a grade of license higher than that upon which he has actually served while acting under the authority of a foreign license.

(6) Experience in towed barges fitted with sails and rigging is not considered as sail vessel time.

(h) *Professional examination.* (1) When the amount and character of an applicant's experience is found to be satisfactory and he is eligible in all other respects, the applicant shall be examined in writing by the Officer in Charge, Marine Inspection: *Provided, however,* That upon navigable waters of the United States newly opened to navigation, and where the only pilots obtainable are illiterate Indians or other natives, the fact that such persons can neither read nor write shall not be considered a bar to such Indians or other natives receiving licenses as pilots if they are otherwise qualified therefor.

(2) When the license application of any person has been approved, the Officer in Charge, Marine Inspection, shall give the applicant the required examination as soon as practicable. If applicants for license cannot be examined without material delay by the Officer in Charge, Marine Inspection, of the district in which the application is made, said Officer in Charge, Marine Inspection, shall endeavor, through the Coast Guard District Commander, to arrange for such examination by some other Officer in Charge, Marine Inspection.

(i) *Character check and references.* (1) The Officer in Charge, Marine Inspection, shall require each applicant for an original license to have the written endorsement of the master and that of two other licensed officers of a vessel on which he has served. For a license as engineer or as pilot at least one of the other endorsers shall be the chief engineer or licensed pilot, respectively, of a vessel on which the applicant has served.

Where no sea service is required for a license, the applicant may have the endorsement of three reputable persons to whom he is known.

(2) Fingerprint records on FBI Form "Applicant" shall be submitted to the Commandant on each applicant at the same time application for license is made. The application of any person may be rejected by the District Commander or his authorized representative when derogatory information has been brought to his attention which indicates that the applicant's habits of life and character are such as to warrant the belief that he cannot be entrusted with the duties and responsibilities of the station for which he made application. In the event that an applicant is rejected he shall be advised that he may submit a request to the Commandant for a review of his case. No examination shall be given or temporary permit issued in this type case pending the Commandant's authorization.

(3) The fact that an applicant for an original license is on probation as a result of action under R. S. 4450, as amended (46 U. S. C. 239), does not itself make such an applicant ineligible, provided he meets all the requirements for such original license. However, an original license issued under those circumstances will be subject to the same probationary conditions as were imposed against the seaman's certificates or licenses in proceedings under R. S. 4450, as amended. Any such applicant must file an application for license in the usual manner, and the offense for which he was placed on probation will be considered on the merits of the case in determining his fitness to hold the license applied for. Nothing in the regulations in this subchapter, however, shall be construed to permit an applicant to be examined for an original license during any period when a suspension without probation or a revocation imposed pursuant to R. S. 4450, as amended, is effective against his license or certificate.

(Sec. 5, 49 Stat. 1935, as amended, sec. 302, 49 Stat. 1992, as amended; 46 U.S.C. 672a, 1132)

§ 10.02-7 Requirements for raise of grade of license.

(a) *General.* Before any person is issued a license for raise of grade to act on inspected vessels of the United States, he shall personally appear before an Officer in Charge, Marine Inspection, and present satisfactory documentary evidence of his eligibility in respect to the requirements contained herein.

(b) *Surrendering old license.* Upon the issuance of a new license or raise in grade, the applicant shall surrender the old license to the Officer in Charge, Marine Inspection.

(c) *Age requirement.* No license may be raised in grade before the holder thereof shall have reached the age of 21 years.

(d) *Written application.* The Officer in Charge, Marine Inspection, shall, before granting raise of grade of license, require the applicant to make written application upon the Coast Guard Form CG-866.

(e) *Physical requirements.* (1) No license as master, mate, or pilot shall be raised in grade except upon the official certificate of a medical officer of the United States Public Health Service that the color sense of the applicant is normal. Applications for raise in grade of engineer's licenses shall not be subjected to such examination. In exceptional cases where an applicant would be put to great inconvenience or expense to appear before a medical officer of the United States Public Health Service, the physical examination and certification may be made by another reputable physician. The color sense will be tested by means of a pseudochromatic plate test, but any applicant who fails this test will be eligible if he can pass the "Williams" lantern test or equivalent. A person failing the pseudochromatic plate test shall, if the Public Health Station at which he is undergoing test is not equipped with a lantern, pay his own expenses to journey to such station as is equipped with same.

(2) In the event it is found that an applicant for raise of grade of license obviously suffers from some physical or mental infirmity to a degree that, in the opinion of the Officer in Charge, Marine Inspection, would render him incompetent to perform the ordinary duties of an officer at sea, he shall be required to undergo an examination by a medical officer of the Public Health Service to determine his competency in such respects. Nothing herein contained shall debar an applicant who has lost the sight of one eye from securing a raise of grade of his license: *Provided*, He is qualified in all other respects: *And provided*, That his vision in his one eye passes the test required for the better eye of an applicant possessed of both eyes. If the applicant subsequently produces a certificate from the Public Health Service to the effect that his condition has improved to a satisfactory degree, or is normal, he shall be qualified in this respect.

(f) *Experience or training.* (1) Applicants for raise of grade of licenses are charged with establishing to the satisfaction of the Coast Guard that they possess all of the qualifications necessary, such as age, experience, character, and citizenship before they are entitled to a raise of grade of license.

(2) Applicants for raise of grade of license shall present to the Officer in Charge, Marine Inspection, letters, discharges, or other official documents certifying to the amount and character of their experience and the names of the vessels on which acquired. Coast Guard issued "certificates of seaman's service" and "certificates of discharge" shall be returned to the applicant. The Officer in Charge, Marine Inspection, shall make entry on the application that service represented by these documents has been verified. All other documentary evidence of service or authentic copies thereof shall be filed with the application.

(3) No raise of grade of license shall be granted to any applicant unless 25 percent of the required sea service shall have

been served within 3 years immediately preceding the date of application. Service in the armed forces of the United States shall not be counted in computing the 3 years.

(4) No sea service acquired prior to the issuance of the license held shall be accepted as any part of the service required for raise in grade.

(5) No license for raise of grade shall be issued to any naturalized citizen on less experience in any grade than would have been required of a citizen of the United States by birth.

(6) Experience and service acquired on foreign vessels while holding a valid U. S. Merchant Marine Officer's license is creditable for establishing eligibility for a raise in grade, subject to evaluation by the Commandant to determine that it is a fair and reasonable equivalent to service acquired on merchant vessels of the United States, with respect to grade, tonnage, horsepower, waters and operating conditions. An applicant who has obtained his qualifying experience on foreign vessels is required to submit satisfactory documentary evidence of such service in the forms prescribed by subparagraph (2) of this paragraph which certify the amount, character and scope of his service in these respects.

(7) The fact that an applicant for a raise in grade of license is on probation as a result of action under R. S. 4450, as amended (46 U. S. C. 239), does not itself make such an applicant ineligible, provided he meets all the requirements for such raise in grade. However, a raise in grade of license issued under these circumstances will be subject to the same probationary conditions as were imposed against the seaman's certificates or licenses in proceedings under R. S. 4450, as amended. Any such applicant must file an application for license in the usual manner, and the offense for which he was placed on probation will be considered on the merits of the case in determining his fitness to hold the license applied for. Nothing in the regulations in this part, however, shall be construed to permit an applicant to be examined for a raise in grade of license during any period when a suspension without probation or a revocation imposed pursuant to R. S. 4450, as amended, is effective against his license or certificate.

(g) *Professional examination.* (1) When the amount and character of an applicant's experience for raise of grade is found to be satisfactory and he is eligible in all other respects, he shall be examined in writing by an Officer in Charge, Marine Inspection: *Provided, however*, That upon waters of the United States newly opened to navigation, and where the only pilots obtainable are illiterate Indians or other natives, the fact that such persons can neither read nor write shall not be considered a bar to such Indians or other natives receiving a raise in grade of license as pilot if they are otherwise qualified therefor.

(Interpret or apply R.S. 4447, as amended, sec. 5, 49 Stat. 1935, as amended, sec. 302, 49 Stat. 1992, as amended, 46 U.S.C. 233, 672a, 1132)

§ 10.02-9 Requirements for renewal of license.

(a) *Duty of applicants.* Applicants for renewals of licenses are charged with the duty of establishing to the satisfaction of the Coast Guard that they possess all of the qualifications necessary before they shall be issued a renewal of license.

(1) *Written application.* The Officer in Charge, Marine Inspection, shall, before granting renewal of a license, require the applicant to make written application on Coast Guard Form CG-3479.

(b) *Application for renewal.* The applicant for renewal shall appear in person before an Officer in Charge, Marine Inspection, except as provided in paragraph (g) of this section.

(c) *Fitness.* No license shall be renewed if title has been forfeited or facts which would render a renewal improper have come to the attention of the Coast Guard.

(d) *Period of grace.* (1) A license shall be renewed within 12 months after the date of expiration as shown on the license held, except when applicant's license has expired beyond the 12 month period of grace during the time of the holder's service with the Armed Forces or the Merchant Marine and there was no reasonable opportunity for renewal. The period of such service following the date of expiration as shown on the license shall be added to the 12 month period of grace.

(2) No license shall be renewed more than 90 days in advance of the date of expiration thereof, unless there are extraordinary circumstances that justify a renewal beforehand, in which case the reasons therefor must appear in detail upon the records of the Officer in Charge, Marine Inspection, renewing the license.

(e) *Masters', mates', or pilots' licenses.* (1) Every Officer in Charge, Marine Inspection, shall, before renewing an existing license to a master, mate, or pilot who has served under the authority of his license within the three years next preceding the date of application for renewal, or who has been employed in a position closely related to the operation of vessels during the same three year period, require that such licensed officer present an affidavit that he has read within the three months next preceding the date of application the Rules of the Road applicable to the waters for which he is licensed and demonstrate his knowledge of the application of the Rules of the Road.

(2) Every Officer in Charge, Marine Inspection, shall, before renewing an existing license to a master, mate, or pilot who has not served under the authority of his license within the three years next preceding the date of application for renewal, or who has not been employed in a position closely related to the operation of vessels during the same three year period, satisfy himself that such licensed officer is thoroughly familiar with the Rules of the Road applicable to the waters for which he is licensed. A written examination may be required for this purpose, or the applicant may be examined orally and a summary of the oral examination placed in the officer's

license file. In the event a candidate fails the examination, the provisions of § 10.02-19 shall apply, except in the event of subsequent failures the applicant may be re-examined after a lapse of one month from the date of the last failure.

(f) *Physical requirements.* (1) No license as master, mate, or pilot shall be renewed except upon the official certificate of a medical officer of the United States Public Health Service that the color sense of the applicant is normal. Applicants for renewal of license as engineer shall not be subject to examination as to ability to distinguish colors.

(2) The color sense will be tested by means of a pseudo-isochromatic plate test, but any applicant who fails this test will be eligible if he can pass the "Williams" lantern test or equivalent. A person failing the pseudoisochromatic plate test shall, if the Public Health Service Station at which he is undergoing test is not equipped with a lantern, pay his own expenses to travel to such station as is equipped with same.

(3) In the event an applicant for renewal of license as master, mate, or pilot is pronounced color blind, the Officer in Charge, Marine Inspection, may grant him a license limited to service during daylight only.

(4) In the event it is found that an applicant for renewal of license obviously suffers from some physical or mental infirmity to a degree that, in the opinion of the Officer in Charge, Marine Inspection, would render him incompetent to perform the ordinary duties of an officer at sea, the applicant shall be required to undergo an examination by a medical officer of the Public Health Service to determine his competency. If the applicant subsequently produces a certificate from the Public Health Service to the effect that his condition has improved to a satisfactory degree, or is normal, he shall be qualified in this respect.

(5) Nothing contained in this section shall debar an applicant who has lost the sight of one eye from securing a renewal of his license, provided he is qualified in all other respects, and the vision in his one eye passes the test required for the better eye of an applicant possessed of both eyes.

(6) In exceptional cases where an applicant would be put to great inconvenience or expense to appear before a medical officer of the United States Public Health Service, the physical examination or certification may be made by another reputable physician.

(g) *Renewal by mail.* Where an applicant for renewal would be put to great inconvenience or expense to appear in person before an Officer in Charge, Marine Inspection, or is engaged in a service that necessitates his continuous absence from the United States, his existing license may be renewed by forwarding the following documents to the Officer in Charge, Marine Inspection, of the office which issued the license to be renewed:

(1) A letter of transmittal indicating reasons for not appearing in person and stating to the best of his knowledge no

physical incapacity exists, together with a properly executed application on Coast Guard Form CG-3479;

(2) The oath of office on the form prescribed by the Coast Guard which has been duly executed before a person authorized to administer oaths;

(3) The license to be renewed; and,

(4) In the case of the renewal of a master's, mate's, or pilot's license:

(i) Certification by a United States Public Health Service Medical Officer or other reputable physician that color sense is normal; and,

(ii) Documentary evidence of service under authority of license within the three years next preceding the date of application or evidence of employment in a position closely related to the operation of vessels within the same three year period, together with an affidavit that the applicant has read within the three months next preceding the date of application the Rules of the Road applicable to the waters for which he is licensed and demonstration of his knowledge of the application of the Rules of the Road.

(h) *Reissue of expired license.* (1) Whenever an applicant shall apply for renewal of his license for the same grade, after 12 months after date of its expiration, he shall be required to pass an examination for the same grade of license, of such length and scope as will, in the judgment of the Officer in Charge, Marine Inspection, be sufficient to demonstrate adequately the continued professional knowledge of the examinee, except no professional examination will be required provided the license expired during the time of the holder's service with the armed forces or the merchant marine, and there was no reasonable opportunity for renewal. The Officer in Charge, Marine Inspection may require a written examination for this purpose.

(2) The renewed license shall receive the next higher number of issue of present grade and for the number of issue of all grades.

(R.S. 4447, as amended, 46 U.S.C. 233, sec. 5, 49 Stat. 1935, sec. 302, 49 Stat. 1992; 46 U.S.C. 672a, 1132)

§ 10.02-13 *Sea service as a member of the Armed Forces of the United States and on vessels owned by the United States as qualifying experience.*

(a) Sea service as a member of the Armed Forces of the United States will be accepted as qualifying experience for an original, raise of grade, or extension of route of license. Such service will be subject to evaluation by the Commandant to determine its equivalence to sea service required on merchant vessels and to determine the appropriate grade, class, and limit of license for which the applicant is eligible. The regulations governing the licensing of merchant marine personnel which are in effect on the date an applicant presents himself for examination shall be applicable in all cases.

(b) When any person who has served in a civilian capacity as commanding officer, master, mate, engineer, or pilot,

etc., of any vessel owned and operated by the United States, in any service, in which a license as master, mate, engineer, or pilot was not required at the time of such service applies for an examination for license, the Officer in Charge, Marine Inspection, shall forward the application, together with his comments, to the Commandant for evaluation.

§ 10.02-15 *Lifting of limitations.*

(a) If any Officer in Charge, Marine Inspection, is satisfied by the documentary evidence submitted that an applicant is entitled by experience and knowledge to an increase in the scope of his license, he may change any limitations which he may have previously placed upon the license.

(b) No Officer in Charge, Marine Inspection, may change on any license a limitation which he did not place thereon before full information regarding the reason for the limitation is obtained from the Officer in Charge, Marine Inspection, responsible for the same and the applicant has made up any deficiency in the experience required.

(c) No limitation on any license may be changed before the applicant has made up any deficiency in the experience prescribed for the license desired and passed the necessary examination.

§ 10.02-19 *Reexaminations and refusal of licenses.*

(a) Any applicant for license or indorsement who has been duly examined and refused may come before the same Officer in Charge, Marine Inspection, for reexamination at any time thereafter that may be fixed by such Officer in Charge, Marine Inspection, but such time shall not be less than 1 month from the date of his last failure. In the case of another failure, he will not be reexamined until after a lapse of at least 6 months from date of last failure.

(b) A candidate who has been duly examined and refused a license by an Officer in Charge, Marine Inspection, shall not be examined by any other Officer in Charge, Marine Inspection, until 1 year has elapsed from the date of the last refusal without the sanction of the Officer in Charge, Marine Inspection, that refused the applicant.

(c) If the Officers in Charge, Marine Inspection, refuse to grant an applicant the license applied for, they shall furnish him a statement setting forth the cause of their refusal.

§ 10.02-21 *Laws, general rules and regulations, and Rules of the Road to be furnished licensed officers.*

(a) Every master, mate, pilot, and engineer of vessels, when receiving an original license, a renewed license, or a raise of grade of license, shall be furnished at his request with a copy of the "Laws Governing Marine Inspection" and a copy of each of the "Rules and Regulations for Vessel Inspection" distributed by the Coast Guard pertinent to the license issued.

(b) Every master, mate, and pilot of vessels and motorboat operator, when receiving an original license, a renewed license, or a raise of grade of license,

shall be furnished at his request with a copy of the "Rules of the Road" applicable to the waters for which his license has been issued.

§ 10.02-23 Issuance of duplicate license.

(a) Whenever a person to whom a license has been issued loses his license, he shall report such loss to an Officer in Charge, Marine Inspection, who shall issue a duplicate license after receiving from such person a properly executed affidavit giving satisfactory evidence of such loss, and a record of the license from the Marine Inspection Office where it was issued. Such license shall be issued as a duplicate by the addition of the following typewritten indorsement, "This license replaces License Number ----, issued at ----- on the above date," as well as the port and date of the duplicate issue. The duplicate license, issued for the unexpired term, shall have the same force and effect as the lost license.

(b) When a person reports the loss of his license, or when it is discovered that any license or license form has been stolen from a Marine Inspection Office or when such lost or stolen licenses are recovered, the Officer in Charge, Marine Inspection, shall immediately report the loss, theft, or recovery to the Commandant giving a description of the license and all facts incident to its loss, theft, or recovery.

§ 10.02-25 Parting with license.

If the holder of any license granted to a master, mate, engineer, or pilot, voluntarily parts with it or places it beyond his personal control by pledging or depositing it with any other person for any purpose, he may be proceeded against in accordance with the provisions of R. S. 4450, as amended, looking to a suspension or revocation of his license.

§ 10.02-29 Suspension and revocation of licenses.

(a) When the license of any master, mate, engineer, or pilot is revoked such license expires with such revocation and any license of the same type subsequently granted to such person shall be considered in the light of an original license except as to number of issue.

(b) No person whose license has been suspended or revoked shall be issued another license except upon approval of the Commandant.

(c) When a license which is about to expire is suspended, the renewal of such license may be withheld until the expiration of the period of suspension.

(R.S. 4450, as amended, sec. 2, 68 Stat. 484; 46 U.S.C. 239, 239b. Treasury Department Order 167-9, August 3, 1954, 19 F.R. 5195)

§ 10.02-33 Right of appeal.

Whenever any person directly interested in or affected by any decision or action of any Officer in Charge, Marine Inspection, shall feel aggrieved by such decision or action with respect to the issuance of a license or a certificate, he may appeal therefrom to the District Coast Guard Commander having jurisdiction. A like appeal shall be allowed from any decision or action of the Dis-

trict Coast Guard Commander to the Commandant, whose action shall be final. Such appeals shall be made in writing within 30 days after the date of decision or action appealed from. Pending the determination of the appeal the decision of the Officer in Charge, Marine Inspection, shall remain in effect.

Subpart 10.05—Professional Requirements for Deck Officers' Licenses (Inspected Vessels)

AUTHORITY: The provisions of this Subpart 10.05 interpret or apply R.S. 4417a, as amended, 4426, as amended, 4427, as amended, 4438, as amended, 4438a, as amended, 4439, as amended, 4440, as amended, 4442, as amended, 4443, as amended, 4445, as amended, sec. 1, 34 Stat. 1411, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 70 Stat. 152, and sec. 3, 68 Stat. 675; 46 U.S.C. 391a, 404, 405, 224, 224a, 226, 228, 214, 230, 231, 233, 225, 237, 367, 390b, 50 U.S.C. 198. Treasury Department Order 167-14, November 26, 1954, 19 F.R. 8026; 167-20, June 18, 1956, 21 F.R. 4894, unless otherwise noted.

§ 10.05-1 Ocean licenses qualifying for all waters.

Any license issued for service as master or mate on ocean vessels shall qualify the licensee to serve in the same grade on any waters subject to the limitations of the license and without additional indorsement other than for pilot routes as may be required on the particular waters.

§ 10.05-3 Master of ocean steam or motor vessels.

(a) The minimum service required to qualify an applicant for license as master of ocean steam or motor vessels is:

(1) One year's service as chief mate of ocean steam or motor vessels of 1,000 gross tons or over; or,

(2) One year's service as chief mate of coastwise steam or motor vessels of 2,000 gross tons or over; or,

(3) Two years' service as second mate of ocean steam or motor vessels of 1,000 gross tons or over while holding a license as chief mate of such vessels; or,

(4) Two years' service as second mate of coastwise steam or motor vessels of 2,000 gross tons or over while holding a license as chief mate of such vessels; or,

(5) One year's service as master of coastwise steam or motor vessels of 2,000 gross tons or over; or,

(6) Two years' service as master of ocean or coastwise sail vessels of 700 gross tons or over, for license as master of freight or towing steam or motor vessels of not more than 3,000 gross tons; or,

(7) Three years' service as master of steam or motor vessels of 4,000 gross tons or over, except ferry vessels, on the Great Lakes, together with 1 year's service as second mate of ocean steam or motor vessels of 1,000 gross tons or over; or,

(8) Two years' service as licensed master of ocean or coastwise steam or motor vessels, or as licensed ocean operator of inspected, mechanically propelled passenger-carrying vessels operating on limited ocean or coastwise routes, for a license as master of ocean steam or motor passenger vessels not to exceed 300 gross tons.

§ 10.05-5 Master of coastwise steam or motor vessels.

(a) The minimum service required to qualify an applicant for license as master of coastwise steam or motor vessels is:

(1) One year's service as chief mate of ocean or coastwise steam or motor vessels; or,

(2) Two years' service as second mate of ocean or coastwise steam or motor vessels while holding a license as chief mate of ocean or coastwise steam or motor vessels; or,

(3) Two years' service as master of Great Lakes or lake, bay or sound steam or motor vessels of 500 gross tons or over, except ferry vessels, together with 6 months' service as chief mate or 12 months' service as second mate of ocean or coastwise steam or motor vessels, while holding license as master of such Great Lakes or lake, bay or sound vessels; or,

(4) Five years' service on ocean or coastwise sail vessels of 200 gross tons or over, 2 years of which service shall have been as master of such vessels, for license as master of coastwise freight and towing vessels of not over 750 gross tons; or,

(5) One year's service as a licensed master of ocean or coastwise sail vessels of 700 gross tons or over for a license as master of coastwise freight or towing vessels of not more than 3,000 gross tons; or,

(6) Two years' service as master or first-class pilot of Great Lakes or lake, bay or sound towing steam or motor vessels of 150 gross tons or over, for license as master of coastwise towing vessels of 750 gross tons or under; or,

(7) Two years' service as master of steam vessels of 1,000 gross tons or over, except ferry vessels, on the Great Lakes and other lakes, bays, or sounds, for license as master of coastwise vessels on routes not exceeding 300 miles; or,

(8) Two years' service as a licensed master of steam or motor vessels of 250 gross tons or over, engaged in the ocean or coastwise fisheries, for license as master of coastwise freight or towing vessels of not more than 750 gross tons; or,

(9) One year's service as licensed master of ocean or coastwise steam or motor vessels, or as licensed ocean operator of inspected, mechanically propelled passenger-carrying vessels operating on limited ocean or coastwise routes, for a license as master of coastwise steam or motor passenger vessels, not to exceed 300 gross tons and limited to the Atlantic, Gulf of Mexico or Pacific Coast of the United States, according to the documented qualifying experience of the applicant.

(b) The minimum service required to qualify an applicant for a license as master of motor vessels of not more than 300 gross tons, operated in connection with the offshore mineral and oil industries, limited to a stated distance offshore on the continental shelf of the Atlantic, Gulf or Pacific Coast of the United States, as determined by the Commander of the District in which the license is issued, is:

(1) One year as a licensed mate of mineral or oil industry vessels; or,

(2) One year as a licensed master or first-class pilot of inland steam or motor vessels, plus 1 year in the deck department of coastwise vessels or mineral or oil industry vessels; or,

(3) Two years' service as a licensed master of ocean or coastwise uninspected vessels; or,

(4) Three years' service in the deck department of ocean or coastwise vessels of which at least one year shall have been as master or person in charge of vessels of at least 50 gross tons. If the required service as master or person in charge has been on vessels of more than 15 and less than 50 gross tons, the service may be accepted as qualifying experience for a license as master of vessels of not more than 100 gross tons.

§ 10.05-7 Master of ocean or coastwise sail vessels.

(a) The minimum service required for a license as master of ocean or coastwise sail vessels of 100 gross tons and over is listed in this paragraph. In order to be eligible for an unlimited license, an applicant must have acquired all of his qualifying service on vessels of 500 gross tons or over.

(1) One year's service as a licensed master of ocean or coastwise uninspected sail vessels; or,

(2) Two years' service as master of ocean or coastwise sail vessels of 100 gross tons or over; or,

(3) One year's service as a licensed master of ocean or coastwise auxiliary sail vessels; or,

(4) Two years' service as a licensed mate of ocean or coastwise uninspected sail vessels; or,

(5) Two years' service as a licensed ocean operator of ocean or coastwise sail vessels carrying passengers; or,

(6) Five years' service in the deck department of ocean or coastwise sail vessels, of which at least 1 year shall have been as mate.

(b) An applicant who submits satisfactory documentary evidence that he has served as master of ocean or coastwise sail vessels of 100 gross tons or over for a period of at least 1 year, prior to June 1, 1958, shall be eligible without professional examination for a license as master of ocean or coastwise sail vessels of 100 to 700 gross tons, commensurate with his experience: *Provided*, That such applicant for a license under the provisions of this paragraph shall fulfill all requirements, other than professional examination, for an original license, including citizenship, physical examination, character and U. S. Public Health Service First Aid Certificate: *And provided further*, That 6 months of the required 1 year of experience shall have been within the 3 years immediately preceding the date of application. Application for the issuance of licenses under the provisions of this paragraph must be filed within a period of 1 year after June 1, 1958. However, if the applicant can show that because of active military service, he was unable to obtain 6 months' service within the past 3 years

or to file application within the 1 year period provided, the actual time spent in military service shall not be counted in computing either the 3-year period or the 1-year period specified in this paragraph.

§ 10.05-9 Master of ocean or coastwise steam or motor yachts.

The minimum service required to qualify an applicant for license as master of ocean or coastwise steam or motor yachts requiring licensed officers is 3 years' service in the deck department on ocean or coastwise steam, motor, or sailing yachts, of over 100 gross tons.

§ 10.05-11 Master, mate, or pilot of steam or motor vessels operating under special conditions.

(a) This section shall apply to every applicant for a license as master, mate, or pilot of steam pilotboats or seagoing motor pilotboats of 300 gross tons or over; or of steam vessels navigating the waters of the whaling grounds in the Alaskan Seas; or of steam vessels engaged exclusively in the business of whale fishing; or of steam vessels engaged in the Atlantic, Pacific, or Gulf Coast fisheries; or of steam or sail vessels navigating exclusively between ports in the Hawaiian Islands; or of steam or sail vessels or seagoing motor vessels of 300 gross tons or over navigating exclusively between ports of the Island of Puerto Rico.

(b) For original license as master, at least 3 years' experience in the deck department of such vessels is required.

(c) For original license as mate, at least 2 years' experience in the deck department of such vessels is required.

(d) Any person who has had at least 5 years' experience on sail vessels licensed in the fisheries of the United States, 2 years of which have been as master or mate of such sailing vessels, shall be eligible for a license as master or mate of steam fishing vessels to be employed exclusively in the Atlantic, Pacific, and Gulf coast fisheries.

(e) Any applicant for original license who has had 3 years' experience in the deck department on steam or motor pilot boats or who has had 2 years' experience in the deck department on steam or motor pilot boats and 1 year's experience on sail pilot boats, shall be eligible for license as mate of steam or motor pilot boats of 300 gross tons or over.

(f) Any master's or mate's license issued under this section may be endorsed as pilot on such inland waters on the coasts stated in his license as the appropriate Officer in Charge, Marine Inspection, may find the holder qualified to act on as pilot.

(g) An applicant for a master's license of seagoing vessels propelled by internal combustion engines, navigating exclusively between ports in the Hawaiian Islands, shall submit with his application statements duly executed and certified by reputable citizens qualified to judge the character, trustworthiness, and ability of the applicant.

(h) The Officer in Charge, Marine Inspection, shall make a diligent inquiry as to the applicant's character and merits, and if satisfied by the oral examination or practical demonstration and the proof of requisite knowledge and skill offered, the Officer in Charge, Marine Inspection, shall issue the license. No certificate from the United States Public Health Service based upon the subject of ship sanitation and first aid shall be required of such an applicant.

§ 10.05-13 Master of Great Lakes steam and motor vessels.

(a) The minimum service required to qualify an applicant for a license as master is listed in this paragraph. In order to be eligible for an unlimited license, an applicant must have acquired his service on vessels of 4,000 gross tons or over, except as specified in this section.

(1) One year's service as first class pilot while acting in the capacity of first mate on Great Lakes steam or motor vessels; or,

(2) Two years' service as first class pilot while acting in the capacity of second mate on Great Lakes steam or motor vessels; or,

(3) Four years' service as first class pilot on Great Lakes steam or motor vessels, one year of which shall have been while acting in the capacity of second mate; or,

(4) One year's service as master of Great Lakes steam or motor vessels of 150 gross tons or under while acting under the authority of a first class pilot's license, for a license as master of Great Lakes steam and motor vessels of not over 1,000 gross tons; or,

(5) One year's service as master and/or first class pilot on lakes, bays and sounds steam or motor towing vessels, together with 1 year of service as first class pilot on Great Lakes vessels of over 100 gross tons, for a license as master of Great Lakes towing vessels of not over 750 gross tons.

§ 10.05-15 Master of bays, sounds, and lakes other than the Great Lakes, steam and motor vessels.

(a) The minimum service required to qualify an applicant for license as master of steam and motor vessels on bays, sounds and lakes other than the Great Lakes is:

(1) One year's service as first-class pilot of steam and motor vessels on bays, sounds and lakes other than the Great Lakes; or,

(2) One year's service as mate of steam and motor vessels on bays, sounds and lakes other than the Great Lakes; or,

(3) One year's service as master of steam or motor vessels of 150 gross tons or under on bays, sounds and lakes other than the Great Lakes, while acting under the authority of a first-class pilot's license, for a license as master of bays, sounds and lakes other than the Great Lakes, steam or motor vessels of a tonnage commensurate with the experience of the applicant, but of not more than 500 gross tons; or,

(4) Two years' service in the deck department of steam or motor vessels on bays, sounds and lakes other than the Great Lakes, while holding a license as first-class pilot for bays, sounds and lakes other than the Great Lakes, as quartermaster or wheelsman for a license as master of steam and motor freight and towing vessels on bays, sounds and lakes other than the Great Lakes, limited to a gross tonnage commensurate with the experience of the applicant, but not more than 500 gross tons.

§ 10.05-17 Master of river steam or motor vessels.

The minimum service required to qualify an applicant for a license as master of steam or motor vessels navigating rivers exclusively is at least 3 years' service in the deck department of steam or motor vessels: *Provided*, That, 1 year of such service shall have been as licensed mate or pilot of steam or motor vessels, and, 1 year shall have been on river steam or motor vessels.

§ 10.05-19 Master of ferry steam or motor vessels.

(a) The minimum service required to qualify an applicant for license as master of ferry steam or motor vessels on either the Great Lakes, other lakes, bays, and sounds, or rivers is:

- (1) One year's service as first-class pilot; or,
- (2) Two years' service as wheelsman or quartermaster while holding a first-class pilot's license; or,
- (3) Two years' service in charge of a steam or motor vessel of 150 gross tons or under while acting under the authority of a pilot's license.

§ 10.05-21 Master or pilot of steam yachts.

The minimum service required to qualify an applicant for license as master or pilot of steam yachts on either the Great Lakes, other lakes, bays, and sounds, or rivers is 3 years' service in the deck department on board Great Lakes, other lakes, bays, and sounds, or river steam, motor, or sailing yachts.

§ 10.05-23 Master of passenger barges.

The minimum service required to qualify an applicant for license as master of barges carrying passengers on either the Great Lakes, other lakes, bays, and sounds, or rivers is 3 years' service in the deck department of such vessels.

§ 10.05-25 Chief mate of ocean steam or motor vessels.

(a) The minimum service required to qualify an applicant for license as chief mate of ocean steam or motor vessels is:

- (1) One year's service as second mate of ocean steam or motor vessels of 1,000 gross tons or over; or,
- (2) One year's service as second mate of coastwise steam or motor vessels of 2,000 gross tons or over; or,
- (3) Two years' service as officer in charge of a deck watch on ocean steam or motor vessels of 1,000 gross tons or over while holding a license as second mate of such vessels; or,

(4) Two years' service as officer in charge of a deck watch on coastwise steam or motor vessels of 2,000 gross tons or over while holding a license as second mate of such vessels; or,

(5) Two years' service as master of Great Lakes or other lakes, bay, or sound steam or motor vessels of 1,000 gross tons or over except ferry vessels, together with 1 year's service as officer in charge of a deck watch on ocean steam or motor vessels of 1,000 gross tons or over, or together with 1 year of such service on coastwise steam or motor vessels of 2,000 gross tons or over; or,

(6) Five years' service in the deck department of ocean or coastwise sail vessels of 200 gross tons or over, 2 years of such service shall have been as master of such vessels, for license as chief mate of ocean freight or towing vessels of not more than 3,000 gross tons; or,

(7) One year's service as master of any class of ocean steam or motor vessels of more than 250 gross tons for license as chief mate of ocean freight or towing vessels of not more than 1,500 gross tons; or,

(8) One year's service as mate of inspected ocean or coastwise vessels while holding an unlimited license as 3rd mate of ocean steam or motor vessels for a license as chief mate of ocean vessels of less than 1600 gross tons.

§ 10.05-27 Chief mate of coastwise steam or motor vessels.

(a) The minimum service required to qualify an applicant for license as chief mate of coastwise steam or motor vessels is:

(1) One year's service as second mate of ocean or coastwise steam or motor vessels of 1,000 gross tons or over; or,

(2) Two years' service as officer in charge of a deck watch on ocean or coastwise steam or motor vessels of 1,000 gross tons or over while holding license as second mate of ocean or coastwise steam or motor vessels; or,

(3) One year's service as master or first-class pilot of Great Lakes or other lakes, bay, or sound steam or motor vessels of 500 gross tons or over, except ferry vessels, together with 1 year's service as officer in charge of a deck watch on ocean or coastwise steam or motor vessels of 1,000 gross tons or over, while holding license as such master or first-class pilot; or,

(4) Two years' service as master or first-class pilot of Great Lakes or other lakes, bay, or sound towing vessels for license as chief mate of coastwise towing vessels of 750 gross tons or under; or,

(5) One year's service as a licensed master or 2 years' service as a licensed mate on ocean or coastwise steam or motor vessels of 250 gross tons or over engaged in the ocean or coastwise fisheries, for license as chief mate of coastwise freight or towing vessels of 1,000 gross tons or under; or,

(6) Five years' service in the deck department of any ocean or coastwise sail vessel of 100 gross tons or over, 2 years of such service shall have been as master of such vessels, for license as chief mate

of freight or towing vessels of 1,000 gross tons or under; or,

(7) Two years' service as first-class pilot, or 2 years' combined service as master and first-class pilot of steam or motor vessels of 1,000 gross tons or over, except ferry vessels, on the Great Lakes and other lakes, bays, and sounds, for license as chief mate of coastwise vessels on routes not exceeding 300 miles; or,

(8) Three years' service in the deck department of ocean or coastwise steam or motor vessels for license as chief mate of coastwise steam or motor vessels of not more than 500 gross tons.

§ 10.05-28 Mate of motor vessels engaged in offshore mineral and oil industries.

(a) The minimum service required to qualify an applicant for a license as mate of motor vessels of not more than 300 gross tons, operated in connection with the offshore mineral and oil industries, limited to a stated distance offshore on the continental shelf of the Atlantic, Gulf or Pacific Coast of the United States, as determined by the Commander of the District in which the license is issued, is:

(1) Two years' service as a licensed officer in charge of a deck watch on mineral or oil industry vessels, or

(2) One year's service as master or first-class pilot of inland steam or motor vessels plus six months in the deck department of coastwise vessels or mineral or oil industry vessels, or

(3) One year's service as a licensed master or two years' service as a licensed mate of ocean or coastwise uninspected vessels, or

(4) Three years' service in the deck department of ocean or coastwise steam or motor vessels, including mineral and oil industry vessels.

§ 10.05-29 Second mate of ocean steam or motor vessels.

(a) The minimum service required to qualify an applicant for license as second mate of ocean steam or motor vessels is listed in this paragraph. In order to be eligible for an unlimited ocean license, an applicant must have obtained his service on ocean or coastwise vessels of 1,000 gross tons or over.

(1) One year's service as officer in charge of a deck watch on ocean or coastwise steam or motor vessels while holding a license as third mate; or,

(2) Six months' service as second mate of coastwise steam or motor vessels; or,

(3) Five years' service in the deck department of ocean or coastwise steam or motor vessels of 1,000 gross tons or over, 2 years of which shall have been as boatswain or quartermaster while holding a certificate as able seaman; or,

(4) One year's service as first-class pilot of steam or motor vessels of 4,000 gross tons or over, except ferry vessels, on the Great Lakes or other lakes, bays, or sounds, together with 6 months' service in the deck department of ocean steam or motor vessels of 1,000 gross tons or over, while holding a license as such first-class pilot; or,

(5) Two years' service as assistant (junior officer of the watch) to the officer in charge of the watch on ocean steam or motor vessels, while holding a license as third mate of such vessels; or,

(6) Four years' service in the deck department of ocean or coastwise steam vessels of 200 gross tons or over, 1 year of such service shall have been as second mate of such sail vessels.

§ 10.05-31 Second mate of coastwise steam or motor vessels.

(a) The minimum service required to qualify an applicant for license as second mate of coastwise steam or motor vessels is:

(1) One year's service as officer in charge of a deck watch on ocean or coastwise steam or motor vessels while holding a license as third mate; or,

(2) Five years' service in the deck department of ocean or coastwise steam or motor vessels, 2 years of which shall have been as boatswain or quartermaster; or,

(3) One year's service as first-class pilot of steam or motor vessels of 2,500 gross tons or over, except ferry vessels, on the Great Lakes or other lakes, bays, or sounds, together with 6 months' service in the deck department of ocean or coastwise steam or motor vessels of 1,000 gross tons or over, while holding a license as such first-class pilot; or,

(4) Two years' service as assistant (junior officer of the watch) to the officer in charge of the watch on ocean steam or motor vessels, while holding a license as third mate of such vessels; or,

(5) One year's service as a licensed mate on ocean or coastwise steam or motor vessels of 150 gross tons or over engaged in the fisheries, for license as second mate of towing vessels.

§ 10.05-33 Third mate of ocean steam or motor vessels.

(a) The minimum service or training required to qualify an applicant for license as third mate of ocean steam or motor vessels is listed in this paragraph. In order to be eligible for an unlimited ocean license, an applicant must have obtained his service on ocean or coastwise vessels of 1,000 gross tons or over.

(1) Three years' service in the deck department of ocean or coastwise steam or motor vessels, 6 months of which shall have been as able seaman, boatswain, or quartermaster while holding a certificate as able seaman; or,

(2) Six months' service as third mate of coastwise steam or motor vessels; or,

(3) Graduation from:

(i) The U. S. Merchant Marine Academy (deck);

(ii) The deck class of a nautical schoolship approved by and conducted under rules prescribed by the Commandant and listed in Part 166 of Subchapter R (Nautical Schools) of this chapter;

(iii) The U. S. Naval Academy; or,

(iv) The U. S. Coast Guard Academy; or,

(4) Satisfactory completion of the prescribed course (deck) at a U. S. Maritime Service or other Government operated training school, approved by the Commandant, may be accepted as the equivalent of sea service up to a maximum of 4 months: *Provided*, The applicant has obtained the additional qualifying experience prior to enrollment; or,

(5) One year's service as second-class pilot of steam or motor vessels of 4,000 gross tons or over, except ferry vessels, on the Great Lakes or other lakes, bays, or sounds, together with 6 months' service in the deck department of ocean steam or motor vessels of 1,000 gross tons or over, while holding a license as such second-class pilot; or,

(6) Three years' service in the deck department of steam or motor vessels on the Great Lakes, other lakes, bays, or sounds, or rivers, together with 1 year's service in the deck department of ocean steam or motor vessels, 6 months of which shall have been as able seaman, boatswain, or quartermaster while holding a certificate as able seaman; or,

(7) Three years' service in the deck department of steam or motor vessels of 100 gross tons or over engaged in the ocean or coastwise fisheries, together with 6 months' service as able seaman, boatswain, or quartermaster on ocean steam or motor vessels, while holding a certificate as able seaman.

§ 10.05-35 Third mate of coastwise steam or motor vessels.

(a) The minimum service or training required to qualify an applicant for license as third mate of coastwise steam or motor vessels is:

(1) Three years' service in the deck department of ocean or coastwise steam or motor vessels, 6 months of which shall have been as able seaman; or,

(2) One year's service as second-class pilot of steam or motor vessels of 2,500 gross tons or over, except ferry vessels, on the Great Lakes or other lakes, bays, or sounds, together with 6 months' service in the deck department of ocean or coastwise steam or motor vessels of 1,000 gross tons or over, while holding a license as such second-class pilot; or,

(3) Two years' service in the deck department of steam or motor vessels on the Great Lakes or other lakes, bays, or sounds, together with 2 years' service in the deck department of ocean or coastwise steam or motor vessels, 6 months of which shall have been as able seaman; or,

(4) Two years' service in the deck department of steam or motor vessels of 100 gross tons or over engaged in the ocean or coastwise fisheries, or any sail vessel of 100 gross tons or over, together with 1 year's service in the deck department of ocean or coastwise steam or motor vessels, 6 months of which shall have been as able seaman; or,

(5) Three years' service in the deck department of ocean or coastwise steam, motor, or sail vessels of less than 100 gross tons, together with 1 year's service in the deck department of ocean or coast-

wise steam or motor vessels, 6 months of which shall have been as able seaman.

§ 10.05-37 Mate of inland or river steam or motor vessels.

The minimum service required to qualify an applicant for license as mate of Great Lakes, other lakes, bays, or sounds, or river steam or motor vessels is at least 2 years' service in the deck department of steam, motor, or sail vessels, or barge consorts, 6 months of which service shall have been on steam or motor vessels.

§ 10.05-39 Pilot.

(a) *General.* An applicant for an original license as pilot may be given credit for experience on motor vessels of a class not subject to inspection by the Coast Guard and not required to carry a licensed master or a licensed pilot.

(1) An applicant for an original pilot's license, endorsement as pilot or an extension of pilot's route shall furnish discharges, letters or other satisfactory documentary evidence, certifying to the names of the vessels, the periods of service, the dates and number of round trips made and the capacity in which the applicant served. Photostatic copies of such letters and documents may be accepted for filing with the application.

(b) *Professional requirements.* The minimum service required to qualify an applicant for license as pilot is:

(1) Three years' service in the deck department of ocean, coastwise, Great Lakes or bays, sounds and lakes, other than the Great Lakes, steam or motor vessels, of which 18 months shall have been as able seaman, or service in a capacity at least the equivalent of able seaman. Of the 18 months as able seaman, or equivalent capacity, at least 1 year shall have been on vessels operating on the waters of the class for which pilotage is desired in the capacity of quartermaster, wheelsman, able seaman or equivalent capacity, who stands regular watches at the wheel or in the pilot-house as part of his routine duties; and,

(i) 25 percent of such service shall have been obtained within the three years immediately preceding the date of application; and,

(ii) The required service shall include a minimum number of round trips over the route for which the applicant seeks license as pilot, as may be fixed by the Officer in Charge, Marine Inspection, having jurisdiction (experience on motorboats as defined by statutes may be accepted by the Officer in Charge, Marine Inspection, for license or endorsement as pilot, but such licenses or endorsements shall be limited to a gross tonnage commensurate with such experience, irrespective of any other license or endorsement held by the applicant); and

(iii) One of the required number of round trips shall have been made over the route within the 6 months immediately preceding the date of application; or,

(2) Three years' service in the deck department of any vessel of which at least 1 year shall have been on vessels operating on the waters of rivers while serving in the capacity of quartermaster, wheelsman or deckhand who stands watches at the wheel as part of his routine duties, for license as pilot of river routes. The provisions in subparagraph (1) (i) through (iii) of this paragraph are applicable to this subparagraph.

(3) Two years' service in the deck department of steam or motor vessels navigating canals and small lakes, such as the New York State Barge Canal and Seneca and Cayuga Lakes in the State of New York, 1 year of which shall have been within the 2 years immediately preceding the date of application, for license as pilot of steam and motor vessels of limited tonnage for the waters and/or routes on which the qualifying service was acquired.

(c) *Limitations.* The Officer in Charge, Marine Inspection, issuing a license or endorsement as pilot, shall impose suitable limitations commensurate with the past experience of the applicant, with respect to class of vessels for which valid, tonnage, route and waters.

§ 10.05-41 Pilot of tank vessels of not more than 150 gross tons.

All propelled tank vessels, regardless of length or tonnage, shall be under the command of a person duly licensed and since propelled vessels of less than 150 gross tons may be in command of a licensed pilot, the license of a candidate who successfully passes an examination for this purpose shall be endorsed as follows: "Pilot for tank vessels not more than ----- gross tons on the waters of -----" (the maximum to be inserted is not to exceed 150 gross tons and the waters covered as may be designated by the Officer in Charge, Marine Inspection).

§ 10.05-42 Endorsement of master's or mate's license as pilot or extension of pilot's route.

(a) A master or mate applying for endorsement of his license to act as pilot or a licensed pilot applying for an extension of route, shall make written application on Coast Guard Form CG-

866, with documentary evidence of experience acquired by a minimum number of round trips over the particular route or waters for which endorsement or extension of route is desired, as may be required by the Officer in Charge, Marine Inspection, having jurisdiction. One of the required number of round trips shall have been made within the 6 months immediately preceding the date of application. If the applicant is found qualified by experience and written examination as hereafter provided, the endorsement as pilot or extension of route shall be endorsed on his license: *Provided, however,* That upon waters of the United States newly opened to navigation, and where the only pilots obtainable are illiterate Indians or other natives, the fact that such persons can neither read nor write shall not be considered a bar to such Indians or other natives receiving extensions of route of licenses as pilots if they are otherwise qualified.

(b) The holder of a license as master or mate of ocean or coastwise vessels who has had recent satisfactory service under the authority of his license is eligible for examination for endorsement as pilot on any waters upon completing the number of round trips over the route required for his grade of license by the Officer in Charge, Marine Inspection, having jurisdiction, while serving in the capacity of quartermaster, wheelsman or able seaman who stands regular watches at the wheel as part of his routine duties. Experience as an observer, properly certified by the master and/or pilot of the vessel is also acceptable in such cases. An endorsement as pilot granted under these provisions shall be limited to the tonnage and class of vessels for which the holder's license as master or mate is valid except as provided in § 10.05-39(b) (1) (ii).

(c) When an application is made to any Officer in Charge, Marine Inspection, for an extension of route which is outside his jurisdiction he shall request the Officer in Charge, Marine Inspection, having jurisdiction to forward the necessary examination material for examining the applicant. The complete examination file of the applicant shall be returned to the Officer in Charge, Ma-

rine Inspection, having jurisdiction, who, if satisfied that the applicant is qualified and capable, shall grant the authority and advise the other Officer in Charge, Marine Inspection, to endorse the license accordingly.

§ 10.05-43 Examination for license as pilot.

(a) An applicant for an original license as pilot or initial endorsement of master's or mate's license as pilot shall be required to pass a satisfactory examination as to his knowledge of the subjects listed in this paragraph:

- (1) Rules of the Road.
- (2) Inland rules, applicable to route.
- (3) Local knowledge of winds, weather, tides, current, etc.
- (4) Chart navigation.
- (5) Aids to navigation.
- (6) Ship handling.

(7) Chart sketch of the route and waters applied for, showing courses, distances, shoals, aids to navigation, depths of water, and other important features of the route.

(8) General: Such further examination as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency.

(b) An applicant for extension of pilot's route shall be examined on the subjects in subparagraphs (1), (2), (7), and (8) in paragraph (a) of this section only.

§ 10.05-45 Examination for license as deck officer of ocean or coastwise steam, motor or sail vessels.

(a) An applicant for license as deck officer of either ocean or coastwise steam and motor vessels, or sail vessels of 100 gross tons or over, or master of steam and motor yachts, shall pass a satisfactory written examination as to his knowledge of the subjects listed in paragraph (b) of this section. However, if the license to be issued is limited on its face in a manner that would make any of the specific subjects unnecessary or superfluous, the examination should be amended accordingly. Examinations for licenses not incorporated in Table 10.05-45 (b) shall be of suitable scope and character to determine the applicant's proficiency.

(b) List of subjects required:

TABLE 10.05-45 (b)—SUBJECTS FOR DECK OFFICERS OF OCEAN OR COASTWISE STEAM OR MOTOR VESSELS

Subjects	Master				Chief mate		Second mate		Third mate		Mate—Limited mineral and oil industry
	Ocean	Coastwise	Yachts	Limited mineral and oil industry	Ocean	Coastwise	Ocean	Coastwise	Ocean	Coastwise	
1. Latitude by Polaris	X	X			X		X				
2. Latitude by meridian altitude method							Sun or star	Sun	Sun	Sun	
3. Fix or running fix	Any body	Sun or star	Any body		Any body	Sun or star	do	do	do		
4. Star identification (any method)	X	X	X		X	X	X	X	X	X	
5. Chart navigation	X	X	X	X	X	X	X	X	X	X	
6. Compass deviation	Any body	Sun or star	Sun		Sun or star	Sun or star	Sun or star	Sun	Sun	Sun	X
8. Middle latitude sailing			X				X	X	X	X	
9. Mercator sailing	X	X	X			X	X	X	X	X	
10. Great Circle sailing	X	X	X			X	X	X	X	X	
11. Plotting	X	X	X	X	X	X	X	X	X	X	X
12. Aids to navigation	X	X	X	X	X	X	X	X	X	X	X
13. Speed by revolutions	X	X	X	X	X	X	X	X	X	X	X
14. Fuel conservation	X	X	X	X	X	X	X	X	X	X	X
15. Instruments and accessories	X	X	X	X	X	X	X	X	X	X	X
16. Magnetism, deviation and compass compensation	X	X	X	X	X	X	X	X	X	X	X
17. Chart construction	X	X	X	X	X	X	X	X	X	X	X
18. Tides and currents	X	X	X	X	X	X	X	X	X	X	X
19. Ocean winds, weather and currents	X	X	X	X	X	X	X	X	X	X	X
20. Nautical astronomy and navigation definitions	X	X	X	X	X	X	X	X	X	X	X
21. International and inland rules of the road	X	X	X	X	X	X	X	X	X	X	X
22. Signaling by international code flags and flashing light; Lifesaving, storm and special signals.	X	X	X	X	X	X	X	X	X	X	X
23. Stability and ship construction	X	X	X	X	X	X	X	X	X	X	X
24. Seamanship	X	X	X	X	X	X	X	X	X	X	X
25. Cargo stowage and handling	X	X	X	X	X	X	X	X	X	X	X
26. Change in draft due to density	X	X	X	X	X	X	X	X	X	X	X
27. Determination of area and volume	X	X	X	X	X	X	X	X	X	X	X
28. Lifesaving apparatus and firefighting equipment	X	X	X	X	X	X	X	X	X	X	X
29. Ship sanitation	X	X	X	X	X	X	X	X	X	X	X
30. Rules and regulations for inspection of merchant vessels.	X	X	X	X	X	X	X	X	X	X	X
31. Laws governing marine inspection	X	X	X	X	X	X	X	X	X	X	X
32. Ship's business	X	X	X	X	X	X	X	X	X	X	X
33. Such further examination of a nonmathematical character as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency.	X	X	X	X	X	X	X	X	X	X	X

¹ Practical use of the magnetic compass. ² Lifesaving, storm and special signals. ³ Navigation definitions only.

(c) (1) Each applicant for an ocean or coastwise deck license, whether original or raise of grade, shall be required to pass practical tests in signalling. The examination in signalling will consist of an examination in the international flag code and Morse flashing. Candidates will be examined in Morse flashing in groups where practicable.

(2) Candidates shall be able to read a signal at sight, so far as to name the flags composing the hoist; know the use of the code pennant, numeral and substitute pennants, the meaning of all the single letter signals and the flags used to indicate the quarantine signals; be required to signal some word or words not included in the vocabulary of the code; and have a good knowledge of the distress signals. Candidates will be required to attain a speed of six words a minute in Morse flashing. The average length of a word is to be five letters. Candidates who wish to prove their higher proficiency may request to be tested at a minimum speed of ten words a minute in Morse flashing. Such candidates, if successful, will have the results of their examination reported on their official files.

(3) A candidate for license who fails in signalling, but passes in every other subject, will be considered to have failed the examination and shall be so reported; but he may at any time within the six months following his first attempt be reexamined in signalling only, and if he then passes he will be granted a license.

§ 10.05-46 Radar observer.

(a) Every applicant for an original license, raise of grade, or increase in

scope of license for service on ocean, coastwise, or Great Lakes vessels of 300 gross tons and over shall be required to demonstrate, by professional examination, his qualifications as a "radar observer."

(b) Applicants for licenses specified in paragraph (a) of this section shall be examined on the following aspects of the proper operation and utilization of marine radar equipment:

(1) Fundamentals of radar:

(i) How radar works.

(ii) Factors affecting the performance and accuracy of marine radar.

(iii) Description of the purpose and functions of the main components that comprise a typical marine radar installation.

(2) Operation and use of radar:

(i) The purpose and adjustment of controls.

(ii) The detection of malfunctioning, false and indirect echoes and other radar phenomena.

(iii) The effect of sea return and weather.

(iv) The limitations of radar resulting from design factors.

(v) Precautions to be observed in performing simple maintenance of radar equipment.

(vi) Range and bearing measurement.

(vii) Effect of size, shape, and composition of ship targets on echo.

(3) Interpretation and analysis of radar information:

(i) Determining the course and speed of another vessel.

(ii) Determining the time and distance of closest point of approach of a

crossing, meeting, overtaking or overtaken vessel.

(iii) Detecting changes of course and/or speed of another vessel after its initial course and speed have been established.

(iv) Factors to consider when determining change in course and/or speed of own vessel to prevent collision on the basis of radar observation of another vessel or vessels.

(4) Plotting (any method that is graphically correct may be used):

(i) The principles and methods of plotting relative and true motion.

(ii) Practical plotting problems.

(c) An applicant for a license who fails the "radar observer" examination but passes in every other subject will be considered as having failed the license examination, but he may at any time within 6 months of his failure be reexamined in the "radar observer" subject only; and, if he then passes, he may be granted a license.

(d) A certificate of successful completion of a course of instruction of a Maritime Administration or other Government operated school, approved by the Commandant, is acceptable evidence of the holder's qualification as "radar observer" without the examination specified in paragraph (b) of this section.

(1) The "Radar Observer Schools" listed in this subparagraph are approved. The approval for a particular school shall be effective for all certificates issued on or after the date of the first class held, as set forth in this subparagraph, and will continue in effect until this ap-

proval is suspended, canceled, or modified by proper authority.

(i) Maritime Administration Radar Observer School, c/o Atlantic Coast Director, 45 Broadway, New York, N.Y., 10004. Physical location: 45 Broadway, New York, N.Y., 10004. First class held: November 18, 1957.

(ii) Maritime Administration Radar Observer School, c/o Pacific Coast Director, U.S. Department of Commerce, Maritime Administration, A50 Golden Gate Ave., Box 36073, San Francisco, Calif., 94102. Physical Location: Fort Mason, San Francisco Army Terminal. First class held: March 3, 1958.

(iii) Maritime Administration Radar Observer School, c/o Gulf Coast Director, Masonic Temple Building, 333 St. Charles Street, New Orleans, La., 70100. Physical location, New Orleans Army Terminal. First class held: July 14, 1958.

(2) The course of instruction in the proper operation and utilization of marine radar equipment is approved as given at the U.S. Merchant Marine Academy, Kings Point, N.Y., 11754. This approval shall be effective for all certificates issued to the deck cadets of the U.S. Merchant Marine Academy and attesting to the successful completion of the course in the proper operation and utilization of marine radar equipment on or after July 17, 1959, and will continue in effect until this approval is suspended, canceled, or modified by proper authority.

(3) The course of instruction in the proper operation and utilization of marine radar equipment is approved as given at the U.S. Army Transportation School, Fort Eustis, Va., 24437. This approval shall be effective for all certificates issued to men attesting to the successful completion of the course in the proper operation and utilization of marine radar equipment on or after June 6, 1960, and will continue in effect until this approval is suspended, canceled, or modified by proper authority.

(4) The course of instruction in the proper operation and utilization of marine radar equipment is approved as given at the State University of New York, Maritime College, Fort Schuyler, New York, N.Y., 10065. This approval shall be effective for all certificates issued to the deck cadets of the New York Maritime College which attest to the successful completion of the course in the proper operation and utilization of marine radar equipment on or after November 17, 1960, and will continue in effect until this approval is suspended, canceled or modified by proper authority.

(5) The course of instruction in the proper operation and utilization of marine radar equipment is approved as given at the Maine Maritime Academy, Castine, Maine, 04421. This approval shall be effective for all certificates issued to the deck cadets of the Maine Maritime Academy which attest to the successful completion of the course of instruction in the proper operation and utilization of marine radar equipment on or after July 2, 1963, and will continue in effect until this approval is suspended, can-

celed, or modified by the proper authority.

(Sec. 3, 54 Stat. 341, as amended, sec. 2, 68 Stat. 484; 46 U.S.C. 1333, 239b)

§ 10.05-47 Examination for license as master of Great Lakes steam and motor vessels.

(a) An applicant for license as master of Great Lakes steam or motor vessels shall be required to pass a satisfactory examination as to his knowledge of the subjects listed in this paragraph:

- (1) Rules of the Road.
- (2) Deviation by azimuth of the sun.
- (3) Deviation by azimuth of Polaris.
- (4) Construction of a deviation table by any method:
 - (i) Azimuth of sun or Polaris.
 - (ii) Equidistant bearings of a fixed object.
 - (iii) Ranges.
 - (iv) Comparison with a gyro or magnetic compass whose deviation is known.
 - (5) Distance off by bearings and run.
 - (6) Distance off by distance-finding stations.
 - (7) Distance off by visibility of lights.
 - (8) Speed by revolutions and by observation.
 - (9) Instruments and accessories used in navigation.
 - (10) Magnetism, deviation, and compass compensation.
 - (11) Chart navigation and piloting.
 - (12) Aids to navigation.
 - (13) Winds and weather.
 - (14) Signals; storm, wreck, distress, and special.
 - (15) Stability and ship construction.
 - (16) Cargo stowage and handling.
 - (17) Seamanship.
 - (18) Temporary repairs to hull and equipment.
 - (19) Drills and lifesaving apparatus.
 - (20) Ship sanitation; Rules and Regulations for Vessel Inspection, and Navigation Laws of the United States.
 - (21) Ship's business.
 - (22) General.
 - (23) Practical chart work.
 - (24) Such further examination of a nonmathematical character as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency.

§ 10.05-49 Examination for license as master of bays, sounds, and lakes other than the Great Lakes steam and motor vessels.

(a) An applicant for license as master of bays, sounds, and lakes other than the Great Lakes steam or motor vessels shall be required to pass a satisfactory examination as to his knowledge of the subjects listed in this paragraph:

- (1) Rules of the Road applicable to the waters desired.
- (2) Distance off by bearings and run.
- (3) Speed by revolutions and by observation of landmarks.
- (4) Chart navigation and piloting.
- (5) Aids to navigation.
- (6) Winds, weather, and current.
- (7) Signals; storm, wreck, distress, and special.
- (8) Stability and ship construction.
- (9) Cargo stowage and handling.

(10) Seamanship.

(11) Temporary repairs to hull and equipment.

(12) Drills and lifesaving apparatus.

(13) Ship sanitation; Rules and Regulations for Vessel Inspection, and Navigation Laws of the United States.

(14) Ship's business.

(15) General.

(16) Practical chart work.

(17) Such further examination of a nonmathematical character as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency.

§ 10.05-51 Examination for license as master of river steam or motor vessels.

(a) An applicant for license as master of river steam or motor vessels shall be required to pass a satisfactory examination as to his knowledge of the subjects listed in this paragraph:

- (1) Rules of the Road.
- (2) Shiphandling and navigation of river vessels.
- (3) Instruments and accessories.
- (4) Aids to navigation.
- (5) Seamanship.
- (6) Ship construction.
- (7) Cargo stowage and handling.
- (8) Temporary repairs to hull and equipment.
- (9) Drills; lifesaving and firefighting equipment and procedures.
- (10) Rules and regulations for vessel inspection and navigation laws of the United States; ship sanitation.
- (11) Mathematics.
- (12) General.
- (13) Such further examination of a nonmathematical character as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency.

§ 10.05-53 Examination for license as master of ferry steam or motor vessels.

An applicant for license as master of ferry steam or motor vessels on either the Great Lakes, other lakes, bays, and sounds, or rivers shall be required to pass satisfactorily an examination of such length and scope as will satisfy the Officer in Charge, Marine Inspection, that the applicant is capable of handling and navigating such vessels.

§ 10.05-55 Examination for license as master or pilot of yachts on the Great Lakes, other lakes, bays, and sounds, or rivers.

An applicant for license as master or pilot of yachts on either the Great Lakes, other lakes, bays, and sounds, or rivers, shall be required to pass a satisfactory examination as to his knowledge in handling such vessels, and his familiarity with the lights, lighthouses, channels, buoys, obstructions, courses, and distances between certain points in the waters for which he makes application for license. He shall also be examined regarding his knowledge of the Rules of the Road for such waters, the running and anchor lights, fog signals, the use of the lead, signal bells between engine-room and pilothouse, the General Rules

and Regulations for Vessel Inspection, and such further examination of a non-mathematical character as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency.

§ 10.05-57 Examination for license as master of passenger barges on the Great Lakes, other lakes, bays, and sounds, or rivers.

An applicant for license as master of passenger barges on the Great Lakes, other lakes, bays, and sounds, or rivers shall be required to pass satisfactorily an examination of such length and scope as will satisfy the Officer in Charge, Marine Inspection, that the applicant is capable of handling the class of vessel for which he desires a license.

§ 10.05-59 Examination for license as mate of inland or river steam or motor vessels.

An applicant for license as mate of inland or river steam or motor vessels shall be required to pass a satisfactory examination as to his knowledge, experience, and skill in stowage and cargo handling, the operation and handling of fire apparatus, the launching and handling of lifeboats, his knowledge of life preservers and the method of adjusting them, his ability to manage the crew and direct and advise the passengers in case of emergency, his general familiarity with his duties in maintaining discipline and protecting the passengers, and such further examination of a non-mathematical character as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency.

§ 10.05-61 Evaluation of experience not listed.

When an applicant presents evidence of service or experience which does not meet the specific requirements of the regulations in this part, but which in the opinion of the Officer in Charge, Marine Inspection, is a reasonable equivalent thereto, the application for license with supporting data shall be submitted to the Commandant for evaluation, together with the recommendation of the Officer in Charge, Marine Inspection.

Subpart 10.10—Professional Requirements for Engineer Officers' Licenses (Inspected Vessels)

AUTHORITY: The provisions of this Subpart 10.10 interpret or apply R.S. 4417a, as amended, 4426, as amended, 4427, as amended, 4438, as amended, 4438a, as amended, 4441, as amended, 4443, as amended, 4445, as amended, 4447, as amended, sec. 2, 29 Stat. 188, as amended, sec. 1, 34 Stat. 1411, as amended, secs. 1, 2, 1544, 1545, as amended, sec. 3, 70 Stat. 152, and sec. 3, 68 Stat. 675; 46 U.S.C. 381a, 404, 405, 224, 224a, 229, 230, 231, 233, 225, 237, 367, 390b, 50 U.S.C. 198. Treasury Department Orders 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-20, June 18, 1956, 21 F.R. 4894.

§ 10.10-1 No restriction as to waters on engineer's licenses.

(a) Except as otherwise specified in this part no engineer's license issued shall be restricted as to the waters upon which the engineer may serve, except that such restrictions on any license, when presented for renewal, shall not be changed without the licensee's consent.

(b) The holder of an engineer's license which is restricted as to waters may serve in the capacity and within the limitations in the license upon other waters without special endorsement as follows:

(1) "Ocean." This includes coastwise waters; Great Lakes; bays, sounds, and lakes other than the Great Lakes; and rivers.

(2) "Coastwise." This includes the Great Lakes; bays, sounds, and lakes other than the Great Lakes; and rivers.

(3) "Great Lakes." This includes bays, sounds, and lakes other than the Great Lakes, and rivers.

(4) "Bays, sounds, and lakes other than the Great Lakes." This includes rivers.

(5) "Inland waters." This includes the Great Lakes; bays, sounds, and lakes other than the Great Lakes; and rivers.

(6) "Rivers." This does not include any other type of waters.

§ 10.10-3 Grade and type of engineer licenses issued and limitations placed thereon.

(a) Licenses in the grades of chief engineer, first assistant engineer, second assistant engineer, and third assistant engineer authorizing service on steam

vessels or on motor vessels or on steam and motor vessels, shall be issued to applicants who qualify therefor.

(b) Engineer's licenses of all grades and types may be subject to such horsepower limitation as the Officer in Charge, Marine Inspection, shall deem appropriate. The horsepower limitations to be placed on a license shall be based on the applicant's qualifying experience; however, in no case shall an applicant's license be limited to a lower horsepower than the highest horsepower on which 25 percent or more of his experience was obtained. The applicant whose qualifying service has all been on Coast Guard inspected vessels of 4,000 horsepower or over shall be considered eligible for an engineer's license of unlimited horsepower.

§ 10.10-4 Examination for license as engineer officer of steam or motor vessels.

(a) An applicant for license as engineer officer of either steam or motor vessels shall pass a satisfactory written examination as to his knowledge of the subjects listed in paragraph (b) of this section. However, if the license to be issued is limited on its face in a manner that would make any of the specific subjects unnecessary or superfluous, the examination shall be amended accordingly. Examinations for any license not incorporated in Table 10.10-4(b) shall be of suitable scope and character to determine the applicant's proficiency.

(b) List of subjects required:

TABLE 10.10-4(b)—SUBJECTS FOR ENGINEER OFFICERS' LICENSES OF STEAM OR MOTOR VESSELS

Subjects	Steam				Motor			
	Chief engineer		Assistant engineer		Chief engineer		Assistant engineer	
	Over 2,000 hp	2,000 hp and less	Over 2,000 hp	2,000 hp and less	Over 2,000 hp	2,000 hp and less	Over 2,000 hp	2,000 hp and less
<i>General</i>								
1. Pumps and compressors.....	X	X	X	X	X	X	X	X
2. Heat exchangers.....	X	X	X	X	X	X	X	X
3. Propellers and shafting.....	X	X	X	X	X	X	X	X
4. Steering and miscellaneous machinery.....	X	X	X	X	X	X	X	X
5. Valves—reducing, control, etc.....	X	X	X	X	X	X	X	X
6. Condensers, air ejectors and vacuum.....	X	X	X	X				
7. Engineering definitions and principles.....	X	X	X	X	X	X	X	X
8. Instruments.....	X	X	X	X	X	X	X	X
9. Lubrication.....	X	X	X	X	X	X	X	X
10. Inspection.....	X	X	X	X	X	X	X	X
11. Mathematics.....	X	X	X	X	X	X	X	X
12. Sketch.....		X	X	X		X	X	X
13. Three dimensional drawing.....	X				X			
14. Ship construction and repair.....	X	X	X	X	X	X	X	X
<i>Steam Engines</i>								
21. Reciprocating—construction, operation, maintenance.....	X	X	X	X				
22. Turbine—construction, operation, maintenance.....	X	X	X	X				
23. Reduction gear and miscellaneous.....	X	X	X	X				
24. Steam governors.....	X	X	X	X				

See footnotes at end of table.

TABLE 10.10-4(b)—SUBJECTS FOR ENGINEER OFFICERS' LICENSES OF STEAM OR MOTOR VESSELS—Continued

Subjects	Steam				Motor			
	Chief engineer		Assistant engineer		Chief engineer		Assistant engineer	
	Over 2,000 hp	2,000 hp and less	Over 2,000 hp	2,000 hp and less	Over 2,000 hp	2,000 hp and less	Over 2,000 hp	2,000 hp and less
Motor								
11. Construction, operation, maintenance.....					X	X	X	X
12. Operating principles.....					X	X	X	X
13. Fuel injection.....					X	X	X	X
14. Air compressors.....					X	X	X	X
15. Operation and maintenance of auxiliary diesel engines.....	X	X	X	X				
16. Air—starting, combustion.....					X	X	X	X
17. Governors.....								
Boilers								
11. Watertube—construction, operation, maintenance.....	X	X	X	X	X		X	
12. Firetube—construction, operation, maintenance.....	X	X	X	X	X		X	
13. General—construction, operation, maintenance.....	X	X	X	X	X		X	
14. Safety valves.....	X	X	X	X	X		X	
15. Corrosion and feedwater.....	X	X	X	X	X		X	
16. Fuels and combustion.....	X	X	X	X	X		X	
Electricity								
11. Direct current.....	X	X	X	X	X	X	X	X
12. Alternating current.....	X	X	X	X	X	X	X	X
13. General—switchboards, controls, wiring.....	X	X	X	X	X	X	X	X
14. Storage batteries.....	X	X	X	X	X	X	X	X
15. Electric drive.....	X	X	X	X	X	X	X	X
16. Problems.....	X	X	X	X	X	X	X	X
Refrigeration								
11. Freon—construction, operation, maintenance.....	X		X		X		X	
12. Definitions and principles.....	X		X		X		X	
Engineering Safety								
11. Fire prevention.....	X	X	X	X	X	X	X	X
12. Fire equipment.....	X	X	X	X	X	X	X	X
13. Fire fighting.....	X	X	X	X	X	X	X	X
14. Respiratory apparatus and emergency equipment.....	X	X	X	X	X	X	X	X
15. Casualty and damage control.....	X	X	X	X	X	X	X	X
16. Rules and regulations.....	X	X	X	X	X	X	X	X
17. Safe handling of inflammable and combustible liquids.....	X	X	X	X	X	X	X	X

¹ Each candidate will receive a minimum of four mathematical questions which shall be graded with the "general" subject, however, a minimum grade of 70 percent shall be required for mathematics.

² A candidate for license limited to towing or ferry vessels shall not be examined in this subject.

(c) Each applicant for an original or raise in grade of license as engineer of steam vessels of over 2,000 horsepower shall be required to demonstrate his ability to analyze boiler water. When conditions permit, the test shall be performed by chemical analysis of a water sample.

§ 10.10-5 Removal of restriction as to waters on an engineer's license.

Upon renewal or at his request, any engineer who holds a license restricted as to waters shall be allowed the choice of accepting a limitation as to horsepower in lieu of the restriction as to waters. The horsepower limitation shall be determined by the Officer in Charge, Marine Inspection, in accordance with the applicant's experience. The licensee shall be required to agree in writing to such conditions of renewal before the issuance of the license requested.

§ 10.10-6 Raising and removing horsepower limitations.

(a) Applications for a change in horsepower limitation shall be accom-

panied by a letter of recommendation from the vessel owner, operator or chief engineer.

(b) Notwithstanding the provisions of § 10.02-15(c) of this part, changes in horsepower limitations based on service required by paragraph (c) of this section may be granted without further written examination providing the Officer in Charge, Marine Inspection, in whose office the applicant's previously written examination is filed, considers said examination is satisfactory for the higher license.

(c) The following service on vessels of 4,000 horsepower or over will be considered qualifying, insofar as service is concerned, for the raising or removing of horsepower limitations placed on engineer licenses:

(1) Twelve months' service in the highest grade licensed: removal of all horsepower limitations.

(2) Six months' service in any licensed capacity other than the highest grade for which licensed: removal of all horsepower limitations for the grade in which

service is performed and raise the next higher grade license to the horsepower of the vessel on which service was performed.

(3) Twelve months' service as oiler or Junior Engineer holding a license as Third Assistant Engineer: removal of all horsepower limitations on Third Assistant Engineer's license.

(4) Six months' service as oiler or Junior Engineer holding a license as Second Assistant Engineer: removal of all horsepower limitations on Third Assistant Engineer's license.

§ 10.10-7 Conversion of licenses from gross tonnage to horsepower limitations upon renewal.

(a) Steam or motor engineer's licenses issued for any gross tons on specified waters shall be converted to any horsepower for the same waters, when renewed by an Officer in Charge, Marine Inspection.

(b) Upon renewal of any engineer's license which is limited as to gross tonnage the tonnage shall be converted to horsepower on the new license in the ratio of 3 to 4 (i. e.: 750 gross tons to 1,000 horsepower), except in those cases where an applicant has obtained experience on vessels of greater horsepower than the above ratio would entitle him. In such cases a license of greater horsepower commensurate with the experience obtained may be issued.

§ 10.10-9 Chief engineer; steam vessels.

(a) The minimum service required to qualify an applicant for license as chief engineer of steam vessels is:

(1) One year's service as first assistant engineer of steam vessels; or,

(2) Two years' service as second assistant or junior first assistant engineer in charge of a watch on steam vessels while holding a license as first assistant engineer of steam vessels; or,

(3) While holding a license as chief engineer of motor vessels, either:

(i) Six months' service as first assistant engineer of steam vessels;

(ii) Six months' service as observer chief engineer on steam vessels; or,

(iii) One year's service as oiler, water-tender, or junior engineer of steam vessels.

§ 10.10-11 Chief engineer; motor vessels.

(a) The minimum service required to qualify an applicant for license as chief engineer of motor vessels is:

(1) One year's service as first assistant engineer of motor vessels; or,

(2) Two years' service as second assistant or junior first assistant engineer in charge of a watch on motor vessels while holding a license as first assistant engineer of motor vessels; or,

(3) While holding a license as chief engineer of steam vessels, either:

(i) Three months' service as first assistant engineer of motor vessels;

(ii) Three months' service as observer chief engineer on motor vessels; or,

(iii) Six months' service as oiler or junior engineer of motor vessels.

§ 10.10-13 First assistant engineer; steam vessels.

(a) The minimum service required to qualify an applicant for license as first assistant engineer of steam vessels is:

(1) One year's service as second assistant engineer of steam vessels; or,

(2) Two years' service as third assistant or junior second assistant engineer in charge of a watch on steam vessels, while holding a license as second assistant engineer of steam vessels; or,

(3) While holding a license as first assistant engineer of motor vessels, either:

(i) Six months' service as second assistant engineer of steam vessels;

(ii) Six months' service as observer first assistant engineer on steam vessels; or,

(iii) One year's service as oiler, watertender, or junior engineer of steam vessels; or,

(4) Three years' service as oiler, watertender, or fireman on steam vessels for a license as first assistant engineer of steam towing or ferry vessels of not more than 2,000 horsepower; or,

(5) While holding a license as third assistant engineer of steam vessels of any horsepower, three months' service as third assistant engineer or observer first assistant engineer on steam vessels for a license as first assistant engineer of steam towing or ferry vessels of not over 2,000 horsepower; or,

(6) Three years' service as oiler, watertender or fireman on steam vessels for a license as first assistant engineer of steam vessels of not more than 1,000 horsepower.

§ 10.10-15 First assistant engineer; motor vessels.

(a) The minimum service required to qualify an applicant for license as first assistant engineer of motor vessels is:

(1) One year's service as second assistant engineer of motor vessels; or,

(2) Two years' service as third assistant engineer or junior second assistant engineer in charge of a watch on motor vessels, while holding a license as second assistant engineer of motor vessels; or,

(3) While holding a license as first assistant engineer of steam vessels, either:

(i) Three months' service as second assistant engineer of motor vessels;

(ii) Three months' service as observer first assistant engineer on motor vessels; or,

(iii) Six months' services as oiler or junior engineer of motor vessels; or,

(4) Three years' service as oiler or fireman on motor vessels for a license as first assistant engineer of motor towing or ferry vessels of not more than 2,000 horsepower; or,

(5) While holding a license as third assistant engineer of motor vessels of any horsepower, three months' service as third assistant engineer or observer first assistant engineer on motor vessels for a license as first assistant engineer of motor towing or ferry vessels of not over 2,000 horsepower; or,

(6) Three years' service as oiler or fireman on motor vessels for a license as

first assistant engineer of motor vessels of not more than 1,000 horsepower .

§ 10.10-17 Second assistant engineer; steam vessels.

(a) The minimum service required to qualify an applicant for license as second assistant engineer of steam vessels is:

(1) One year's service as engineer in charge of a watch, while holding a license as third assistant engineer of steam vessels; or,

(2) Two years' service as assistant engineer to the engineer in charge of a watch, while holding a license as third assistant engineer of steam vessels; or,

(3) Five years' service in the engine department of steam or motor vessels, 1 year of this required service may have been on motor vessels; 4 years and 6 months of which must have been as a qualified member of the engine department, 2 years and 6 months of which must have been as fireman, oiler, watertender, or junior engineer on steam vessels; or,

(4) While holding a license as second assistant engineer of motor vessels, either:

(i) Six months' service as third assistant engineer of steam vessels;

(ii) Six months' service as an observer second assistant engineer on steam vessels; or,

(iii) One year's service as oiler, watertender, or junior engineer of steam vessels.

§ 10.10-19 Second assistant engineer; motor vessels.

(a) The minimum service required to qualify an applicant for license as second assistant engineer of motor vessels is:

(1) One year's service as engineer in charge of a watch, while holding a license as third assistant engineer of motor vessels; or,

(2) Two years' service as assistant engineer to the engineer in charge of a watch, while holding a license as third assistant engineer of motor vessels; or,

(3) Five years' service in the engine department of motor or steam vessels, 1 year of this required service may have been on steam vessels; 4 years and 6 months of which must have been as a qualified member of the engine department, 2 years and 6 months of which must have been as oiler or junior engineer on motor vessels; or,

(4) While holding a license as second assistant engineer of steam vessels, either:

(i) Three months' service as third assistant engineer of motor vessels;

(ii) Three months' service as observer second assistant engineer on motor vessels; or,

(iii) Six months' service as oiler or junior engineer of motor vessels.

§ 10.10-21 Third assistant engineer; steam vessels.

(a) The minimum service required to qualify an applicant for license as third assistant engineer of steam vessels is:

(1) Three years' service in the engine department of steam or motor vessels, one-third of this required service may

have been on motor vessels; 2 years and 6 months of which must have been as a qualified member of the engine department, 1 year and 6 months of which must have been as fireman, oiler, watertender or junior engineer on steam vessels; or,

(2) Three years' service as an apprentice to the machinist trade engaged in the construction or repair of marine, locomotive, or stationary engines together with 1 year's service in the engine department of steam vessels as oiler, watertender, or junior engineer, one-third of such service may have been on motor vessels; or,

(3) Graduation from:

(i) The U. S. Merchant Marine Academy (engineering);

(ii) The engineering class of a nautical schoolship approved by and conducted under rules prescribed by the Commandant and listed in Part 166 of Subchapter R (Nautical Schools) of this chapter;

(iii) The U. S. Naval Academy; or,

(iv) The U. S. Coast Guard Academy; or,

(4) Satisfactory completion of the prescribed course (engineering) at a U. S. Maritime Service or other Government operated training school approved by the Commandant may be accepted as the equivalent of sea service up to a maximum of four months, provided the applicant has obtained the additional qualifying experience prior to enrollment; or,

(5) Graduation from the marine engineering course of a duly recognized school of technology together with 3 months' service in the engine department of steam vessels, one-third of such service may have been on motor vessels; or,

(6) Graduation from the mechanical or electrical engineering course of a duly recognized school of technology together with 6 months' service in the engine department of steam vessels, one-third of such service may have been on motor vessels; or,

(7) One year's service as oiler, watertender, or junior engineer on steam vessels while holding a license as third assistant engineer of motor vessels.

§ 10.10-23 Third assistant engineer; motor vessels.

(a) The minimum service required to qualify an applicant for license as third assistant engineer of motor vessels is:

(1) Three years' service in the engine department of motor or steam vessels, one-third of this required service may have been on steam vessels; 2 years and 6 months of which must have been as a qualified member of the engine department, 1 year and 6 months of which must have been as oiler or junior engineer on motor vessels; or,

(2) Three years' service as an apprentice to the machinist trade engaged in the construction or repair of marine, locomotive, or stationary engines together with 1 year's service in the engine department of motor vessels as oiler or junior engineer, one-third of such service may have been on steam vessels; or,

(3) Graduation from:

(i) The U. S. Merchant Marine Academy (engineering);

(ii) The engineering class of a nautical schoolship approved by and con-

ducted under rules prescribed by the Commandant and listed in Part 166 of Subchapter R (Nautical Schools) of this chapter;

- (iii) The U. S. Naval Academy; or,
- (iv) The U. S. Coast Guard Academy;

or

(4) Satisfactory completion of the prescribed course (engineering) at a U. S. Maritime Service or other Government operated training school approved by the Commandant may be accepted as the equivalent of sea service up to a maximum of 4 months, provided the applicant has obtained the additional qualifying experience prior to enrollment;

or,

(5) Graduation from the marine engineering course of a duly recognized school of technology together with 3 months' service in the engine department of motor vessels, one-third of such service may have been on steam vessels;

or,

(6) Graduation from the mechanical or electrical engineering course of a duly recognized school of technology together with 6 months' service in the engine department of motor vessels, one-third of such service may have been on steam vessels; or,

(7) Six months' service as oiler or junior engineer on motor vessels while holding a license as third assistant engineer of steam vessels.

§ 10.10-25 Engineers of motor vessels operating in Puerto Rican and Hawaiian waters.

(a) An applicant for an engineer's license of seagoing vessels propelled by internal combustion engines navigating exclusively between ports in the Hawaiian Islands, or navigating exclusively between ports of the Island of Puerto Rico and/or the Virgin Islands, shall submit with his application statements duly executed and certified by reputable citizens qualified to judge the character and ability of the applicant. The Officer in Charge, Marine Inspection, shall make a diligent inquiry as to the applicant's character and merits and, if satisfied by the oral examination or practical demonstration, and the proof of requisite knowledge and skill offered, the Officer in Charge, Marine Inspection, shall issue the license. No certificate from the United States Public Health Service based upon the subject of ship sanitation and first aid shall be required of such applicant.

(b) An applicant for an engineer's license of motor vessels operating exclusively in Puerto Rican waters or exclusively in Hawaiian waters shall present evidence of a minimum of 3 years' service on such vessels.

§ 10.10-27 Service as engineroom watch electrician or refrigeration watch engineer.

An applicant for a raise of grade of engineer's license for steam or motor vessels may substitute service as engineroom watch electrician on electric drive steam or motor vessels or refrigeration watch engineer for other service required. The service shall be accepted on the basis of 2 months' service as watch electrician

or refrigeration watch engineer to count as 1 month of required service. Such service shall not be substituted for more than one-half the service required on a license. This service as engineroom watch electrician or refrigeration watch engineer must have been acquired while the applicant was holding the license which is to be raised in grade.

§ 10.10-29 Evaluation of experience not listed.

When an applicant presents evidence of service or experience which does not meet the specific requirements of the regulations in this part, but which in the opinion of the Officer in Charge, Marine Inspection, is a reasonable equivalent thereto, the application for license with supporting data shall be submitted to the Commandant for evaluation, together with the recommendation of the Officer in Charge, Marine Inspection.

Subpart 10.13—Licensing of Radio Officers

AUTHORITY: The provisions of this Subpart 10.13 interpret or apply secs. 1-8, 62 Stat. 232-234; 46 U.S.C. 229a-229h. Treasury Department Order 120, July 31, 1950, 15 F.R. 6521. Other statutory provisions interpreted or applied are cited to text in parentheses.

§ 10.13-1 Applicability of laws.

(a) The provisions of Title 46, U.S. Code, sections 229a to 229h provide that radiotelegraph operators shall be licensed officers.

(b) The regulations in this subpart implement the provisions in Title 46, U.S. Code, sections 229a to 229h, and provide for the issuance to qualified applicants of licenses as radio officers subject to all of the conditions provided in law.

§ 10.13-3 Definitions.

(a) *License.* Where the word "license" appears throughout this subpart it shall be construed as meaning a license issued by the Coast Guard, unless indicated otherwise.

(b) *Original license.* The first license issued to a radiotelegraph operator by the Coast Guard shall be considered an original license, when the records of the Coast Guard show no previous issue to such person.

§ 10.13-5 General provisions respecting all licenses issued.

(a) Applicants for licenses, issued in accordance with this subpart, are charged with the duty of establishing to the satisfaction of the Coast Guard that they possess all of the qualifications necessary, such as, age, experience, character and citizenship, before they shall be entitled to be issued licenses. Until an applicant meets this mandatory requirement, he is not entitled to be licensed to serve as an officer on a vessel of the United States. No person who has been convicted by court-martial of desertion or treason in time of war, or has lost his nationality for any of the other reasons listed in 8 U.S.C. 1481, is eligible for a license. Neither is a person eligible for a license, who has been convicted by a court of record of a violation of the narcotic drug laws of the United States, the District of

Columbia, or any State or Territory of the United States, within ten years prior to the date of filing the application; or who, unless he furnishes satisfactory evidence that he is cured, has ever been the user of or addicted to the use of a narcotic drug.

(b) After application to an Officer in Charge, Marine Inspection, any person who is found qualified under the requirements set forth in this subpart shall be issued an appropriate license valid for a term of five (5) years, provided he continues to hold a valid first- or second-class radiotelegraph operator's license issued by the Federal Communications Commission.

(c) Every person to whom a license is issued shall place his signature and left thumbprint thereon.

(d) Every person who receives a license shall make oath before an Officer in Charge, Marine Inspection, or commissioned officer of the Coast Guard authorized to administer oaths under 10 U.S.C. 936 or 14 U.S.C. 636, to be recorded upon his official file, that he will faithfully and honestly, according to his best skill and judgment, without concealment or reservation, perform all the duties required of him by law.

(Sec. 2, 64 Stat. 484; 46 U.S.C. 239b. Treasury Department Order 167-9, August 3, 1954, 19 F.R. 5195)

§ 10.13-7 Citizenship and age requirements for all licenses issued.

(a) No license shall be issued to any person who is not a United States citizen. An applicant claiming to be a citizen of the United States shall furnish documentary evidence of his citizenship. Acceptable evidence of citizenship is described in § 10.02-5.

(b) Any citizen who has attained the age of 19 years and is qualified in all other respects shall be eligible for a license.

§ 10.13-9 Evidence of professional competence for all licenses issued.

Each applicant for a license must present to the Officer in Charge, Marine Inspection, at the time of making application his currently valid first- or second-class radiotelegraph operator's license issued by the Federal Communications Commission.

§ 10.13-13 General requirements for original licenses.

(a) *First aid certificate.* No candidate for original license shall be qualified until he presents a certificate from the United States Public Health Service that he has passed a satisfactory examination based on the contents of "The Ship's Medicine Chest and First Aid at Sea," or other manual arranged for the purpose and having the approval of the United States Public Health Service.

(b) *Written application.* (1) The Officers in Charge, Marine Inspection, shall require all applicants for original licenses to make written applications upon Coast Guard Form CG-866.

(2) This application shall be submitted in duplicate. The applicant shall also furnish two unmounted, dull finish photographs, 2 inches by 1½

inches, of passport type taken within 1 year of the date of application. Photographs shall show the full face, at least 1 inch in height, with the head uncovered, and shall be a satisfactory likeness of the applicant. The issuing officer shall affix a photograph to each of the applications and impress his official seal partly over the photograph, after the applicant has in his presence signed the applications.

(3) The applicant shall place his left thumbprint on each of the applications.

(4) The applicant shall enter on the application form the number, class, and date of issuance of his currently valid Federal Communications Commission license.

(5) The applicant shall make and subscribe to an oath or affirmation, before the issuing officer, to the truth of all the statements set forth in his application. Any applicant who shall make or subscribe to any oath or affirmation on the application form and knowing the same to be false shall be deemed guilty of perjury.

(c) *Evidence of employment.* Applicants for licenses must present to the Officers in Charge, Marine Inspection, at the time of making application evidence that they are going to sea or expect to go to sea. This evidence shall be in the form of one of the following and shall be entered on the application form:

(1) A currently valid certificate of service as radio operator or merchant mariner's document endorsed as radio operator.

(2) One or more certificates of discharge showing service as radio operator on a merchant vessel. Evidence of service on United States Government vessels or foreign vessels is acceptable.

(3) An applicant for a license who has not served as radio operator aboard a vessel must present satisfactory proof that he has a commitment of employment as a radio operator on a United States merchant vessel. This proof shall be in the form of a letter and shall be signed by a responsible official of the vessel, agent, owner, operator, or organization concerned with manning vessels.

(d) *Surrender of certificate of service.* Upon the issuance of a license the certificate of service as radio operator or merchant mariner's document endorsed as radio operator held by the licensee shall be surrendered to the issuing officer.

§ 10.13-15 Physical examinations for original licenses.

(a) All applicants for original licenses shall be required to pass physical examinations given by a medical officer of the United States Public Health Service and present certificates executed by this Public Health Service Officer to the Officers in Charge, Marine Inspection. This certificate shall attest to the applicant's acuity of vision and general physical condition.

(b) Epilepsy, insanity, senility, acute venereal disease or neurosyphilis, badly impaired hearing, or other defect that would render the applicant incompetent to perform the ordinary duties of a radio officer at sea are causes for certification as incompetent.

(c) For original license the applicant must have, either with or without glasses, at least 20/30 vision in one eye and at least 20/50 in the other. The applicant who wears glasses, however, must also be able to pass a test without glasses of at least 20/50 in one eye and at least 20/70 in the other. Any applicant for original license who is possessed of monocular vision and who has served as a radio operator on merchant vessels of the United States while possessed of such vision may be issued a license if eligible in all other respects. Vision of at least 20/30 without glasses in the remaining eye shall be required in all such cases.

(d) Where an applicant is not possessed of the vision, hearing, and general physical condition considered necessary, the Officer in Charge, Marine Inspection, after consultation with the Public Health Service physician, shall make a recommendation to the Commandant for an exception to these requirements if, in their opinion, extenuating circumstances warrant special consideration. Any request for a decision by the Commandant must be accompanied by all pertinent correspondence, records, and reports. Special consideration will be given to an applicant who has served satisfactorily at sea as a radio operator even though he is possessed of physical defects which would be cause for rejection of an applicant with no sea service. Recommendations from interested parties having knowledge of the applicant's qualifications will be given full consideration in arriving at a decision.

§ 10.13-17 Character check and references required for original licenses.

(a) In those cases where an applicant for an original license has served at sea as a radio operator, the Officer in Charge, Marine Inspection, shall require such applicant to have written endorsements of a master of a vessel on which he has served, together with those of two other licensed officers. Upon a showing that the written endorsements required above cannot be obtained without undue delay or hardship, the Officer in Charge, Marine Inspection, may accept in lieu of these endorsements those from officials of the steamship company or other employers of the applicant. Letters of recommendation attesting to the applicant's character, etc., from former employers of the applicant may be accepted in lieu of the endorsements, but such letters must be filed with the application. Where no sea service has been obtained, the applicant shall have the written endorsements of three reputable persons to whom he is well-known.

(b) Fingerprint records of each applicant shall be made on FBI Form "Applicant." This record shall be submitted to the Commandant together with the application for license.

(c) Every application for an original license shall be approved by the Commandant. No license shall be issued or temporary permit granted pending the Commandant's authorization.

(d) (1) The application of any person may be rejected by the Commandant when derogatory information has been

brought to his attention which indicates that the applicant's character and habits of life are such as to authorize the belief that he is not a suitable and safe person to be entrusted with the duties of radio-telegraph operator on any vessel.

(2) Applications will be rejected and the issuance of licenses refused to persons in the following categories:

(i) Those who have been convicted in the courts of offenses such as: Crimes of violence on shipboard and in certain instances ashore; sabotage; possession, use, or sale of narcotics; smuggling of aliens into the United States; malicious destruction of ship's property; serious cases of theft of ship's property or stores; and offenses of an infamous character.

(ii) Those who have been disapproved for service as radio operator aboard merchant vessels of the United States in time of war.

(iii) Those who have been issued a dishonorable discharge from any of the armed services of the United States.

(3) Where an application for a license is rejected by the Commandant under the provisions of this section, the application will be reconsidered upon written request of the applicant, provided he can produce additional evidence of satisfactory character and habits over a reasonable period of time immediately prior to the date of request for reconsideration. This evidence may consist of certificates showing satisfactory service in any of the armed forces of the United States; or letters from employers, from persons having direct and personal knowledge of the applicant, or from reputable institutions. The letters should indicate familiarity of the writer with the applicant, approximate dates of employment (if any), and other pertinent statements indicating the writer's belief about the applicant's character and habits.

(4) The fact that an applicant for an original license is on probation as a result of action under R. S. 4450, as amended (46 U.S.C. 239), does not itself make such an applicant ineligible, provided he meets all the requirements for such original license. However, any original license issued under those circumstances will be subject to the same probationary conditions as were imposed against the seaman's certificates or licenses in proceedings under R. S. 4450, as amended. Any such applicant must file an application for license in the usual manner, and the offense for which he was placed on probation will be considered on the merits of the case in determining his fitness to hold the license applied for.

(5) Nothing in this subpart shall be construed to permit the issuance of an original license during any period when a suspension without probation or a revocation imposed pursuant to R. S. 4450, as amended, is effective against any document held by him.

§ 10.13-19 Applicants furnishing additional information.

(a) In the course of the investigation into an applicant's qualifications (such as age, physical condition, experience, citizenship, character, and habits of

life), the Commandant may require the applicant to furnish such additional information to the Coast Guard as the Commandant deems pertinent and necessary for a determination as to whether or not the applicant is a suitable and safe person to be entrusted with the powers and duties of a radiotelegraph operator on any vessel as contemplated by the act of May 12, 1948, as amended (46 U.S.C. 220a-229h).

(b) The failure or refusal of an applicant to furnish the additional information requested by the Commandant under this section may be grounds for the Commandant's rejection of the application. However, no application will be rejected on the grounds of failure or refusal of the applicant to furnish such information unless and until the applicant shall first be afforded, before an officer of the Coast Guard, a further opportunity to furnish the requested information or to satisfactorily explain his failure or refusal to furnish such information.

§ 10.13-21 General requirements for renewal of license.

(a) *Establishing eligibility.* Applicants for renewals of licenses are charged with the duty of establishing to the satisfaction of the Coast Guard that they possess all of the qualifications necessary before they shall be issued a renewal of license.

(1) *Written application.* The Officer in Charge, Marine Inspection, shall, before granting renewal of license, require the applicant to make written application on Coast Guard Form CG-3479.

(b) *Application for renewal.* The applicant for renewal shall appear in person before an Officer in Charge, Marine Inspection, except where the applicant would be put to great inconvenience or expense to appear in person or is engaged in a service that necessitates his continuous absence from the United States. In such cases the license may be renewed by forwarding the following documents to the Officer in Charge, Marine Inspection, of the office which issued the license to be renewed:

(1) A letter of transmittal indicating reasons for not appearing in person and stating that to the best of his knowledge no physical incapacity exists, together with properly executed application on Coast Guard Form CG-3479.

(2) The oath of office on the form prescribed by the Coast Guard which has been duly executed before a person authorized to administer oaths.

(3) The license to be renewed.

(4) The currently valid license as first- or second-class radiotelegraph operator issued by the Federal Communications Commission. (This license will be sighted and returned to the applicant.)

(c) *Fitness.* No license shall be renewed if title has been permanently relinquished or facts which would render a renewal improper have come to the attention of the Coast Guard.

(d) *Period of grace.* (1) Licenses shall be renewed within 12 months after the date of expiration as shown on the

license held. During this 12-month period of grace, the license is not valid.

(2) No license shall be renewed more than 90 days in advance of the date of expiration thereof, unless there are extraordinary circumstances that justify a renewal beforehand, in which case the reasons therefor must appear in detail upon the records of the Officer in Charge, Marine Inspection, renewing the license.

(e) *Surrender of expiring license.* An applicant for renewal shall surrender his license which is being renewed upon issuance of the new license.

(Sec. 2, 64 Stat. 484, 46 U.S.C. 239b; Treasury Department Order 167-9, August 3, 1954, 19 F.R. 5195)

§ 10.13-23 Physical requirements for renewal.

(a) In the event it is found that an applicant for renewal of license obviously suffers from some physical or mental infirmity to a degree that, in the opinion of the Officer in Charge, Marine Inspection, would render him incompetent to perform the ordinary duties of a radio officer at sea, the applicant shall be required to undergo an examination by a medical officer of the Public Health Service to determine his competency. If the applicant subsequently produces a certificate from the Public Health Service to the effect that his condition has improved to a satisfactory degree, or is normal, he shall be qualified in this respect.

(b) Nothing contained in this section shall debar an applicant who has lost the sight of one eye since obtaining his original license from securing a renewal of his license, provided he is qualified in all other respects, and the vision in his one eye passes the test required for the better eye of an applicant possessed of both eyes.

(c) In exceptional cases where an applicant would be put to great inconvenience or expense to appear before a medical officer of the United States Public Health Service, the physical examination or certification may be made by another reputable physician.

(d) Whenever an applicant shall apply for renewal of his license after 12 months after the date of its expiration, he shall be required to pass the physical examination required of an applicant for an original license.

§ 10.13-25 Issuance of duplicate license.

(a) Whenever a person to whom a license has been issued loses his license, he shall report such loss to an Officer in Charge, Marine Inspection, who shall issue a duplicate license after receiving from such person a properly executed affidavit giving satisfactory evidence of such loss, and a record of the license from the Marine Inspection Office where it was issued. Such license shall be issued as a duplicate by the addition of the following typewritten endorsement, "This license replaces License No. _____ issued at _____ on the above date," as well as the port and date of the duplicate issue.

(b) The duplicate license, issued for the unexpired term, shall have the same force and effect as the lost license.

(c) When a person reports the loss of his license, or when it is discovered that any license or license form has been stolen from a Marine Inspection Office or when such lost or stolen licenses are recovered, the Officer in Charge, Marine Inspection, shall immediately report the loss, theft, or recovery to the Commandant giving a description of the license and all facts incident to its loss, theft, or recovery.

§ 10.13-27 Parting with or altering license.

(a) If the holder of any license voluntarily parts with it or places it beyond his personal control by pledging or depositing it with any other person for any purpose, he may be proceeded against in accordance with the provisions of R.S. 4450, as amended (46 U.S.C. 239), looking to a suspension or revocation of his license.

(b) The holder of any license issued pursuant to the regulations in this subpart who shall change, by addition, interpolation, or erasure of any kind any license shall be subject to all the penalties provided by law; and any license so changed is null and void and without force and effect.

§ 10.13-29 Suspension and revocation of licenses.

(a) Licenses issued pursuant to this subpart shall be subject to suspension or revocation on the same ground and in the same manner and with like procedure as is provided in the case of suspension or revocation of licenses under the provisions of R. S. 4450, as amended (46 U.S.C. 239).

(b) Whenever a license is revoked such license expires with such revocation and any license subsequently granted to such person shall be considered in the light of an original license except as to number of issue.

(c) No person whose license has been suspended or revoked shall be issued another license except upon approval of the Commandant.

(d) When a license which is about to expire is suspended, the renewal of such license may be withheld until the expiration of the period of suspension.

(e) When the license issued by the Federal Communications Commission upon which the license issued pursuant to this subpart is predicated is suspended or revoked, such suspension or revocation shall operate as a suspension or revocation of the license issued under this subpart. No formal proceedings shall be required in such cases.

§ 10.13-33 Right of appeal.

Whenever any person directly interested in or affected by any decision or action of any Officer in Charge, Marine Inspection, shall feel aggrieved by such decision or action with respect to the issuance of a license, he may appeal therefrom to the District Coast Guard Commander having jurisdiction. A like appeal shall be allowed from any decision or action of the District Coast Guard Commander to the Commandant, whose action shall be final. Such appeals shall be made in writing within 30 days after

the date of decision or action appealed from. Pending the determination of the appeal, the decision of the Officer in Charge, Marine Inspection, shall remain in effect.

Subpart 10.15—Licensing of Officers for Uninspected Vessels

AUTHORITY: The provisions of this Subpart 10.15 interpret or apply R.S. 4438a, as amended; 46 U.S.C. 224a. Other statutory provisions interpreted or applied are cited to text in parentheses.

§ 10.15-1 Applicability of laws.

(a) All the provisions of Title 46, U.S. Code, sections 221, 224, 225, 226, 227, 228, 229, 231, 232, 233, 234, 235, 237, 239, 239b, 240, 372, 375, and 672a which refer to the issuance, duration, renewal, suspension or revocation of licenses of masters, mates, chief engineers and assistant engineers shall be applicable to all uninspected vessels to which the Officers' Competency Certificates Convention, 1936, and Title 46, U.S. Code, section 224a, making effective the provisions of the Convention apply.

§ 10.15-3 Vessels to which regulations apply.

(a) The regulations in this subpart shall apply to masters, chief engineers and watch officers, deck and engineer, on all uninspected vessels, however propelled, navigating the high seas, which are registered, enrolled and licensed, or licensed under the laws of the United States whether permanently, temporarily, or provisionally, including yachts, enrolled and licensed, with the exception of:

- (1) Ships of war;
- (2) Government vessels, or vessels in the service of a public authority, which are not engaged in trade;
- (3) Wooden ships of primitive build, such as dhows and junks;
- (4) Unrigged vessels;
- (5) All vessels of less than 200 gross tons.

§ 10.15-5 Licenses issued and general provisions.

(a) Licenses to officers on uninspected vessels will be issued as follows:

- (1) License as master, motor or sail;
- (2) License as mate, motor or sail;
- (3) License as chief engineer, motor; or,
- (4) License as assistant engineer, motor.

(b) Licenses to officers of uninspected vessels shall be limited on their face to uninspected vessels, and shall be issued on the Coast Guard Form CG-2849.

(c) Licenses as master and mate shall be issued for appropriate route (ocean or coastwise) and with tonnage limitations commensurate with the experience of the applicant.

(d) (1) Licenses to chief engineer and assistant engineer shall be issued with appropriate horsepower limitations commensurate with the experience of the applicant.

(2) The regulations in § 10.10-15 shall govern the conversion of engineers' licenses from gross tonnage to horsepower limitations upon renewal.

(e) Every person to whom a license is issued shall place his signature and left thumbprint thereon, and upon any sheets attached for additional endorsements.

(f) Every master, mate, or engineer who receives a license shall make oath before an Officer in Charge, Marine Inspection, or commissioned officer of the Coast Guard authorized to administer oaths under 10 U.S.C. 936 or 14 U.S.C. 636, to be recorded upon his official file, that he will faithfully and honestly, according to his best skill and judgment, without concealment or reservation, perform all the duties required of him by law and obey all lawful orders of his superior officers.

§ 10.15-7 Related authority of licenses for inspected vessels.

A license to act as master, mate, or engineer of inspected vessels will in all cases entitle the holder to act under the limitations of his license on uninspected vessels.

§ 10.15-9 Sea service as member of the armed forces of the United States as qualifying.

Sea service as a member of the armed forces of the United States will be accepted as qualifying experience for an original or raise in grade of license. Such service will be subject to evaluation to the sea service otherwise required, and to determine the appropriate grade, class, and limit of license for which the applicant is eligible. The applicant may be permitted to omit the examination for the lower grade of license if his experience is of such character as to qualify him for the higher grade of license.

§ 10.15-11 Lifting of limitations.

Section 10.02-15 shall govern the lifting of limitations on licenses to officers of uninspected vessels.

§ 10.15-13 Citizenship and age requirements.

(a) No license shall be issued to any person who is not a United States citizen. An applicant claiming to be a citizen of the United States shall furnish documentary evidence of his citizenship. Acceptable evidence of citizenship is described in § 10.02-5.

(b) Any citizen who has attained the age of 21 years and is qualified in all other respects shall be eligible for a license: *Provided*, That a license as mate or assistant engineer may be granted to applicants who have reached the age of 19 years and are qualified in all other respects, but no such license may be raised in grade before the holder thereof shall have reached the age of 21 years.

§ 10.15-15 Reexaminations and refusal of licenses.

Section 10.02-19 shall govern the reexaminations and refusal of licenses to officers of uninspected vessels.

§ 10.15-17 Issuance of duplicate licenses.

Section 10.02-23 shall govern the issuance of duplicate licenses to officers of uninspected vessels.

§ 10.15-19 Suspension and revocation of licenses.

Licenses as master, mate, or engineer of uninspected vessels shall be subject to suspension or revocation on the same ground and in the same manner and with like procedure as is provided in the case of suspension or revocation of licenses under the provisions of R.S. 4450, as amended (46 U.S.C. 239).

§ 10.15-21 Laws, general rules and regulations, and Rules of the Road to be furnished licensed officers.

(a) Every master, mate, or engineer, when receiving an original license, a renewed license, or a raise of grade of license, shall be furnished at his request with a copy of the "Laws Governing Marine Inspection" and a copy of the "Rules and Regulations for Vessel Inspection" distributed by the Coast Guard pertinent to the license issued.

(b) In addition, every master and mate shall be furnished at his request with a copy of the "Rules of the Road" applicable to the waters for which his license has been issued.

§ 10.15-25 Application and experience required for original or raise of grade of licenses.

(a) Applicants for original or raise of grade of licenses are charged with the duty of establishing to the satisfaction of the Coast Guard that they possess all the qualifications necessary, such as age, experience, character and citizenship, before they shall be entitled to be issued such license. Until an applicant meets this mandatory requirement, he is not entitled to be licensed. No person who has been convicted by court-martial of desertion or treason in time of war, or has lost his nationality for any of the other reasons listed in 8 U.S.C. 1481, is eligible for a license. Neither is a person eligible for a license, who has been convicted by a court of record of a violation of the narcotic drug laws of the United States, the District of Columbia, or any State or Territory of the United States, within ten years prior to the date of filing the application; or who unless he furnishes satisfactory evidence that he is cured, has ever been the user of or addicted to the use of a narcotic drug.

(b) Before an applicant for original license (as defined by § 10.02-3) as master, mate, or engineer, or raise of grade of any license may be licensed, the applicant shall make application upon Coast Guard Form CG-866 and shall present it in person to an Officer in Charge, Marine Inspection. An applicant shall also present discharges and testimonial letters to the Officer in Charge, Marine Inspection, from the masters or chief engineers under whom he has served, or from the owners in the case of applicants who have already served as master or chief engineer, certifying to the name of the vessel, and the amount and character of his experience, and to his ability, character, and habits of life. Photostatic copies of those documents may be accepted for filing with the application.

(c) (1) Fingerprint records on FBI Form "Applicant" shall be submitted to

the Commandant on each application for original license at the same time application is made.

(2) The application of any person may be rejected by the Officer in Charge, Marine Inspection, when derogatory information has been brought to his attention which indicates that the applicant's habits of life and character are such as to warrant the belief that he cannot be entrusted with the duties and responsibilities of the station for which he made application. In the event that an applicant is rejected he will be advised that he may submit a request to the Commandant for a review of his case. No examination shall be given or temporary permit issued in the type case pending the Commandant's authorization.

(3) Nothing in this part shall be construed to permit an applicant to be examined for an original license or a raise in grade of license during any period when a suspension without probation or a revocation imposed pursuant to R. S. 4450, as amended, is effective against his license or certificate.

(d) No original license or raise of grade shall be issued to any applicant unless at least 1 year of his qualifying service shall have been obtained within the 3 years next preceding his application for examination.

(e) Applicants will be informed as soon as possible whether their applications have been accepted or not, and when the application of any person for a license has been approved the applicant shall be given the required examination as soon as practicable.

(f) Licensed officers entitled to raise of grade shall have issued to them new licenses for the grade for which they are found qualified. The license which is raised in grade shall be surrendered to the Officer in Charge, Marine Inspection.

(g) Except for applicants for licenses as masters, mates, chief engineers, and assistant engineers of fishing vessels, certificates from the Public Health Service attesting to the applicant's knowledge of ship sanitation and first aid will be required before the candidates are eligible for original licenses.

(Sec. 2, 64 Stat. 484; 46 U.S.C. 239b. Treasury Department Order 187-9, August 3, 1954, 19 FR. 5195)

§ 10.15-27 Physical examination required for original and raise of grade of licenses.

Sections 10.02-5 and 10.02-7 governing the physical examination requirements for applicants for original and raise of grade of licenses for inspected vessels shall apply to applicants for original and raise of grade of licenses for uninspected vessels for the same types of licenses.

§ 10.15-29 Professional requirements for original and raise of grade of licenses.

(a) For license as master or chief engineer, a candidate must have served 4 years at sea, on deck or in the engine room, respectively, of which 1 year must have been as licensed mate or assistant engineer, respectively, except as other-

wise provided in the regulations in this subpart.

(b) For license as mate or assistant engineer, a candidate must have served 3 years at sea, on deck or in the engine-room, respectively.

(c) For a license as assistant or chief engineer of motor vessels, two-thirds of the required service must have been served on motor vessels.

(d) It is not required that an applicant must have obtained his experience on United States vessels. Experience on foreign vessels will be given due credit.

(e) Experience in towed barges fitted with sails and rigging is not considered as sail vessel time.

(f) When an applicant presents evidence of service or experience which does not meet the specific requirements of the regulations in this part, but which in the opinion of the Officer in Charge, Marine Inspection, is a reasonable equivalent thereto, the application for license with supporting data shall be submitted to the Commandant for evaluation, together with the recommendation of the Officer in Charge, Marine Inspection.

§ 10.15-31 Examination requirements for licenses.

(a) *General.* The examinations given by the Coast Guard will be practical, not theoretical. They will be written, where possible, and if an oral examination is necessary, it shall be taken down in writing. The examination for licenses limited to fishing vessels shall be oral only.

(b) *Master.* Candidates for license as master will, in addition to the subjects given in the examination for mate, be required to understand and give satisfactory explanations of:

- (1) Navigation, including:
 - (i) Latitude by altitude of Polaris.
 - (ii) Elementary questions on compass deviation.

(2) Rudimentary seamanship, including:

- (i) Meteorology, use and reading of weather bulletins.
- (ii) Getting underway.
- (iii) Tending vessel at anchor; mooring and unmooring.

(iv) Keeping a ship's head to sea in heavy weather with engines broken down.

(v) How to rig a jury rudder.

(vi) Action to be taken in the event of springing a leak.

(vii) Cast of lead in heavy weather.

(c) *Mate.* Candidates for license as mate will be required to understand and give satisfactory explanations of:

- (1) Navigation, including:
 - (i) Variation, deviation of the compass, and simple methods of determining the deviation by the means of ranges, and by bearings of the sun.
 - (ii) Use of a chart and the meaning of the various signs and abbreviations thereon; method of determining and laying off compass courses and distances on a chart, and allowing for set and drift; fixing the ship's position by cross bearings of two objects; or by two bearings of the same object.

(iii) The traverse tables and a day's work in its simplest form.

(iv) Determining of latitude by meridian altitude of the sun.

(v) Longitude by position line or by time sight of the sun.

(vi) The use and adjustments of the sextant.

(vii) The use and reading of the aneroid barometer.

(2) Rudimentary seamanship, including:

(i) The use and construction of a sea anchor.

(ii) The marking and use of the lead line.

(iii) Man reported overboard.

(iv) Handling of a vessel's boat in heavy weather.

(v) Elementary first aid.

(3) The Rules to Prevent Collisions of Vessels including both the International Rules and the Pilot Rules for Inland Waters. Particular attention will be given to the steering and sailing rules, although inability to repeat them verbatim will not entail failure: *Provided*, That the candidate understands their full significance, content, and practical application. Models will be used to test the candidate's judgment and ability to act correctly and promptly.

(4) Distress signals and use of line-throwing apparatus.

(5) Buoyage system and aids to navigation.

(6) Precautions to be taken against fire, explosions from oil or gas, and spontaneous combustion. Methods of dealing with fire and use of fire extinguishers, handling of vessels after fire is discovered.

(7) Candidates for a sailing ship license will also be asked questions on the taking in and setting of fore and aft sail, and applicable questions relating to the handling of a sail vessel.

(d) *Chief engineer.* A candidate for license as chief engineer, motor, will be required to have an advanced and more complete knowledge of the subjects and problems than required for the examination for an assistant engineer.

(e) *Assistant engineer.* A candidate for license as assistant engineer, motor, will be required to understand and give satisfactory explanations of:

(1) The various codes of signals used between the bridge and engine room for working the engine.

(2) The fundamentals of oil, gas, or other internal combustion engines, and also the auxiliary machinery in use on board ship; and to show a practical knowledge of upkeep of, operation of, and repairs to same.

(3) The use of the various gauges, meters, and instruments.

(4) Treatment of a hot bearing and avoidance of same.

(5) The use of fire-extinguishing apparatus; precautions to be taken against fire or explosions from oil or gas, precautions to be taken against the formation of explosive gases in oil tanks, bilges, or other unventilated spaces, causes of spontaneous combustion; safe carriage of fuels, and storage of lubricating oils; and methods of dealing with fire.

(6) Properties of the various oils, etc., generally used in internal combustion engines.

§ 10.15-33 Requirements for renewal of licenses.

Section 10.02-9 shall govern the renewal of licenses to officers of uninspected vessels.

Subpart 10.20—Motorboat Operators' Licenses

AUTHORITY: The provisions of this Subpart 10.20 interpret or apply secs. 7, 17, 54 Stat. 165, as amended, 166, as amended; 46 U.S.C. 526f, 526g. Treasury Department Order 167-20, June 18, 1956, 21 F.R. 4894, unless otherwise noted.

§ 10.20-1 General application.

(a) The regulations in this subpart apply to all applicants for license to operate motorboats, or other vessels of fifteen gross tons or less propelled by machinery other than steam, while carrying six or less passengers for hire.

§ 10.20-3 General requirements.

(a) Any person who has attained the age of 18 years and is qualified in all other respects, shall be considered eligible for a motorboat operator's license and may be examined by the Coast Guard.

(1) An applicant for a license as a motorboat operator shall submit satisfactory documentary evidence of at least one year's experience in the operation of motorboats.

(2) An applicant for a motorboat operator's license must demonstrate his ability to speak, read and understand English as found in the Rules of the Road, aids to navigation publications, emergency equipment instructions and machinery instructions.

(3) An applicant for a motorboat operator's license to operate motorboats, or other vessels of fifteen gross tons or less propelled by machinery other than steam, on the navigable waters of the United States in the vicinity of Puerto Rico, who speaks Spanish only, will be issued a license restricted to those waters.

(b) (1) Fingerprint records on FBI Form "Applicant" shall be submitted to the Commandant on each applicant at the same time application is made for original license.

(2) The application of any person may be rejected by the Officer in Charge, Marine Inspection, when derogatory information has been brought to his attention which indicates that the applicant's habits of life and character are such as to warrant the belief that he cannot be entrusted with the duties and responsibilities of the station for which he made application. In the event that an applicant is rejected he will be advised that he may submit a request to the Commandant for a review of his case.

(3) No examination shall be given or temporary permit issued in the case pending the Commandant's authorization.

(4) No person shall be eligible for a motorboat operator's license, who has been convicted by a court of record of a violation of the narcotic drug laws

of the United States, the District of Columbia, or any State or Territory of the United States, within ten years prior to date of filing the application; or who, unless he furnishes satisfactory evidence that he is cured, has ever been the user of or addicted to the use of a narcotic drug.

(c) An applicant for a license as an operator shall submit an application on Coast Guard Form CG-866 to the Officer in Charge, Marine Inspection. If the applicant's capacity, knowledge, experience, character and habits of life are such as to warrant entrusting him with the duties and responsibilities involved in the operation and navigation of motorboats, or other vessels of fifteen gross tons or less propelled by machinery other than steam, carrying passengers for hire, a license authorizing him to discharge such duties on any such motorboats or vessels for a term of five years shall be issued to him.

(d) Every person to whom a license is issued shall place his signature and left thumb print thereon.

(e) An Officer in Charge, Marine Inspection, may place restriction or limitation upon a license as motorboat operator. Such limitation shall be commensurate with the qualifications of the applicant.

(Sec. 2, 68 Stat. 484; 46 U.S.C. 239b. Treasury Department Order 167-9, August 3, 1954, 19 F.R. 5195)

§ 10.20-5 Professional examinations.

(a) The applicant shall be examined orally concerning his fitness to hold a license as motorboat operator.

(b) (1) The examination will consist of questions on the following:

(i) Regulations governing motorboats, and other vessels of fifteen gross tons or less propelled by machinery other than steam, and the collision regulations applicable to the waters over which the applicant operates.

(ii) Fire protection and extinguishment.

(iii) Lifesaving equipment.

(iv) The operation of propelling machinery, and, particularly, the safe and proper handling of gasoline motors.

(v) The proper method of operating and navigating motorboats, and other vessels of fifteen gross tons or less propelled by machinery other than steam, carrying passengers.

(vi) Simple firstaid.

(2) Although applicants will be examined only in the collision regulations applicable to the waters upon which they are operating, it will be incumbent upon them, should they at any time operate on waters for which the collision regulations differ, to familiarize themselves with the appropriate rules.

(c) If the applicant has operated motorboats under the license issued under the act of June 9, 1910, he shall be held to possess the required experience but must qualify in all other respects.

§ 10.20-7 Physical examination requirements.

(a) (1) An applicant shall be examined by a United States Public Health

Service Medical Officer or other reputable physician to determine whether he is physically fit to perform the duties required of him and shall include the eyesight, hearing, and physical condition. Epilepsy, insanity, senility, acute venereal disease, neurosyphilis, or badly impaired hearing, eyesight, or color blindness are causes for rejection.

(2) For an original license the applicant must have, either with or without glasses, at least 20/20 vision in one eye and at least 20/40 in the other. Any applicant who wears glasses, however, must also be able to pass a test without glasses of at least 20/40 in one eye and at least 20/70 in the other. The color sense will be tested by means of a pseudo-isochromatic plate test, but any applicant who fails this test will be eligible if he can pass the "Williams" lantern test or equivalent, but if found color blind no license will be issued except in a case where the applicant shows he has operated motorboats for many years and has particular qualifications, which in the judgment of the Officer in Charge, Marine Inspection, qualifies him to operate a motorboat in daylight only and so restricts the license.

(3) For a renewal of a motorboat operator's license an examination may be required in addition to a certificate of satisfactory color sense. Nothing herein shall debar an applicant who has lost the sight of one eye while holding a license from renewing such license if he is qualified in all other respects and the vision in his one eye passes the test required for the better eye of an applicant possessed of both eyes. If an applicant for a renewal of license is pronounced color blind, the Officer in Charge, Marine Inspection, may grant him a license limited to service during daylight only.

(4) Where an applicant is not possessed of the vision, hearing, or general physical condition necessary, the Officer in Charge, Marine Inspection, after consultation with the Public Health Service physician or other examining physician, may make recommendation to the Commandant for an exception to these requirements, if in his opinion, extenuating circumstances warrant special consideration. Any requests for a decision by the Commandant must be accompanied by all pertinent correspondence, records, and reports. In this connection recommendations from agencies of the Federal Government operating Government vessels, as well as owners and operators of private vessels, made in behalf of their employees, will be given full consideration in arriving at a decision.

(b) An applicant who has operated a motorboat carrying passengers for hire under authority of a license issued prior to April 25, 1941, may be issued an operator's license without further physical examination unless the Officer in Charge, Marine Inspection, considers that such examination is necessary in view of apparent disabilities.

§ 10.20-9 Requirements for renewal.

(a) An operator's license may be renewed by application to an Officer in Charge, Marine Inspection. The pres-

entation of the license to be renewed, together with satisfactory certificate of color sense, shall be considered sufficient evidence upon which to renew a license; unless facts shall have come to the knowledge of the Officer in Charge, Marine Inspection, which would render a renewal improper in the case of a particular applicant.

(1) *Written application.* The Officer in Charge, Marine Inspection, shall, before granting renewal of license, require the applicant to make written application on Coast Guard Form CG-3479.

(b) No license shall be renewed more than 90 days in advance of the date of the expiration thereof, unless there are extraordinary circumstances that shall justify a renewal beforehand in which case the reasons therefor must appear in detail upon the records of the Officer in Charge, Marine Inspection, renewing the license.

(c) Whenever an operator shall apply for renewal of his license more than 1 year after the date of its expiration, he shall be required to pass a professional and physical examination of such length and scope as may be required by the Officer in Charge, Marine Inspection, to determine the applicant's continued qualifications.

(d) Where an applicant for renewal would be put to great inconvenience or expense to appear in person before an Officer in Charge, Marine Inspection, the license may be renewed by forwarding the documents required by the regulations in paragraph (a) of this section to the Officer in Charge, Marine Inspection, who issued the license to be renewed.

(Sec. 2, 68 Stat. 484; 46 U.S.C. 239b. Treasury Department Order 167-9, August 3, 1954, 19 F.R. 5195)

§ 10.20-11 Issuance of duplicate license.

Section 10.02-23 shall govern the issuance of duplicate motorboat operators' licenses.

§ 10.20-13 Suspension or revocation of license.

Motorboat operators' licenses shall be subject to suspension or revocation on the same grounds and with like procedure as is provided in the case of suspension or revocation of licenses under the provisions of R. S. 4450, as amended (46 U. S. C. 239).

Subpart 10.25—Registration of Staff Officers

AUTHORITY: The provisions of this Subpart 10.25 interpret or apply sec. 7, 53 Stat. 1147, as amended; 46 U.S.C. 247, unless otherwise noted.

§ 10.25-1 Application of regulations.

This subpart shall govern the registration of staff officers for employment on every vessel registered, enrolled, or licensed under the laws of the United States which employs a staff officer, except vessels navigating on bays, sounds, rivers, inland waterways, and lakes other than the Great Lakes, passenger ferries and car ferries navigating on the Great Lakes, fishing vessels, whaling vessels, and yachts.

§ 10.25-3 Grades of certificates issued.

Staff Officers shall be registered in the following grades:

- (a) Chief purser.
- (b) Purser.
- (c) Senior assistant purser.
- (d) Junior assistant purser.
- (e) Surgeon.
- (f) Professional nurse.

(Sec. 1, 53 Stat. 1145; 46 U.S.C. 242)

§ 10.25-5 Staff department defined.

(a) The staff department shall consist of officers registered under the provisions of this subpart, pursers' clerks, and such persons as may be assigned to the senior registered surgeon.

(b) The staff department shall be a separate and independent department composed of a medical division and a purser's division. The medical division shall be under the charge of the senior registered surgeon who shall be responsible solely to the master or, in the absence of the master, to the officer in charge of the vessel.

§ 10.25-7 General requirements.

(a) The applicant for a certificate of registry shall make a written application on Coast Guard Form 866 in duplicate. This application shall be made to an appropriate Officer in Charge, Marine Inspection, having jurisdiction over a seaport or a Great Lakes port.

(b) The first certificate of registry issued to any person shall be considered an original certificate of registry.

(c) An applicant for certificate of registry must be a citizen of the United States and shall submit satisfactory evidence of citizenship. Acceptable evidence of citizenship is set forth in § 10.02-5.

(d) An applicant for registry and a certificate of registry as staff officer shall not be required to take an examination, but he shall be required to submit with his application satisfactory proof of his good character and of his prior service, including at least two letters of recommendation from present or former employers. No person shall be eligible for a certificate of registry, who has been convicted by a court of record of a violation of the narcotic drug laws of the United States, the District of Columbia, or any State or Territory of the United States, within ten years prior to the date of filing the application; or who, unless he furnishes satisfactory evidence that he is cured, has ever been the user of or addicted to the use of a narcotic drug.

(e) (1) Fingerprint records on FBI Form "Applicant" shall be submitted to the Commandant on each applicant at the same time application is made.

(2) The application of any person may be rejected by the Officer in Charge, Marine Inspection, when derogatory information has been brought to his attention which indicates that the applicant's habits of life and character are such as to warrant the belief that he cannot be entrusted with the duties and responsibilities of the station for which he made application. In the event that an applicant is rejected he will be advised that he may submit a request to

the Commandant for a review of his case.

(3) No temporary permit shall be issued in a case where the Commandant's review is pending.

(f) No original certificate of registry will be issued to any applicant unless the applicant presents evidence of commitment of employment as a member of the crew of a United States merchant vessel in a capacity covered by such certificate.

(g) (1) An applicant for registry and a certificate of registry as staff officer shall be in possession of a continuous discharge book or certificate of identification or merchant mariner's document issued as a certificate of identification and shall appear in person before an Officer in Charge, Marine Inspection.

(2) The applicant shall furnish two unmounted, dull finish photographs, 2 inches by 1½ inches, of passport type taken within 1 year of the application. Photographs shall show the full face, at least 1 inch in height, with the head uncovered, and shall be a satisfactory likeness of the applicant. The issuing officer shall affix a photograph to each of the applications and impress his official seal partly over the photograph, after the applicant has in his presence signed the application.

(3) The applicant shall place his fingerprints on each of the applications and his left thumb print on the back of the certificate of registry as staff officer.

(4) A staff officer shall not be required to hold any other certificate of service or efficiency as a condition of service in such capacity on vessels.

(h) An Officer in Charge, Marine Inspection, shall issue a certificate of registry as staff officer to an applicant who has qualified for such certificate and who has made oath or affirmation before him, or a commissioned officer of the Coast Guard authorized to administer oaths under 10 U.S.C. 936 or 14 U.S.C. 636, that he will faithfully and honestly perform all the duties of his office required of him by law.

(i) Endorsements for a higher grade shall not be made on certificates of registry. An applicant for a higher grade in the staff department shall make application in the same manner as for an original certificate of registry and shall surrender his certificate upon issuance of the new certificate of registry. A person in possession of a certificate of registry as staff officer may serve in a lower grade than that for which he is registered.

(j) Certificates of registry issued to staff officers shall be suspended or revoked in the same manner and with like procedure as is provided in the case of suspension or revocation of licenses of officers under the provisions of R. S. 4450, as amended (46 U. S. C. 239).

(k) No person whose certificate of registry is under suspension or revoked shall be issued another certificate of registry except upon approval of the Commandant. If an applicant for a certificate of registry is currently suffering the suspension or revocation of a license or certificate of service, the certificate of registry for which he applies shall not be issued except upon approval of the Commandant.

(1) Any person whose certificate of registry has been stolen, lost or destroyed shall report that fact to an Officer in Charge, Marine Inspection, as soon as possible, and if a duplicate certificate is desired, a properly executed application on Coast Guard Form CG-719-E, giving satisfactory evidence of such loss shall be furnished an Officer in Charge, Marine Inspection, along with one photograph as required in the case of an application for an original certificate. The Officer in Charge, Marine Inspection, shall transmit the application and photograph to Coast Guard Headquarters, and the Commandant shall cause to be prepared a certificate which will be similar to the former certificate, bear the same book or identification number as the former certificate and will be marked "Duplicate."

(m) Whenever a certificate of registry is reported to an Officer in Charge, Marine Inspection, as having been stolen, lost, or destroyed, the Officer in Charge, Marine Inspection, shall immediately report the fact by letter to the Commandant giving all the facts incident to its loss or destruction. By the same procedure, he shall report the recovery of any certificate of registry, together with all facts incident to its recovery, and shall forward the recovered certificate to the Commandant.

(n) Staff officers who are members of the Naval Reserve Corps, shall wear on their uniforms such special distinguishing insignia as may be approved by the Secretary of the Navy.

(o) The uniform stripes, decorations, or other insignia shall be of gold braid or woven gold or silver material, and no member of the ship's crew other than such staff officers shall be allowed to wear any uniform with such staff officers' identifying insignia.

(Sec. 2, 68 Stat. 484; 46 U.S.C. 239b. Treasury Department Order 167-9, August 3, 1954, 19 F.R. 5195)

CROSS REFERENCE: See 33 CFR 1.25-65 for the fee for a duplicate certificate of registry as staff officer.

§ 10.25-9 Experience requirements.

(a) The applicant for registry and a certificate of registry as staff officer shall submit evidence of experience as follows:

(1) *Chief purser.* Two years' service aboard vessels performing duties relating to work in the purser's office.

(2) *Surgeon.* A valid license as physician and surgeon issued under the authority of a State or Territory of the United States, the Commonwealth of Puerto Rico, or the District of Columbia.

(3) *Purser.* One year's service aboard vessels performing duties relating to work in the purser's office.

(4) *Senior assistant purser.* Six months' service aboard vessels performing duties relating to work in purser's office.

(5) *Junior assistant purser.* Previous experience not required.

(6) *Professional nurse.* A valid license as a registered nurse issued under authority of a State or Territory of the United States, the Commonwealth of Puerto Rico, or the District of Columbia.

(b) Employment on shore in connection with ship's business may be accepted in lieu of service aboard vessels. Such shore employment shall be accepted in the ratio of 2 months' shore service to count as 1 month's service aboard vessels.

(c) In computing the length of service required of an applicant, service of 1 season on vessels on the Great Lakes shall be counted as service of 1 year.

(d) In the event an applicant presents other special qualifications which, in the opinion of the Officer in Charge, Marine Inspection, fit him for the duties of a staff officer, other than surgeon, the Officer in Charge, Marine Inspection, shall forward full details and description of such qualifications to Coast Guard Headquarters for the decision of the Commandant prior to the registry and issuance of certificate of registry.

(Sec. 2, 53 Stat. 1146; 46 U.S.C. 243)

PART 12—CERTIFICATION OF SEAMEN

Subpart 12.01—General

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AUTHORITY: The provisions of this Part 12 issued under R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply R.S. 4417a, as amended, 4488, as amended, 4551, as amended, sec. 13, 38 Stat. 1169, as amended, sec. 1, 2, 7, 49 Stat. 1544, 1545, as amended, 1936, as amended, sec. 3, 54 Stat. 347, as amended, sec. 2, 3, 68 Stat. 484, 675; 46 U.S.C. 391a, 481, 643, 672, 367, 689, 1333, 239b, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-9, Aug. 3, 1954, 19 F.R. 5195; 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-38, Oct. 26, 1959, 24 F.R. 8857, unless otherwise noted.

Subpart 12.01—General

§ 12.01-1 Purpose of regulations.

(a) The purpose of the regulations in this part is to provide a comprehensive and adequate means of determining the identity or the qualifications an applicant must possess in order to be eligible for certification to serve on merchant vessels of the United States.

§ 12.01-5 Authority for regulations.

(a) *General.* The authority to prescribe regulations generally is set forth in R. S. 4405 and 4462, as amended (46 U. S. C. 375, 416), and sec. 7 of the act of June 25, 1936, as amended (49 Stat. 1936; 46 U. S. C. 689), as well as in other provisions of Titles 52 and 53 of the Revised Statutes and acts amendatory thereof or supplemental thereto. Under the provisions of R. S. 4403, as amended (46 U. S. C. 372), the Commandant, United States Coast Guard, superintends the administration of the vessel inspection laws and is required to produce a correct and uniform administration of the inspection laws, rules, and regulations. Under the provisions of section 2 of the act of July 5, 1885 (23 Stat. 118, 46 U. S. C. 2), the Commandant, United States Coast Guard, and the Commissioner of Customs, Bureau of Customs, have general superintendence of the commercial marine and merchant seamen of the United States, so far as vessels and seamen are not, under the existing laws, subject to the supervision of any other officer of the Government.

(b) *Certification of seamen.* The regulations regarding requirements for certification of seamen interpret or apply R. S. 4551, as amended, sec. 13, 38 Stat. 1169, as amended by sec. 1, 49 Stat. 1930, and secs. 1, 2, 50 Stat. 199, and modified by 52 Stat. 753, 55 Stat. 579, and 55 Stat. 732; and sec. 3, 68 Stat. 675; 46 U. S. C. 643, 672, 672b, 672-1, 672-2, 50 U. S. C. 198.

(c) *Lifeboatman.* The regulations regarding lifeboatman interpret or apply R. S. 4417a and 4488, as amended

(46 U. S. C. 391a, 481), and sec. 3, 68 Stat. 675 (50 U.S.C. 198).

(d) *Tanker*. The regulations regarding tankerman interpret or apply R. S. 4417a, as amended (46 U. S. C. 391a), and sec. 3, 68 Stat. 675 (50 U.S.C. 198).

Subpart 12.02—General Requirements for Certification

§ 12.02-3 Where documents are issued.

(a) Certificates of identification, certificates of service, certificates of efficiency, and continuous discharge books are issued to applicants qualifying therefor at any Marine Inspection Office of the Coast Guard during usual business hours.

(b) (1) Coast Guard Merchant Marine Details abroad are authorized to conduct examinations for up-grading of seamen, but are not prepared to conduct the physical examination where required. Merchant Marine Details will therefore not issue regular certificates, but temporary permits in lieu thereof. Merchant Marine Details will instruct the recipient of each temporary permit to present it to the Officer in Charge, Marine Inspection, upon arrival in the first port in the United States in which a Marine Inspection Office is located in order to exchange it for a permanent certificate.

(2) The temporary permit shall be accepted in a Marine Inspection Office as proof that the bearer has complied with the rules and regulations governing the issuance of certificates, except as noted in the body of the temporary permit. The requirements noted in the exceptions will be complied with as in the case of other applicants.

(3) The written examinations are forwarded to the Commandant by Merchant Marine Details, and any Marine Inspection Office at which an applicant with a temporary permit appears may request and obtain the examination in the case from the Commandant. Any Marine Inspection Office which doubts the propriety of issuing a permanent certificate in lieu of a temporary permit which has been issued by a foreign Merchant Marine Detail shall inform the Commandant fully as to the circumstances.

§ 12.02-4 Basis for denial of documents.

No certificate of identification, certificate of service, certificate of efficiency nor continuous discharge book shall be issued to any person who, within ten years prior to the date of filing the application, has been convicted in a court of record of a violation of the narcotic drug laws of the United States, the District of Columbia, or any State or Territory of the United States; or who, unless he furnishes satisfactory evidence that he is cured, has ever been the user of or addicted to the use of a narcotic drug.

(Sec. 1, 68 Stat. 484; 46 U. S. C. 239a)

§ 12.02-5 Form in which documents are issued.

(a) Every certificate of service, certificate of efficiency, or certificate of

identification issued or reissued after November 1, 1945, shall be in the form of a merchant mariner's document, Coast Guard Form CG-2838, and wherever such certificates are mentioned in this part they shall be deemed to include merchant mariner's documents representing such certificates.

(b) Continuous discharge books are issued on Coast Guard Form CG-719.

§ 12.02-7 When documents are required.

(a) Every seaman employed on any merchant vessel of the United States of 100 gross tons or upward, except vessels employed exclusively in trade on the navigable rivers of the United States, shall be issued, at the option of the seaman, a continuous discharge book, a certificate of identification, or merchant mariner's document representing such certificate of identification, which shall be retained by him. This book or certificate of identification or merchant mariner's document will bear a number, and this same number shall be shown on all certificates of service or efficiency issued to the holder of the book or certificate or document. Provisions of this section are not applicable to unrigged vessels except seagoing barges and certain tank barges.

(b) Every seaman, as referred to in paragraph (a) of this section, shall produce a continuous discharge book or certificate of identification or merchant mariner's document representing such a certificate to the United States shipping commissioner before signing Articles of Agreement, and where the seaman is not signed on before a shipping commissioner, one of these documents shall be exhibited to the master of the vessel at the time of his employment. Seamen who do not possess one of these documents may be employed at a foreign port or place.

(c) (1) Every person employed on any merchant vessel of the United States of 100 gross tons and upward, except those navigating rivers exclusively and the smaller inland lakes, below the rank of licensed officer and registered staff officer, shall possess a valid certificate of service, or merchant mariner's document representing such certificate, issued by an Officer in Charge, Marine Inspection.

(2) No certificate of service or efficiency is required of any person below the rank of licensed officer employed on any unrigged vessel except seagoing barges and certain tank barges.

(3) No certificate of service or efficiency is required of any person below the rank of licensed officer employed on any sail vessel of less than 500 net tons while not carrying passengers for hire and while not operating outside the line dividing inland waters from the high seas, as defined in section 2 of the act of February 19, 1895, as amended (33 U.S.C. 151) and in 33 CFR Part 82.

§ 12.02-9 Application for documents.

(a) An applicant for a certificate of service, certificate of efficiency, certificate of identification, continuous discharge book, or merchant mariner's document, shall make written application, in

duplicate, on Coast Guard Form CG-719-b and shall appear in person before an Officer in Charge, Marine Inspection, or other person authorized to issue documents. The placing of fingerprints on the application shall be optional with the seaman. This application may be for the certificates or the rating endorsement for which the seaman believes he is qualified. In the case of a seaman applying for his first certificate, other than certificate of identification, the application shall include a request for either a continuous discharge book or a merchant mariner's document representing a certificate of identification, at the option of the applicant.

(b) (1) When the application is submitted for a certificate of identification, certificate of service, certificate of efficiency, merchant mariner's document, or any combination thereof, or a continuous discharge book, the seaman shall furnish three unmounted dull finish photographs of passport type (2 inches by 1½ inches) taken within one year and showing the full face at least one inch in height with head uncovered.

(2) When the application requests a continuous discharge book in addition to a certificate of service or certificate of efficiency or merchant mariner's document one additional photograph shall be furnished.

(c) An applicant for a document where sea service is required shall produce with his application discharges or other documentary evidence of his service, indicating the name of the vessels and dates on which he has had service, in what capacity, and on what waters.

(d) If the applicant possesses a continuous discharge book, certificate of identification, or merchant mariner's document representing such certificate, it shall be exhibited at the time of making application for any other document.

§ 12.02-10 Applications for documents from aliens.

(a) No application from an alien for a certificate of service, certificate of efficiency, certificate of identification, continuous discharge book, or merchant mariner's document shall be accepted unless the alien presents acceptable documentary evidence from the United States Immigration and Naturalization Service that he is lawfully admitted to the United States for permanent residence.

(b) This evidence may be in the form of an alien registration receipt card issued by the Immigration and Naturalization Service bearing the certification that the alien was admitted to the United States as an immigrant, or a declaration of intention to become a citizen of the United States issued by a naturalization court.

§ 12.02-11 General provisions respecting merchant mariner's documents.

(a) As provided in § 12.02-5, every certificate of service, certificate of efficiency, or certificate of identification issued or reissued shall be in the form of a merchant mariner's document, Coast Guard Form CG-2838.

(l) Any person whose certificate of registry has been stolen, lost or destroyed shall report that fact to an Officer in Charge, Marine Inspection, as soon as possible, and if a duplicate certificate is desired, a properly executed application on Coast Guard Form CG-719-E, giving satisfactory evidence of such loss shall be furnished an Officer in Charge, Marine Inspection, along with one photograph as required in the case of an application for an original certificate. The Officer in Charge, Marine Inspection, shall transmit the application and photograph to Coast Guard Headquarters, and the Commandant shall cause to be prepared a certificate which will be similar to the former certificate, bear the same book or identification number as the former certificate and will be marked "Duplicate."

(m) Whenever a certificate of registry is reported to an Officer in Charge, Marine Inspection, as having been stolen, lost, or destroyed, the Officer in Charge, Marine Inspection, shall immediately report the fact by letter to the Commandant giving all the facts incident to its loss or destruction. By the same procedure, he shall report the recovery of any certificate of registry, together with all facts incident to its recovery, and shall forward the recovered certificate to the Commandant.

(n) Staff officers who are members of the Naval Reserve Corps, shall wear on their uniforms such special distinguishing insignia as may be approved by the Secretary of the Navy.

(o) The uniform stripes, decorations, or other insignia shall be of gold braid or woven gold or silver material, and no member of the ship's crew other than such staff officers shall be allowed to wear any uniform with such staff officers' identifying insignia.

(Sec. 2, 68 Stat. 484; 46 U.S.C. 239b. Treasury Department Order 167-9, August 3, 1954, 19 F.R. 5195)

CROSS REFERENCE: See 33 CFR 1.25-65 for the fee for a duplicate certificate of registry as staff officer.

§ 10.25-9 Experience requirements.

(a) The applicant for registry and a certificate of registry as staff officer shall submit evidence of experience as follows:

(1) *Chief purser.* Two years' service aboard vessels performing duties relating to work in the purser's office.

(2) *Surgeon.* A valid license as physician and surgeon issued under the authority of a State or Territory of the United States, the Commonwealth of Puerto Rico, or the District of Columbia.

(3) *Purser.* One year's service aboard vessels performing duties relating to work in the purser's office.

(4) *Senior assistant purser.* Six months' service aboard vessels performing duties relating to work in purser's office.

(5) *Junior assistant purser.* Previous experience not required.

(6) *Professional nurse.* A valid license as a registered nurse issued under authority of a State or Territory of the United States, the Commonwealth of Puerto Rico, or the District of Columbia.

(b) Employment on shore in connection with ship's business may be accepted in lieu of service aboard vessels. Such shore employment shall be accepted in the ratio of 2 months' shore service to count as 1 month's service aboard vessels.

(c) In computing the length of service required of an applicant, service of 1 season on vessels on the Great Lakes shall be counted as service of 1 year.

(d) In the event an applicant presents other special qualifications which, in the opinion of the Officer in Charge, Marine Inspection, fit him for the duties of a staff officer, other than surgeon, the Officer in Charge, Marine Inspection, shall forward full details and description of such qualifications to Coast Guard Headquarters for the decision of the Commandant prior to the registry and issuance of certificate of registry.

(Sec. 2, 53 Stat. 1146; 46 U.S.C. 243)

PART 12—CERTIFICATION OF SEAMEN

Subpart 12.01—General

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| Sec. | |
| 12.01-1 | Purpose of regulations. |
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Subpart 12.02—General Requirements for Certification

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| 12.02-3 | Where documents are issued. |
| 12.02-4 | Basis for denial of documents. |
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| 12.02-10 | Applications for documents from aliens. |
| 12.02-11 | General provisions respecting merchant mariner's documents. |
| 12.02-13 | Citizenship requirements. |
| 12.02-14 | Nationality of aliens. |
| 12.02-15 | Oath requirement. |
| 12.02-17 | Rules for the preparation and issuance of documents. |
| 12.02-19 | Suspension or revocation of documents. |
| 12.02-21 | Issuance of documents after revocation. |
| 12.02-23 | Issuance of duplicate documents. |

Subpart 12.05—Able Seamen

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|----------|---|
| 12.05-1 | Certification required. |
| 12.05-3 | General requirements. |
| 12.05-5 | Physical requirements. |
| 12.05-7 | Service or training requirements. |
| 12.05-9 | Examination and demonstration of ability. |
| 12.05-11 | General provisions respecting merchant mariner's documents endorsed as able seaman. |

Subpart 12.10—Lifeboatman

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|---------|---|
| 12.10-1 | Certification required. |
| 12.10-3 | Service or training requirements. |
| 12.10-5 | Examination and demonstration of ability. |
| 12.10-7 | General provisions respecting merchant mariner's documents endorsed as lifeboatman. |

Subpart 12.15—Qualified Member of the Engine Department

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| 12.15-1 | Certification required. |
| 12.15-3 | General requirements. |
| 12.15-5 | Physical requirements. |
| 12.15-7 | Service or training requirements. |
| 12.15-9 | Examination requirements. |
| 12.15-11 | General provisions respecting merchant mariner's documents endorsed as qualified member of the engine department. |

Subpart 12.20—Tankerman

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|---------|---------------------------|
| Sec. | |
| 12.20-1 | General requirements. |
| 12.20-3 | Physical requirements. |
| 12.20-5 | Examination requirements. |

Subpart 12.25—Certificates of Service for Ratings Other Than Able Seaman or Qualified Member of the Engine Department

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| 12.25-1 | Certification required. |
| 12.25-5 | Commitment of employment. |
| 12.25-10 | General requirements. |
| 12.25-20 | Food handler. |
| 12.25-25 | Members of Merchant Marine Cadet Corps. |
| 12.25-30 | Student observers. |

AUTHORITY: The provisions of this Part 12 issued under R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply R.S. 4417a, as amended, 4488, as amended, 4551, as amended, sec. 13, 38 Stat. 1169, as amended, secs. 1, 2, 7, 49 Stat. 1544, 1545, as amended, 1936, as amended, sec. 3, 54 Stat. 347, as amended, secs. 2, 3, 68 Stat. 484, 675; 46 U.S.C. 391a, 481, 643, 672, 367, 689, 1333, 239b, 50 U.S.C. 198. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-9, Aug. 3, 1954, 19 F.R. 5195; 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-38, Oct. 26, 1959, 24 F.R. 8857, unless otherwise noted.

Subpart 12.01—General

§ 12.01-1 Purpose of regulations.

(a) The purpose of the regulations in this part is to provide a comprehensive and adequate means of determining the identity or the qualifications an applicant must possess in order to be eligible for certification to serve on merchant vessels of the United States.

§ 12.01-5 Authority for regulations.

(a) *General.* The authority to prescribe regulations generally is set forth in R. S. 4405 and 4462, as amended (46 U. S. C. 375, 416), and sec. 7 of the act of June 25, 1936, as amended (49 Stat. 1936; 46 U. S. C. 689), as well as in other provisions of Titles 52 and 53 of the Revised Statutes and acts amendatory thereof or supplemental thereto. Under the provisions of R. S. 4403, as amended (46 U. S. C. 372), the Commandant, United States Coast Guard, superintends the administration of the vessel inspection laws and is required to produce a correct and uniform administration of the inspection laws, rules, and regulations. Under the provisions of section 2 of the act of July 5, 1885 (23 Stat. 118, 46 U. S. C. 2), the Commandant, United States Coast Guard, and the Commissioner of Customs, Bureau of Customs, have general superintendence of the commercial marine and merchant seamen of the United States, so far as vessels and seamen are not, under the existing laws, subject to the supervision of any other officer of the Government.

(b) *Certification of seamen.* The regulations regarding requirements for certification of seamen interpret or apply R. S. 4551, as amended, sec. 13, 38 Stat. 1169, as amended by sec. 1, 49 Stat. 1930, and secs. 1, 2, 50 Stat. 199, and modified by 52 Stat. 753, 55 Stat. 579, and 55 Stat. 732; and sec. 3, 68 Stat. 675; 46 U. S. C. 643, 672, 672b, 672-1, 672-2, 50 U. S. C. 198.

(c) *Lifeboatman.* The regulations regarding lifeboatman interpret or apply R. S. 4417a and 4488, as amended

(46 U. S. C. 391a, 481), and sec. 3, 68 Stat. 675 (50 U.S.C. 198).

(d) *Tankerman*. The regulations regarding tankerman interpret or apply R. S. 4417a, as amended (46 U. S. C. 391a), and sec. 3, 68 Stat. 675 (50 U.S.C. 198).

Subpart 12.02—General Requirements for Certification

§ 12.02-3 Where documents are issued.

(a) Certificates of identification, certificates of service, certificates of efficiency, and continuous discharge books are issued to applicants qualifying therefor at any Marine Inspection Office of the Coast Guard during usual business hours.

(b) (1) Coast Guard Merchant Marine Details abroad are authorized to conduct examinations for up-grading of seamen, but are not prepared to conduct the physical examination where required. Merchant Marine Details will therefore not issue regular certificates, but temporary permits in lieu thereof. Merchant Marine Details will instruct the recipient of each temporary permit to present it to the Officer in Charge, Marine Inspection, upon arrival in the first port in the United States in which a Marine Inspection Office is located in order to exchange it for a permanent certificate.

(2) The temporary permit shall be accepted in a Marine Inspection Office as proof that the bearer has complied with the rules and regulations governing the issuance of certificates, except as noted in the body of the temporary permit. The requirements noted in the exceptions will be complied with as in the case of other applicants.

(3) The written examinations are forwarded to the Commandant by Merchant Marine Details, and any Marine Inspection Office at which an applicant with a temporary permit appears may request and obtain the examination in the case from the Commandant. Any Marine Inspection Office which doubts the propriety of issuing a permanent certificate in lieu of a temporary permit which has been issued by a foreign Merchant Marine Detail shall inform the Commandant fully as to the circumstances.

§ 12.02-4 Basis for denial of documents.

No certificate of identification, certificate of service, certificate of efficiency nor continuous discharge book shall be issued to any person who, within ten years prior to the date of filing the application, has been convicted in a court of record of a violation of the narcotic drug laws of the United States, the District of Columbia, or any State or Territory of the United States; or who, unless he furnishes satisfactory evidence that he is cured, has ever been the user of or addicted to the use of a narcotic drug.

(Sec. 1, 68 Stat. 484; 46 U. S. C. 239a)

§ 12.02-5 Form in which documents are issued.

(a) Every certificate of service, certificate of efficiency, or certificate of

identification issued or reissued after November 1, 1945, shall be in the form of a merchant mariner's document, Coast Guard Form CG-2838, and wherever such certificates are mentioned in this part they shall be deemed to include merchant mariner's documents representing such certificates.

(b) Continuous discharge books are issued on Coast Guard Form CG-719.

§ 12.02-7 When documents are required.

(a) Every seaman employed on any merchant vessel of the United States of 100 gross tons or upward, except vessels employed exclusively in trade on the navigable rivers of the United States, shall be issued, at the option of the seaman, a continuous discharge book, a certificate of identification, or merchant mariner's document representing such certificate of identification, which shall be retained by him. This book or certificate of identification or merchant mariner's document will bear a number, and this same number shall be shown on all certificates of service or efficiency issued to the holder of the book or certificate or document. Provisions of this section are not applicable to unrigged vessels except seagoing barges and certain tank barges.

(b) Every seaman, as referred to in paragraph (a) of this section, shall produce a continuous discharge book or certificate of identification or merchant mariner's document representing such a certificate to the United States shipping commissioner before signing Articles of Agreement, and where the seaman is not signed on before a shipping commissioner, one of these documents shall be exhibited to the master of the vessel at the time of his employment. Seamen who do not possess one of these documents may be employed at a foreign port or place.

(c) (1) Every person employed on any merchant vessel of the United States of 100 gross tons and upward, except those navigating rivers exclusively and the smaller inland lakes, below the rank of licensed officer and registered staff officer, shall possess a valid certificate of service, or merchant mariner's document representing such certificate, issued by an Officer in Charge, Marine Inspection.

(2) No certificate of service or efficiency is required of any person below the rank of licensed officer employed on any unrigged vessel except seagoing barges and certain tank barges.

(3) No certificate of service or efficiency is required of any person below the rank of licensed officer employed on any sail vessel of less than 500 net tons while not carrying passengers for hire and while not operating outside the line dividing inland waters from the high seas, as defined in section 2 of the act of February 19, 1895, as amended (33 U.S.C. 151) and in 33 CFR Part 82.

§ 12.02-9 Application for documents.

(a) An applicant for a certificate of service, certificate of efficiency, certificate of identification, continuous discharge book, or merchant mariner's document, shall make written application, in

duplicate, on Coast Guard Form CG-719-b and shall appear in person before an Officer in Charge, Marine Inspection, or other person authorized to issue documents. The placing of fingerprints on the application shall be optional with the seaman. This application may be for the certificates or the rating endorsement for which the seaman believes he is qualified. In the case of a seaman applying for his first certificate, other than certificate of identification, the application shall include a request for either a continuous discharge book or a merchant mariner's document representing a certificate of identification, at the option of the applicant.

(b) (1) When the application is submitted for a certificate of identification, certificate of service, certificate of efficiency, merchant mariner's document, or any combination thereof, or a continuous discharge book, the seaman shall furnish three unmounted dull finish photographs of passport type (2 inches by 1½ inches) taken within one year and showing the full face at least one inch in height with head uncovered.

(2) When the application requests a continuous discharge book in addition to a certificate of service or certificate of efficiency or merchant mariner's document one additional photograph shall be furnished.

(c) An applicant for a document where sea service is required shall produce with his application discharges or other documentary evidence of his service, indicating the name of the vessels and dates on which he has had service, in what capacity, and on what waters.

(d) If the applicant possesses a continuous discharge book, certificate of identification, or merchant mariner's document representing such certificate, it shall be exhibited at the time of making application for any other document.

§ 12.02-10 Applications for documents from aliens.

(a) No application from an alien for a certificate of service, certificate of efficiency, certificate of identification, continuous discharge book, or merchant mariner's document shall be accepted unless the alien presents acceptable documentary evidence from the United States Immigration and Naturalization Service that he is lawfully admitted to the United States for permanent residence.

(b) This evidence may be in the form of an alien registration receipt card issued by the Immigration and Naturalization Service bearing the certification that the alien was admitted to the United States as an immigrant, or a declaration of intention to become a citizen of the United States issued by a naturalization court.

§ 12.02-11 General provisions respecting merchant mariner's documents.

(a) As provided in § 12.02-5, every certificate of service, certificate of efficiency, or certificate of identification issued or reissued shall be in the form of a merchant mariner's document, Coast Guard Form CG-2838.

(b) Any licensed officer or unlicensed seaman currently holding, in a valid status, any of the documents listed in paragraph (a) of this section may, upon request and without examination, be issued a merchant mariner's document.

(c) A merchant mariner's document shall be a certificate of service authorizing the holder to serve in any rating endorsed thereon, or in any lower rating in the same department, or in any rating covered by a general endorsement thereon.

(d) (1) A merchant mariner's document issued to a licensed deck officer will be endorsed for, "any unlicensed rating in the deck department except able seaman," and will be a certificate of service authorizing the holder to serve in any unlicensed capacity in the deck department except able seaman without being required to present his license. If a licensed deck officer qualifies as able seaman the merchant mariner's document will be endorsed, "any unlicensed rating in the deck department including able seaman," and such endorsement will be deemed to include a certificate of efficiency as lifeboatman.

(2) A merchant mariner's document issued to an engineer officer licensed for inspected vessels of over 2,000 horsepower will be endorsed for "any unlicensed rating in the engine department," and will be a certificate of service authorizing the holder to serve in any unlicensed capacity in the engine department without being required to present his license. If a licensed engineer qualifies as a lifeboatman, the further endorsement, "lifeboatman," will be placed on the merchant mariner's document.

(3) A merchant mariner's document issued to a licensed radio officer will be endorsed as follows: "See License as Radio Officer." If a licensed radio officer qualifies as lifeboatman, the further endorsement, "Lifeboatman," will be placed on the merchant mariner's document. Qualifications for other ratings for which a radio officer is eligible may also be endorsed on the document.

(e) (1) A merchant mariner's document issued to a staff officer will be endorsed as follows: "See Certificate of Registry." The holder of a certificate of registry as chief purser, purser, senior assistant purser, or junior assistant purser may also serve in any capacity in the staff department not requiring a certificate of registry without obtaining an additional endorsement on his merchant mariner's document.

(2) The authorized holder of any valid merchant mariner's document, however endorsed, may serve in any capacity in the staff department of a vessel, except in those capacities requiring registered staff officers: *Provided*, That whenever such service includes the handling of food no person may be so employed unless his document bears the food handler's endorsement "(F.H.)."

(f) A merchant mariner's document endorsed as able seaman or as lifeboatman shall be a certificate of efficiency as lifeboatman.

(g) Every merchant mariner's document shall be a certificate of identifica-

tion unless the holder also holds a continuous discharge book. The holder of a certificate of identification in the form issued before November 1, 1945, shall surrender that certificate before he is issued a merchant mariner's document.

§ 12.02-13 Citizenship requirements.

(a) Any person making application for a continuous discharge book or a certificate of identification or a merchant mariner's document representing a certificate of identification and claiming to be a citizen of the United States shall present acceptable evidence of such citizenship at the time of making application. No original document shall be issued to any person claiming to be a citizen of the United States until such citizenship is established by acceptable evidence.

(b) Any person who has been issued a continuous discharge book or certificate of identification or merchant mariner's document showing question marks prior to the effective date of this section may at any time produce additional evidence of citizenship to a shipping commissioner or Officer in Charge, Marine Inspection. If the additional evidence produced satisfies the shipping commissioner or the Officer in Charge, Marine Inspection, to whom it is presented that the same is acceptable evidence of the citizenship of the person, such official may draw lines through the question marks and note the citizenship of the person in the space provided therefor, attesting the change, or reissue the certificate or document. Whenever such changes are made the official making the change shall immediately thereafter notify the Commandant.

(c) Acceptable evidence of citizenship is set forth in § 10.02-5 of this subchapter.

§ 12.02-14 Nationality of aliens.

(a) Any alien making application for a continuous discharge book or certificate of identification or merchant mariner's document representing a certificate of identification shall present acceptable evidence of nationality at the time of making application. No original document shall be issued to any alien until nationality is established by acceptable evidence.

(b) Any document of an official character showing the country of which the alien is a citizen or subject may be accepted as acceptable evidence of an alien's nationality. The following are examples of such a document:

(1) Declaration of intention to become a citizen of the United States made by the alien after 1929.

(2) A travel document in the nature of a passport issued by the government of the country of which the alien is a citizen or subject.

(3) A certificate issued by the consular representative of the country of which the alien is a citizen or subject.

(c) Should any doubt arise as to whether or not the document presented may be considered as acceptable evidence of the alien's nationality, the matter shall be referred to the Commandant for decision.

§ 12.02-15 Oath requirement.

An applicant for a certificate of service for any rating shall take oath before an Officer in Charge, Marine Inspection, or other official authorized to give such oath, or a commissioned officer of the Coast Guard authorized to administer oaths under 10 U.S.C. 936 or 14 U.S.C. 636, that he will faithfully and honestly perform all the duties required of him by law and carry out all lawful orders of his superior officers on shipboard.

§ 12.02-17 Rules for the preparation and issuance of documents.

(a) Upon application of any person for a certificate of service or efficiency, or merchant mariner's document, any required examination will be given as soon as practicable.

(b) Upon satisfactory completion of any required examination the Officer in Charge, Marine Inspection, shall issue the appropriate document to the applicant.

(c) Before the delivery of the document the seaman shall affix his signature on the document and shall impress his left thumbprint on the back of the document. When the seaman has no left thumb, the imprint of the right thumb may be used and that fact noted.

(d) A seaman's Social Security number may be endorsed on his document only by the Officer in Charge, Marine Inspection, or the officer or person designated for the purpose of issuing documents, including Shipping Commissioners and Collectors of Customs acting as Shipping Commissioners.

(e) Whenever a certificate or document of any type issued to seamen is reported to an Officer in Charge, Marine Inspection, as having been stolen, lost, or destroyed, the Officer in Charge, Marine Inspection, shall immediately report the fact by letter to the Commandant, giving all the facts incident to its loss or destruction. By the same procedure, he shall report the recovery of any document together with all facts incident to its recovery, and shall forward the recovered document to the Commandant.

(f) An applicant for a certificate of service or of efficiency who has been duly examined and refused a certificate by an Officer in Charge, Marine Inspection, will not be permitted to make application for reexamination until 30 days have elapsed.

§ 12.02-19 Suspension or revocation of documents.

Any certificate of service or of efficiency or merchant mariner's document representing such certificate(s) is subject to suspension or revocation on the same grounds and in the same manner and with like procedure as is provided in the case of suspension or revocation of licenses of officers under the provisions of R.S. 4450, as amended (46 U.S.C. 239).

§ 12.02-21 Issuance of documents after revocation.

(a) An applicant who has had a certificate or other document revoked and who is applying for certification in the same or any other rating shall state in his application the date of revocation

and number or type of the document revoked.

(b) No applicant who has had a certificate or other document revoked will be certificated in the same or any other rating except upon approval of the Commandant.

§ 12.02-23 Issuance of duplicate documents.

(a) If a seaman loses his continuous discharge book, certificate of identification, or merchant mariner's document representing a certificate of identification, or certificate of discharge by shipwreck or other casualty, he shall be supplied with a reissue of such documents free of charge. The phrase "or other casualty" as used in this section is interpreted to mean any damage to a ship caused by collision, explosion, tornado, wreck or flooding of the ship, such as a tidal wave or a grounding of the ship on a sand bar, or a beaching of the ship on a shore or by fire or other causes in a category with these mentioned.

(b) If a seaman loses his continuous discharge book, or merchant mariner's document representing a certificate of identification, or certificate of discharge, otherwise than by shipwreck or other casualty, he will be required to pay for a reissue or a duplicate at an amount equal to the cost of such document or certificate to the Government as prescribed in 33 CFR 1.25-65.

(c) The seaman shall be required to pay for the reissue document (if payment is required) at the time of the issuance of such document to him and in the event the lost document is found he shall be required to surrender same to the Shipping Commissioner, Collector or Deputy Collector of Customs, or the Officer in Charge, Marine Inspection. If the seaman requests a certificate of identification in lieu of a lost book, or vice versa, he shall be required to pay for the reissue of the lost document at the time of its issuance (if payment is required). When the reissue of the document is issued to him, he may then exchange the same in accordance with the regular procedure.

(d) A seaman shall be required to furnish one properly executed application on Coast Guard Form CG-719-E, giving satisfactory evidence of the loss of his documents to the Officer in Charge, Marine Inspection, Shipping Commissioner, Collector of Customs, Deputy Collector of Customs, or other authorized person. The application shall be accompanied by one photograph for each reissue of document requested, except no photograph is required for a reissue certificate of discharge. The application and necessary photographs shall be forwarded by the official receiving them to Coast Guard Headquarters and the Commandant will cause to be prepared a duplicate of lost document requested. The duplicate document will be prepared from available records at Coast Guard Headquarters and returned for issuance to the office which forwarded the application. The reissued document will be marked "duplicate," and will bear the same number as the original book or certificate of identification

with the addition of the suffix "D-1" on the first reissue, "D-2" on the second reissue, "D-3" on the third reissue, etc.; such suffix shall then become part of the serial number and shall be recorded in all subsequent records.

(e) Any person whose certificate of service or efficiency has been stolen, lost or destroyed, shall report that fact to an Officer in Charge, Marine Inspection, as soon as possible.

(f) No application from an alien for a duplicate of a certificate of service, certificate of efficiency, certificate of identification, continuous discharge book, or merchant mariner's document shall be accepted unless the alien complies with the requirements of § 12.02-10 with respect to proof that he is lawfully admitted to the United States for permanent residence.

(Sec. 5, 49 Stat. 1935, as amended, sec. 1, 52 Stat. 753, as amended, 55 Stat. 579; 48 U. S. C. 672a, 672b, 672-1, 672-2)

Subpart 12.05—Able Seamen

§ 12.05-1 Certification required.

(a) Every person employed in a rating as able seaman on any United States vessel requiring certificated able seamen, before signing articles of agreement, shall present to the Shipping Commissioner, United States Collector or Deputy Collector of Customs, or master, his certificate as able seaman or his merchant mariner's document endorsed as able seaman.

(b) No certificate as able seaman is required of any person employed on any unrigged vessel except seagoing barges, nor on any tug or towboat on the bays and sounds connected directly with the seas.

(c) No certificate as able seaman is required of any person employed on any sail vessel of less than 500 net tons while not carrying passengers for hire and while not operating outside the line dividing inland waters from the high seas.

§ 12.05-3 General requirements.

(a) To qualify for certification as able seaman an applicant shall be:

- (1) At least 19 years of age;
- (2) Pass the prescribed physical examination;
- (3) Meet the sea service or training requirements set forth in this part;
- (4) Satisfactorily pass an examination demonstrating his ability as an able seaman and lifeboatman; and
- (5) Be able to speak and understand the English language as would be required in the rating of able seaman and in an emergency aboard ship.

§ 12.05-5 Physical requirements.

(a) All applicants for a certificate of service as able seaman shall be required to pass a physical examination given by a medical officer of the United States Public Health Service and present to the Officer in Charge, Marine Inspection, a certificate executed by the Public Health Service Officer. Such certificate shall attest to the applicant's acuity of vision, color sense, hearing, and general physical condition. In exceptional cases where an applicant would be put to great in-

convenience or expense to appear before a medical officer of the United States Public Health Service, the physical examination and certification may be made by any other reputable physician.

(b) The medical examination for an able seaman is the same as for an original license as a deck officer as set forth in § 10.02-5 of this subchapter. If the applicant is in possession of an unexpired deck license, the Officer in Charge, Marine Inspection, may waive the requirement for a physical examination.

§ 12.05-7 Service or training requirements.

(a) The minimum service or training required to qualify an applicant for certification and the various endorsements as able seaman is listed in this paragraph:

(1) *High seas and inland waters—(i) "Any waters—unlimited."* Three years' service on deck in vessels of 100 gross tons or over operating on ocean or coastwise routes or on the Great Lakes.

(ii) *"Any waters—unlimited."* The period of time spent by an applicant successfully completing a course of able seaman's training in a training school approved by the Commandant may be accepted as the equivalent of sea service up to a maximum of 1 year of the 3 years required in subdivision (i) of this subparagraph.

(iii) *"Any waters—unlimited."* Satisfactory completion of 18 months' training in a seagoing training ship approved by the Commandant.

(iv) *"Any waters—12 months."* 12 months' service on deck in vessels of 100 gross tons or over operating on ocean or coastwise routes or on the Great Lakes. (Holders of certification under this provision are limited to one-fourth of the number of able seamen required by law to be employed on a vessel.)

(v) *"Any waters—12 months."* Satisfactory completion of a course of training at a U. S. Maritime Service Training Station of at least 9 months, 6 months of which shall have been served aboard a seagoing training vessel. (Holders of certification under this provision are limited to one-fourth of the number of able seamen required by law to be employed on a vessel.)

(2) *Great Lakes and inland waters—(i) "Great Lakes—18 months' service."* 18 months' service on deck in vessels of 100 gross tons or over operating on ocean or coastwise routes, or on the Great Lakes, smaller lakes, bays, or sounds. (Holders of certification under this provision may comprise the required number of able seamen on the vessels on the Great Lakes and on the smaller lakes, bays, and sounds.) If the seaman possesses the requisite service for certification under subparagraph (1)(iv) of this paragraph, there shall be added "any waters—12 months."

(3) *Tugs and towboats—(i) "Tugs and towboats—any waters."* 18 months' service on deck in vessels operating on ocean or coastwise routes, or on the Great Lakes, or on the bays and sounds connected directly with the seas.

(4) *Bays and sounds—(i) "Bays and sounds—12 months, vessels 500 gross*

tons or under not carrying passengers." 12 months' service on deck in vessels operating on ocean or coastwise routes, or on the Great Lakes, or on the bays and sounds connected directly with the seas.

(5) *Barges*—(1) "Seagoing barges—12 months." 12 months' service on deck in vessels operating on ocean or coastwise routes, or on the Great Lakes, or on the bays and sounds connected directly with the seas.

§ 12.05-9 Examination and demonstration of ability.

(a) Before an applicant is certified as able seaman, he shall prove to the satisfaction of the Coast Guard by oral or written examination and by actual demonstration, his knowledge of seamanship and his ability to carry out effectively all the duties that may be required of an able seaman, including those of a lifeboatman. He shall demonstrate that:

(1) He has been trained in all the operations connected with the launching of lifeboats and liferafts and the use of oars and sail;

(2) He is acquainted with the practical handling of the boats themselves; and

(3) He is capable of taking command of a boat's crew.

(b) The oral or written examination shall be conducted only in the English language and shall consist of questions regarding:

(1) Lifeboats and liferafts, the names of their essential parts, and a description of the required equipment;

(2) The clearing away, swinging out, and lowering of lifeboats and liferafts, the handling of lifeboats under oars and sails, including questions relative to the proper handling of a boat in a heavy sea;

(3) The operation and functions of commonly used types of davits;

(4) The applicant's knowledge of nautical terms; boxing the compass, either by degrees or points according to his experience; running lights, passing signals, and fog signals for vessels on the high seas, in inland waters, or on the Great Lakes depending upon the waters on which the applicant has had service; and distress signals; and,

(5) The applicant's knowledge of commands in handling the wheel by obeying orders passed to him as "wheelman," and knowledge of the use of engine room telegraph or bell-pull signals.

(c) In the actual demonstration, the applicant shall show his ability by taking command of a boat and directing the operation of clearing away, swinging out, lowering the boat into the water, and acting as coxswain in charge of the boat under oars. He shall demonstrate his ability to row by actually pulling an oar in the boat. He shall also demonstrate knowledge of the principal knots, bends, splices, and hitches in common use by actually making them.

(d) Any person who is in valid possession of a certificate as able seaman endorsed, "any waters—12 months" and who can produce documentary evidence of sufficient service to qualify for a certificate as able seaman endorsed, "any waters—unlimited," may be issued a new

document bearing this endorsement without additional professional examination. The applicant shall surrender for cancellation the document bearing the limited endorsement. No physical examination will be required at the time of this exchange unless it is found that the applicant obviously suffers from some physical or mental infirmity to a degree that in the opinion of the Officer in Charge, Marine Inspection, would render him incompetent to perform the usual duties of an able seaman at sea. If such condition is believed to exist, the applicant shall be required to undergo an examination by a medical officer of the Public Health Service to determine his competency.

§ 12.05-11 General provisions respecting merchant mariner's documents endorsed as able seaman.

(a) The holder of a merchant mariner's document endorsed for the rating of able seaman may serve in any unlicensed rating in the deck department without obtaining an additional endorsement.

(b) A merchant mariner's document endorsed as able seaman will also be considered a certificate of efficiency as lifeboatman without further endorsement.

(c) This type of document will describe clearly the type of able seaman certificate which it represents, e. g.: able seaman—any waters; able seaman—any waters, 12 months; able seaman—Great Lakes, 18 months; able seaman—on freight vessels 500 gross tons or less on bays or sounds, and on tugs, towboats, and barges on any waters.

Subpart 12.10—Lifeboatman

§ 12.10-1 Certification required.

Every person employed in a rating as lifeboatman on any United States vessel requiring certificated lifeboatmen shall produce a certificate as lifeboatman or merchant mariner's document endorsed as lifeboatman or able seaman to the shipping commissioner, United States collector or deputy collector of customs, or master before signing articles of agreement. No certificate of efficiency as lifeboatman is required of any person employed on any unrigged vessel, except on a seagoing barge and on a tank barge navigating waters other than rivers and/or canals.

§ 12.10-3 Service or training requirements.

(a) An applicant to be eligible for certification as lifeboatman must meet one of the following requirements:

(1) At least 1 year's sea service in the deck department, or at least 2 years' sea service in the other departments of ocean, coastwise, Great Lakes, and other lakes, bays, or sounds vessels.

(2) Graduation from a schoolship approved by and conducted under rules prescribed by the Commandant.

(3) Satisfactory completion of basic training by a Cadet of the United States Merchant Marine Cadet Corps.

(4) Satisfactory completion of 3 years' training at the U. S. Naval Academy or the U. S. Coast Guard Academy including two training cruises.

(5) Satisfactory completion of a course of training approved by the Commandant, and served aboard a training vessel.

(6) Successful completion of a training course approved by the Commandant, such course to include a minimum of 30 hours' actual lifeboat training; *Provided*, That the applicant produces evidence of having served a minimum of 3 months at sea aboard ocean or coastwise vessels.

(b) An applicant, to be eligible for certification as lifeboatman, shall be able to speak and understand the English language as would be required in the rating of lifeboatman and in an emergency aboard ship.

§ 12.10-5 Examination and demonstration of ability.

(a) Before a lifeboatman's certificate may be granted, the applicant must prove to the satisfaction of the Coast Guard by oral or written examination and by actual demonstration that:

(1) He has been trained in all the operations connected with the launching of lifeboats and liferafts and the use of oars and sails;

(2) He is acquainted with the practical handling of boats themselves; and,

(3) He is capable of taking command of a boat's crew.

(b) The oral or written examination shall be conducted only in the English language and shall consist of questions regarding:

(1) Lifeboats and liferafts, the names of their essential parts, and a description of the required equipment;

(2) The clearing away, swinging out, and lowering of lifeboats and liferafts, the handling of lifeboats under oars and sails, including questions relative to the proper handling of a boat in a heavy sea; and,

(3) The operation and functions of commonly used types of davits.

(c) The practical examination shall consist of a demonstration of the applicant's ability to carry out the orders incident to launching lifeboats, and the use of the boat's sail, and to row.

(Sec. 1, 52 Stat. 753, as amended, 55 Stat. 579; 46 U. S. C. 672b, 672-1, 672-2)

§ 12.10-7 General provisions respecting merchant mariner's documents endorsed as lifeboatman.

A merchant mariner's document endorsed as able seaman shall be considered as the equivalent of a certificate as lifeboatman or an endorsement as lifeboatman and it shall be accepted as a certificate as lifeboatman wherever required by law or regulation.

Subpart 12.15—Qualified Member of the Engine Department

§ 12.15-1 Certification required.

(a) Every person employed in a rating as qualified member of the engine department on any United States vessel requiring certificated qualified members of the engine department shall produce a certificate as qualified member of the engine department to the shipping commissioner, United States Collector or Deputy

Collector of Customs, or master before signing articles of agreement.

(b) No certificate as qualified member of the engine department is required of any person employed on any unrigged vessel, except seagoing barges.

§ 12.15-3 General requirements.

(a) A qualified member of the engine department is any person below the rating of licensed officer and above the rating of coal passer or wiper, who holds a certificate of service as such qualified member of the engine department issued by the Coast Guard or predecessor authority.

(b) For purposes of administering this part the rating of "assistant electrician" is considered a rating not above that of coal passer or wiper, but equal thereto.

(c) An applicant, to be eligible for certification as qualified member of the engine department, shall be able to speak and understand the English language as would be required in the rating of qualified member of the engine department and in an emergency aboard ship.

§ 12.15-5 Physical requirements.

(a) An applicant for a certificate of service as a qualified member of the engine department shall present a certificate of a medical officer of the United States Public Health Service, or other reputable physician attesting that his eyesight, hearing, and physical condition are such that he can perform the duties

required of a qualified member of the engine department.

(b) The medical examination for qualified member of the engine department is the same as for an original license as engineer, as set forth in § 10.02-5 of this subchapter. If the applicant is in possession of an unexpired license, the Officer in Charge, Marine Inspection, may waive the requirement for a physical examination.

(c) An applicant holding a certificate of service for a particular rating as qualified member of the engine department and desiring certification for another rating covered by this same form of certificate may qualify therefor without a physical examination unless the Officer in Charge, Marine Inspection, finds that the applicant obviously suffers from some physical or mental infirmity to a degree that would render him incompetent to perform the ordinary duties of a qualified member of the engine department. In this event the applicant shall be required to undergo an examination to determine his competency.

§ 12.15-7 Service or training requirements.

(a) An applicant for a certificate of service as qualified member of the engine department shall furnish the Coast Guard proof that he possesses one of the following requirements of training or service:

(1) Six months' service at sea in a rating at least equal to that of coal passer or wiper in the engine department of vessels required to have such certificated men, or in the engine department of tugs or towboats operating on the high seas or Great Lakes, or on the bays or sounds directly connected with the seas; or,

(2) Graduation from a schoolship approved by and conducted under rules prescribed by the Commandant; or,

(3) Satisfactory completion of a course of training approved by the Commandant, and served aboard a training vessel; or,

(4) Graduation from the U. S. Naval Academy or the U. S. Coast Guard Academy.

§ 12.15-9 Examination requirements.

(a) Applicants for certification as qualified members of the engine department in the ratings of oiler, water-tender, fireman, deck engineer, refriger-ator engineer, junior engineer, electrician, and machinist shall be examined orally or in writing and only in the English language on the subjects listed in paragraph (b) of this section. The applicant's general knowledge of the subjects must be sufficient to satisfy the examiner that he is qualified to perform the duties of the rating for which he makes application.

(b) List of subjects required:

TABLE 12.15-9 (b)—SUBJECTS FOR QUALIFIED MEMBERS OF ENGINE DEPARTMENT

Subjects	Machinist	Refrigerating engineer	Fireman	Water-tender	Oiler	Electrician	Junior engineer	Deck engineer
1. Application, maintenance, and use of hand tools and measuring instruments.....	X	X	X	X	X	X	X	X
2. Uses of babbitt, copper, brass, steel, and other metals.....	X	X		X	X	X	X	X
3. Methods of measuring pipe, pipe fittings, sheet metal, machine bolts and nuts, packing, etc.....	X	X		X	X	X	X	X
4. Operation and maintenance of mechanical remote control equipment.....	X			X	X	X	X	X
5. Precautions to be taken for the prevention of fire and the proper use of firefighting equipment.....	X	X	X	X	X	X	X	X
6. Principles of mechanical refrigeration; and functions, operation, and maintenance of various machines and parts of the systems.....		X			X		X	
7. Knowledge of piping systems as used in ammonia, freon, and CO ₂ , including testing for leaks, operation of bypasses, and making up of joints.....		X					X	
8. Safety precautions to be observed in the operation of various refrigerating systems, including storage of refrigerants, and the use of gas masks and firefighting equipment.....	X	X		X	X	X	X	X
9. Combustion of fuels, proper temperature, pressure, and atomization.....			X	X	X		X	
10. Operation of the fuel oil system on oil burning boilers, including the transfer and storage of fuel oil.....			X	X	X		X	X
11. Hazards involved and the precautions taken against accumulation of oil in furnaces, bilges, floorplates, and tank tops; flarebacks, leaks in fuel oil heaters, clogged strainers and burner tips.....	X	X	X	X	X	X	X	
12. Precautions necessary when filling empty boilers, starting up the fuel oil burning system, and raising steam from a cold boiler.....	X	X	X	X	X	X	X	
13. The function, operation, and maintenance of the various engineroom auxiliaries.....	X	X		X	X	X	X	X
14. Proper operation of the various types of lubricating systems.....	X	X		X	X	X	X	X
15. Safety precautions to be observed in connection with the operation of engineroom auxiliaries, electrical machinery, and switchboard equipment.....	X	X		X	X	X	X	X
16. The function, operation, and maintenance of the bilge, ballast, fire, freshwater, sanitary, and lubricating systems.....	X	X		X	X	X	X	X
17. Proper care of spare machine parts and idle equipment.....	X	X		X	X	X	X	X
18. The procedure in preparing a turbine, reciprocating, or Diesel engine for standby; also the procedure in securing.....				X	X		X	
19. Operation and maintenance of the equipment necessary for the supply of water to boilers, the dangers of high and low water and remedial action.....			X	X	X		X	
20. Operation, location, and maintenance of the various boiler fittings and accessories.....	X		X	X	X		X	
21. The practical application and solution of basic electrical calculations, (Ohm's law, power formula, etc.).....						X	X	X
22. Electrical wiring circuits of the various two-wire and three-wire D. O. systems and the various single-phase and polyphase A. C. systems.....						X	X	X
23. Application and characteristics of parallel and series circuits.....						X	X	X
24. Application and maintenance of electrical meters and instruments.....						X	X	X
25. The maintenance and installation of lighting and power wiring involving testing for, locating and correcting grounds, short circuits and open circuits, and making splices.....						X	X	X
26. The operation and maintenance of the various types of generators and motors, both A. C. and D. O.....						X	X	X
27. Operation, installation, and maintenance of the various types of electrical controls and safety devices.....						X	X	X
28. Testing and maintenance of special electrical equipment such as telegraphs, telephones, alarm systems, fire-detecting systems, and rudder angle indicators.....						X	X	
29. Rules and Regulations and requirements for installation, repair, and maintenance of electrical wiring and equipment installed aboard ships.....						X	X	X
30. Such further examination of a nonmathematical character as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency.....	X	X	X	X	X	X	X	X

(c) Applicants for certification as qualified member of the engine department in ratings other than those indicated in table 12.15-9 (b) shall, by written or oral examination, demonstrate sufficient general knowledge of the subjects peculiar to the rating applied for to satisfy the Officer in Charge, Marine Inspection, that they are qualified to perform the duties of the rating.

§ 12.15-11 General provisions respecting merchant mariner's documents endorsed as qualified member of the engine department.

The holder of a merchant mariner's document endorsed with one or more qualified member of the engine department ratings may serve in any unqualified rating in the engine department without obtaining an additional endorsement. This does not mean that an endorsement of one qualified member of the engine department rating authorizes the holder to serve in all qualified member of the engine department ratings. Each qualified member of the engine department rating for which a holder of a merchant mariner's document is qualified must be endorsed separately. When, however, the applicant qualifies for all ratings covered by a certificate as a qualified member of the engine department, the certification may read "QMED—any rating." The ratings are as follows:

- (a) Refrigerating engineer.
- (b) Oiler.
- (c) Watertender.
- (d) Fireman.
- (e) Deck engineer.
- (f) Junior engineer.
- (g) Electrician.
- (h) Boilermaker.
- (i) Machinist.
- (j) Pumpman.

Subpart 12.20—Tankerman

§ 12.20-1 General requirements.

(a) Any applicant for a certificate as tankerman who is not licensed as master, mate, pilot or engineer, shall be eligible for certification after he has furnished satisfactory documentary evidence to the Coast Guard that he is trained in, and capable of performing efficiently the necessary operations on tank vessels which relate to the handling of cargo.

(b) Applicants qualifying for certification as tankerman shall be issued a merchant mariner's document endorsed with the rating of tankerman and the kinds or grades of liquid cargo the holder is qualified to handle.

(c) A currently valid license as master, mate, pilot or engineer shall be considered as a certificate as tankerman and the holder may serve as tankerman upon inspected vessels of the United States required to have such certificated tankerman without having a separate certificate as tankerman.

(d) An applicant, to be eligible for certification as tankerman, shall be able to speak and understand the English language as would be required in the rating of tankerman and in an emergency aboard ship.

§ 12.20-3 Physical requirements.

(a) Applicant for certification as tankerman shall present a certificate of a medical officer of the United States Public Health Service, or other reputable physician, attesting that his eyesight, hearing, and physical condition are such that he can perform the duties required of a tankerman.

(b) The medical examination is the same as for an original license as engineer, except that the applicant will be given a color vision test required for a licensed deck officer as set forth in § 10.02-5 of this subchapter.

§ 12.20-5 Examination requirements.

Any applicant for certification as tankerman must prove to the satisfaction of the Coast Guard by an oral or written examination conducted only in the English language that he is familiar with the general arrangement of cargo tanks, suction and discharge pipelines and valves, cargo pumps and cargo hose, and has been properly trained in the actual operation of cargo pumps, all other operations connected with the loading and discharging of cargo, and the use of fire-extinguishing equipment.

Subpart 12.25—Certificates of Service for Ratings Other Than Able Seaman or Qualified Member of the Engine Department

§ 12.25-1 Certification required.

(a) Every person employed in a rating other than able seaman or qualified member of the engine department of United States merchant vessels requiring such certificated persons shall produce an appropriate certificate of service or merchant mariner's document to the shipping commissioner, United States Collector or Deputy Collector of Customs, or master, before signing articles of agreement.

(b) No certificate of service shall be required of any person employed on any unrigged vessel, except seagoing barges, or on any sail vessel of less than 500 net tons while not carrying passengers for hire and while not operating outside the line dividing inland waters from the high seas, as defined in section 2 of the act of February 19, 1895, as amended (33 U.S.C. 151) and in 33 CFR Part 82.

§ 12.25-5 Commitment of employment.

(a) An applicant for an original merchant mariner's document endorsed for service in ratings for which no professional examination is required shall produce satisfactory proof that he has a commitment of employment as a member of the crew of a United States merchant vessel.

(b) A transcript of sea service in the U.S. Navy, U.S. Coast Guard, U.S. Military Sea Transportation Service, or U.S. Army Transportation Corps shall be accepted in lieu of a letter of commitment.

§ 12.25-10 General requirements.

(a) Merchant mariner's documents shall be issued without professional examination to applicants for certificates of service as endorsements on merchant

mariner's documents in capacities other than able seaman, lifeboatman, tankerman or qualified member of the engine department and shall be endorsed for one or more ratings. For example, "ordinary seaman"—"wiper"—"steward's document (F.H.)." Holders of documents endorsed for service as "ordinary seaman" may serve in any unqualified rating in the deck department. Holders of documents endorsed for service as "wiper" may serve in any unqualified rating in the engine department. Documents endorsed for "steward's department (F.H.)" will authorize the holder's service in any capacity in the steward's department. (See § 12.02-11(e) (2) for unqualified ratings in the staff department.)

(b) When the holder of a merchant mariner's document has qualified as a food handler, the endorsement of his rating will be followed by the further endorsement "(F.H.)."

§ 12.25-20 Food handler.

No applicant for a rating authorizing the handling of food will be certificated unless he produces a certificate from a medical officer of the United States Public Health Service, or other reputable physician stating that the applicant is free from communicable disease.

§ 12.25-25 Members of Merchant Marine Cadet Corps.

No ratings other than cadet (deck) or cadet (engine) as appropriate, and lifeboatman shall be shown on a merchant mariner's document issued to a member of the U.S. Merchant Marine Cadet Corps. The merchant mariner's document shall also be stamped "Valid only while cadet in the U.S. Maritime Administration training program." The merchant mariner's document thus prepared shall be surrendered upon the holder being certified in any other rating or being issued a license and the rating of cadet (deck) or cadet (engine) shall be omitted from any new merchant mariner's document issued.

(Sec. 1, 52 Stat. 753, as amended, 55 Stat. 579; 46 U.S.C. 672b, 672-1, 672-2)

§ 12.25-30 Student observers.

Students in technical schools who are enrolled in courses in marine management and ship operations who present a letter or other documentary evidence that they are so enrolled shall be issued a merchant mariner's document as "student observers—any department" and may be signed on ships as such. Students holding these documents or certificates will not take the place of any of the crew, or fill any of the regular ratings.

PART 14—SHIPMENT AND DISCHARGE OF SEAMEN

Subpart 14.01—General

- Sec. 14.01-1 Employment of seamen whose citizenship has not been established.
- 14.01-10 Reporting loss or recovery of continuous discharge book, certificate of identification, or certificate of discharge.

Subpart 14.05—Shipping Articles

- Sec. 14.05-1 Preparation and number of copies of shipping articles.
- 14.05-3 Certification of shipping articles.
- 14.05-5 Paying off seamen during voyage.
- 14.05-10 Completing entries in shipping articles at completion of voyage.
- 14.05-15 Production of documents by seamen signing shipping articles.
- 14.05-20 Master reporting shipping and discharging of seamen on Form CG-735-T.

Subpart 14.10—Discharging Seamen

- 14.10-1 Entries in Continuous Discharge Book.
- 14.10-5 Entries in Certificate of Discharge to Merchant Seamen.
- 14.10-10 Discharging a seaman in a foreign port.
- 14.10-15 Certificate of discharge issued pending issuance of duplicate continuous discharge book.
- 14.10-20 Discharge of seamen in special cases.

AUTHORITY: The provisions of this Part 14 are issued under R.S. 4551, as amended, sec. 13, 38 Stat. 1169, as amended, sec. 7, 49 Stat. 1936, as amended; 46 U.S.C. 643, 672, 689, Treasury Department Order 120, July 31, 1950, 15 F.R. 6521, unless otherwise noted.

Subpart 14.01—General

§ 14.01-1 Employment of seamen whose citizenship has not been established.

Seamen whose continuous discharge books, certificates of identification or merchant mariner's documents show question marks with reference to place of birth and/or citizenship shall not be considered as citizens of the United States in computing the number of citizens required by statute to be employed in the crew of a vessel.

§ 14.01-10 Reporting loss or recovery of continuous discharge book, certificate of identification, or certificate of discharge.

Wherever a continuous discharge book, certificate of identification, or certificate of discharge is reported to a shipping commissioner, Collector of Customs, or an Officer in Charge, Marine Inspection, as having been stolen, lost, or destroyed, the shipping commissioner, collector of customs, or Officer in Charge, Marine Inspection, shall immediately report the fact by letter to the Commandant, giving all the facts incident to its loss or destruction. By the same procedure, he shall report the recovery of a continuous discharge book, certificate of identification, or certificate of discharge with all the facts incident to its recovery, and shall forward the recovered book, certificate of identification, or certificate of discharge to the Commandant.

Subpart 14.05—Shipping Articles

§ 14.05-1 Preparation and number of copies of shipping articles.

Shipping articles shall be made out in quadruplicate by carbon process. When the signing on of the crew has been completed the triplicate and quadruplicate copies shall be removed from the pad by the shipping commissioner, who will retain the triplicate copy and forward the quadruplicate copy to Commandant

(MVP), Coast Guard Headquarters, Washington, D.C., 20226, "Attention Merchant Vessel Personnel Records and Welfare Section." The original and duplicate copies of the articles remaining in the pad shall be given to the master who shall enter therein any changes made in the crew during the voyage.

§ 14.05-3 Certification of shipping articles.

For every vessel bound on any foreign voyage required to have shipping articles, it shall be the duty of the owners of such vessel to obtain from the shipping commissioner or the person performing duties of a shipping commissioner a statement showing that the duplicate copy of the shipping articles is a true and certified copy as required by R. S. 4575, as amended (46 U. S. C. 676).

(Interprets or applies R. S. 4575, as amended; 46 U.S.C. 676)

§ 14.05-5 Paying off seamen during voyage.

In case of the paying off of any members of the crew during the voyage, they shall be required to sign the mutual release on both the original and the duplicate of the articles whether discharged before a shipping commissioner in an American port or before an American consul in a foreign port.

§ 14.05-10 Completing entries in shipping articles at completion of voyage.

(a) At the completion of the voyage, when the crew is paid off, the mutual release on both the original and the duplicate of the articles must be signed by all members of the crew; and the original copy, together with the white copy of every certificate of discharge, Form CG-718A rev., given during the voyage or a record of entry, Form CG-718E, of every entry made in a continuous discharge book during the voyage, shall be forwarded to the Commandant (MVP), Coast Guard Headquarters, Washington, D.C., 20226. The duplicate copy shall be retained by the shipping commissioner.

(b) All columns on the shipping articles shall be properly filled in and the certifications on the back properly signed.

(c) All entries made in the continuous discharge books during the voyage, and the entries made in all certificates of discharge issued during the voyage to seamen holding certificates of identification shall be shown on the ship's articles.

§ 14.05-15 Production of documents by seamen signing shipping articles.

Every seaman shall be required, when signing articles, to produce his continuous discharge book or certificate of identification, as well as his license, certificate of registry, or certificate of service, in order that the serial numbers may be entered on the articles.

§ 14.05-20 Master reporting shipping and discharging of seamen on Form CG-735-T.

(a) The master of every merchant vessel of the United States of the

burden of one hundred gross tons or upward, except vessels employed exclusively in trade on the navigable rivers of the United States, fishing and whaling vessels, yachts, ferries and tugs used in ferry operations if such ferries and tugs are employed exclusively in trade on the Great Lakes, lakes (other than the Great Lakes), bays, sounds, bayous, canals, and harbors, and are not engaged on international voyages, and unrigged vessels other than seagoing barges, shall report the employment, discharge, or termination of the services of every seaman not shipped or discharged before a shipping commissioner, or a Collector or Deputy Collector of Customs acting as shipping commissioner on Coast Guard Form CG-735-T in the manner provided in this section.

(b) When a vessel is sailing on a voyage which will extend to the ocean or to the Gulf of Mexico and when coastwise Shipping Articles are opened or when the vessel is departing on a coastwise voyage for which Shipping Articles are not required the master shall, immediately prior to sailing, submit to the Officer in Charge, Marine Inspection, a Form CG-735-T listing the names, as well as the other data required by the form with the exception of the date and place of discharge, of the master and of each member of the crew. Thereafter, at each domestic port visited on the voyage, the master shall, prior to departure, submit to the Officer in Charge, Marine Inspection, a supplementary report on Form CG-735-T listing the name, as well as the other data required by the form, of each seaman engaged or discharged or whose services were otherwise terminated since the previous submission of the form. When coastwise Shipping Articles are completed or when a voyage on which Shipping Articles are not required is completed, the master shall submit to the Officer in Charge, Marine Inspection, a Form CG-735-T listing the names, as well as the other data required by the form, of the master and of each member of the crew on board at the time of the completion of the voyage.

(c) When a vessel is employed exclusively in trade on bays or sounds, the master shall submit a Form CG-735-T, on the last day of each calendar month, listing the name, as well as the other data required by the form—including the dates and places of engagement and discharge, of each seaman employed, discharged, or whose services were otherwise terminated during the calendar month. This form shall be forwarded by the master directly to Commandant (MVP), Coast Guard Headquarters, Washington, D.C., 20226.

(d) When a vessel is employed exclusively in trade on the Great Lakes, the master shall submit Form CG-735-T at the commencement of the season, or when the vessel is put into service, listing the names, as well as other information required by the form, with the exception of date and place of discharge, of each member of the crew. Thereafter, at the end of each calendar month, the master shall submit a supplementary report on Form CG-735-T listing the names, as

well as other information required by the form, of (1) each seaman whose employment was terminated during the month and who was not reengaged on the vessel's next trip, and (2) each seaman engaged during the month who was not also employed on the vessel in the same capacity on her last trip preceding the engagement. At the close of the season, or when the vessel is withdrawn from service, the master shall submit a final report on Form CG-735-T listing the names, as well as other information required by the form, of each seaman who has not been previously reported as discharged.

(e) Every discharge entry made on a Form CG-735-T shall agree exactly with the corresponding entry made in a continuous discharge book or on the certificate of discharge issued to a seaman and a record of entry (Form CG-718-E) or a white copy of a certificate of discharge (Form CG-718-A, Revised) supporting each discharge shall be attached to any Form CG-735-T on which discharges are reported.

(f) Any master who fails to comply with the requirements of this section is subject to a penalty of \$500.

Subpart 14.10—Discharging Seamen

§ 14.10-1 Entries in Continuous Discharge Book.

(a) Upon the discharge of any seaman and payment of his wages, the shipping commissioner or Collector or Deputy Collector of Customs at ports where no shipping commissioner has been appointed, shall enter in the Continuous Discharge Book (Form CG-719) of such seaman, if the seaman carries such a book, the name and official number of the vessel together with the name of the employer, the nature of the voyage (foreign, intercoastal, or coastwise (including Great Lakes)), the class to which the vessel belongs (steam, motor, sail, or barge), the date and place of the shipment and of the discharge of such seaman, the rating (capacity in which employed) then held by such seaman, and the signature of the person making such entries and nothing more.

(b) In cases where the law does not require the seaman to be shipped and discharged before a shipping commissioner, the master of the vessel shall make the required entries in the Continuous Discharge Book.

(c) The person making the required entries in the Continuous Discharge Book shall also prepare a "Record of Entry in Continuous Discharge Book" (Form CG-718E). The required entries include those described in paragraph (a) of this section, the full name and citizenship of the seaman, and the serial number of his Continuous Discharge Book.

(d) The completed Form CG-718E shall be signed by the seaman in whose Continuous Discharge Book the original entry was made and by the person making the entry in the Continuous Discharge Book. In cases where the record of entry is signed by a shipping commissioner, or a Collector or Deputy Collector of Customs, the master is not required

to sign the record of entry, but his name must be shown on the completed Form CG-718E.

(e) All entries in the Continuous Discharge Book (Form CG-719) shall be made in black ink. All entries on the completed Form CG-718E shall be made with a typewriter or an indelible pencil to insure legible copies.

(f) The original copy of completed Form CG-718E shall be for the Commandant's records. The duplicate copy of completed Form CG-718E will be retained by the shipping commissioner, Collector or Deputy Collector of Customs, or master issuing such record of entry. (See §§ 14.05-10 and 14.05-20 for instructions governing submission to the Commandant.)

§ 14.10-5 Entries in Certificate of Discharge to Merchant Seaman.

(a) Upon the discharge of any seaman who holds a merchant mariner's document or a certificate of identification issued by the Coast Guard or predecessor authority, and payment of his wages, the shipping commissioner, or the Collector or Deputy Collector of Customs at ports where no shipping commissioner has been appointed, shall issue to the seaman a "Certificate of Discharge to Merchant Seaman" (Form CG-718A) and shall complete the required entries on this certificate showing the full name and citizenship of the seaman to whom it is issued, the serial number of his merchant mariner's document or certificate of identification, the name and official number of the vessel together with the name of the employer, the nature of the voyage (foreign, intercoastal, or coastwise (including Great Lakes)), the class to which the vessel belongs (steam, motor, sail, or barge), the date and place of the shipment and of the discharge of such seaman, and the rating (capacity in which employed) then held by such seaman.

(b) In cases where the law does not require the seaman to be shipped and discharged before a shipping commissioner, the master of the vessel shall issue the Certificate of Discharge to Merchant Seaman (Form CG-718A) and shall complete the required entries therein.

(c) The completed Form CG-718A shall be signed by the seaman to whom it is issued and by the master of the vessel. When the seaman is required to be discharged before a shipping commissioner, or a Collector or Deputy Collector of Customs at ports where no shipping commissioner has been appointed, the shipping Commissioner or Collector or Deputy Collector of Customs shall witness the signatures of the seaman and the master. The signatures shall be made with an indelible pencil and before the issuance of the original copy to the seaman.

(d) All entries on Certificates of Discharge to Merchant Seaman (Form CG-718A) shall be made with a typewriter or with an indelible pencil to insure legible copies.

(e) The original completed Form CG-718A shall be issued to the seaman who signs the certificate. The duplicate copy

of the completed Form CG-718A will be retained by the shipping commissioner, Collector or Deputy Collector of Customs, or the master issuing such discharge. The white copy of completed Form CG-718A shall be for the Commandant's records. (See §§ 14.05-10 and 14.05-20 for instructions governing submission to the Commandant.)

§ 14.10-10 Discharging a seaman in a foreign port.

(a) Upon the discharge of any seaman in a foreign port the master shall make the proper entries in the continuous discharge book and on the ship's articles, and such entries shall be attested to by the consular officer, and Form CG-718E shall be completed in accordance with § 14.10-1. If the seaman possesses a certificate of identification, the master of the vessel shall issue to the seaman a certificate of discharge on Form CG-718A rev., and make the required entries therein which shall be attested by the consular officer. If the seaman has lost his continuous discharge book or certificate of identification, the master shall furnish him with a certificate of discharge (Form CG-718A rev.), attested to by the consular officer and note this fact on the articles.

(b) The white copy of any discharge Form CG-718A rev., given out in this manner or the original of the record of entry, Form CG-718E, shall be retained by the master until the articles covering that voyage are closed, at which time, if the crew is discharged before a shipping commissioner, or before a Collector or Deputy Collector of Customs at ports where no shipping commissioner has been appointed, it shall be delivered to that officer and forwarded by him to the Commandant, as prescribed in §§ 14.05-10 and 14.05-20; if the crew is not discharged before such officer, it shall be forwarded to the Commandant by the master as prescribed in §§ 14.05-10 and 14.05-20.

§ 14.10-15 Certificate of discharge issued pending issuance of duplicate continuous discharge book.

Pending the issuance of a duplicate of the continuous discharge book, the shipping commissioner, or Collector or Deputy Collector of Customs at ports where no shipping commissioner has been appointed, may furnish the seaman with a certificate of discharge (Form CG-718A rev.), at the completion of the voyage, and this fact shall be noted on the articles. The white copy of such discharge shall be forwarded to the Commandant, as prescribed in §§ 14.05-10 and 14.05-20.

§ 14.10-20 Discharge of seamen in special cases.

(a) Section 16 of the act of December 21, 1898 (30 Stat. 759), amended in part R. S. 4581 (46 U.S.C. 683), relating to the discharge of seamen by consuls, to read:

If a seaman is discharged on account of injury or illness, incapacitating him for service, the expenses of his maintenance and return to the United States shall be paid from the fund for the maintenance and transportation of destitute American seamen.

(b) Section 19 of the Seamen's Act of March 4, 1915 (38 Stat. 1185; 46 U. S. C. 683), adds to these words the following:

Provided, That at the discretion of the Commandant of the Coast Guard and under such regulations as he may prescribe, if any seaman incapacitated from service by injury or illness is on board a vessel so situated that a prompt discharge requiring the personal appearance of the master of the vessel before an American consul or consular agent is impracticable, such seaman may be sent to a consul or consular agent, who shall care for him and defray the cost of his maintenance and transportation, as provided in this paragraph.

(c) The personal appearance of the master of the vessel before an American consul or consular agent to consent to the discharge of a seaman who has been incapacitated by injury or illness may be waived by the consul under the following conditions:

(1) When the condition of the injured or ill seaman is such that prompt medical attendance is necessary and cannot be furnished on shipboard, and

(2) When the master cannot proceed with the seaman to the consul without risk to the crew, the vessel, or the cargo.

(d) When the master cannot appear before the consul in person he will address to the consul in writing a full statement of the facts which render necessary the discharge of the seaman, together with a statement of the reasons why he himself is unable to appear before the consul. The statement should cover the usual particulars set forth in a discharge and should be accompanied with an account of the wages due and with the necessary funds to meet such wages, or (if the cash be not available) with an order on the owner for the amount due.

(e) If the consul shall deem the statement satisfactory, he may discharge the seaman as directed in R. S. 4581, as amended by section 16 of the act of December 21, 1898, and section 19 of the act of March 4, 1915, as if the master were present, attaching to the discharge and to his relief account a copy of the statement submitted by the master.

(f) If the consul shall deem the statement unsatisfactory, he will decline to grant the discharge and direct that the seaman be returned to the vessel at its expense.

PART 15—ALLOTMENTS OF SEAMEN

Subpart 15.01—General

- Sec.
15.01-1 Persons by and to whom allotments may be made.
15.01-5 Seaman may make more than one allotment.

Subpart 15.05—Procedures Covering Allotments

- 15.05-1 Allotments to be in writing.
15.05-5 Execution of allotments.
15.05-10 Effective date of allotment.
15.05-15 Cancellation of allotment.

Subpart 15.10—Computing Allotments

- 15.10-1 Wages upon which allotments may be based.
15.10-5 Limitation on amount of allotment.

Subpart 15.15—Payment and Accounting Required

- Sec.
15.15-1 Time of payment of allotments.
15.15-5 Payment of allotments.
15.15-10 Accounting for payment.

AUTHORITY: The provisions of this Part 15 issued under 23 Stat. 55, as amended; 46 U.S.C. 599. Treasury Department Order 120, July 31, 1950, 15 F.R. 6521.

Subpart 15.01—General

§ 15.01-1 Persons by and to whom allotments may be made.

(a) Any seaman employed on any vessel (except seamen employed on fishing or whaling vessels or yachts), may stipulate in his shipping agreement for an allotment of a portion of the wages for which he is signed on (see § 15.10-5) to his grandparents, parents, wife, sister, or children; to an agency duly designated by the Secretary of the Treasury for the handling of applications for United States Savings Bonds, for the purpose of purchasing such bonds for the seaman; or for deposits to be made in an account for savings or investment opened by him and maintained in his name, either at a savings bank or a United States Postal Savings Depository, or a savings institution in which such accounts are insured by the Federal Deposit Insurance Corporation or the Federal Savings and Loan Insurance Corporation.

(b) Allotments for the purchase of United States Savings Bonds shall be in an amount corresponding exactly to the issue price of such bonds. The bank or other issuing agency will forward the bonds by mail to the address designated by the seaman, but only within the United States, its territories and insular possessions and the Canal Zone.

(c) The term "savings bank" includes any bank, savings bank, or trust company wherein a savings department is maintained; or any Federal Credit Union organized in accordance with the provisions of the Federal Credit Union Act (48 Stat. 1216, 12 U. S. C. 1751-1771); or any credit union organized under substantially similar laws of any State or the District of Columbia, which is approved by the Commandant of the Coast Guard.

(d) No allotments may be drawn in favor of a joint tenant in a savings account unless such joint tenant is a grandparent, parent, wife, sister, or child of the seaman making the allotment.

(e) Before allotments to savings institutions other than savings banks, as defined in paragraph (c) of this section may be accepted, the seaman shall present satisfactory evidence that the accounts in the particular institution are insured by either the Federal Deposit Insurance Corporation or the Federal Savings and Loan Association.

(f) Allotments by masters of vessels are not authorized and should not be approved.

§ 15.01-5 Seaman may make more than one allotment.

Any seaman may stipulate in his articles of agreement for the payment of allotments to any or all of the persons or

organizations enumerated in § 15.01-1: *Provided*, That the total amount of such allotments does not exceed the maximum amount permitted under § 15.10-5.

Subpart 15.05—Procedures Covering Allotments

§ 15.05-1 Allotments to be in writing.

All allotments executed by any seaman shall be in writing in triplicate on Form CG-722 and shall be approved by a shipping commissioner or deputy shipping commissioner, or Collector or Deputy Collector of Customs at ports where no shipping commissioner has been appointed, or consular officer of the United States.

§ 15.05-5 Execution of allotments.

All allotments shall be executed in triplicate on Form CG-722 by the seaman making the same and after the allotments are approved shall be distributed by the shipping commissioner, deputy shipping commissioner, Collector of Customs, Deputy Collector of Customs, or consular officer in the following manner:

(a) The original shall be sent to the seaman's employer.

(b) The duplicate shall be sent to the person or bank or institution in whose favor the allotment is drawn; and

(c) The triplicate shall be retained in the file of the official who approves the allotment.

§ 15.05-10 Effective date of allotment.

All allotments shall be effective as of the date when the wages of the seamen commence on the articles of agreement.

§ 15.05-15 Cancellation of allotment.

Whenever a seaman, before the expiration of the allotment period, severs his contractual relationship with the vessel upon which he was employed, the master of such vessel should notify the employer of the seaman, by the quickest means of communication available, of this fact. Upon the receipt of such information, the employer should notify the person in whose favor the allotment is drawn.

Subpart 15.10—Computing Allotments

§ 15.10-1 Wages upon which allotments may be based.

Allotments may be made by seamen only upon the amount of the wages for which they are signed on.

§ 15.10-5 Limitation on amount of allotment.

No allotment which calls for the payment of more than 90 percent of the wages upon which an allotment may be based (see § 15.10-1), after allowing for a deduction to cover the Federal withholding tax, shall be approved.

Subpart 15.15—Payment and Accounting Required

§ 15.15-1 Time of payment of allotments.

Allotments may stipulate that the payments may be made for a specified period of time or they may stipulate

that the payments be continued for the voyage of the vessel. No allotment which requires the employer of the seaman to commence payments under the same before fifteen days from the date of the allotment shall be authorized. Allotments can be made for semi-monthly, monthly, or bimonthly payments.

§ 15.15-5 Payment of allotments.

The employer of the seaman shall make payments of the amount or amounts allotted by cash, check, or money order. All such payments shall be made in sufficient time to insure the receipt of the remittance at the time and place specified in the allotment.

§ 15.15-10 Accounting for payment.

The employer of the seaman shall produce evidence of the payment of all allotments listed in a vessel's articles of agreement to the shipping commissioner supervising the payment of the wages of the crew, unless this requirement is waived by any or all of the allotments.

PART 16—UNITED STATES SHIPPING COMMISSIONERS

Sec.

16.01 Shipping commissioners designated as enforcement officers.

16.05 Acceptance of unclaimed wages.

16.10 Payment of deceased or deserting seamen's wages.

AUTHORITY: The provisions of this Part 16 issued under sec. 7, 49 Stat. 1936, as amended; 46 U.S.C. 689. Treasury Department Order 120, July 31, 1950, 15 F.R. 6521.

§ 16.01 Shipping commissioners designated as enforcement officers.

(a) Section 7 of the act of June 25, 1936, as amended (49 Stat. 1936, 46 U.S.C. 689), makes it the duty of the Commandant, U.S. Coast Guard, to enforce the provisions of the above act through Collectors of Customs and other Government officers acting under the direction of the Coast Guard, and to make such rules and regulations as he may deem necessary to carry out the provisions of the said act.

(b) In order to enforce more effectively compliance with the provisions of this act, persons or officials performing United States shipping commissioner duties are hereby designated as enforcement officers for carrying out the provisions of the act.

§ 16.05 Acceptance of unclaimed wages.

(a) Shipping commissioners or employees shall not accept unclaimed wages of seamen except in the form of checks or duly recognized money orders. In cases where the advisability of accepting the personal check of a master is doubtful, a money order must be provided.

(b) Every effort should be made to discourage the leaving of unclaimed wages with shipping commissioners. The acceptance of these wages is outside of the

duties of shipping commissioners and they are personally responsible therefor.

§ 16.10 Payment of deceased or deserting seamen's wages.

In the case of deceased or deserting seamen's wages, such wages must be paid in the form of a check or duly recognized money order, unless such payment is made direct to the shipping commissioner. In cases where the advisability of accepting the personal check of a master is doubtful, the payment must be made by money order or direct to the shipping commissioner in cash.

SUBCHAPTER C—UNINSPECTED VESSELS

PART 24—GENERAL PROVISIONS

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Subpart 24.20—General Marine Engineering Requirements

24.20-1 Marine engineering details.

AUTHORITY: The provisions of this Part 24 are issued under R.S. 4405, as amended, 4462, as amended, sec. 17, 54 Stat. 166, as amended; 46 U.S.C. 375, 416, 526p. Treasury Department Order 120, July 31, 1950, 15 F.R. 6521, unless otherwise noted.

Subpart 24.01—Authority and Purpose

§ 24.01-1 Purpose of regulations.

(a) The purpose of the regulations in this subchapter is to set forth uniform minimum requirements for motorboats, certain motor vessels, and barges carrying passengers when towed by motorboats or motor vessels in accordance with the intent of the Motorboat Act of April 25, 1940, as amended (54 Stat. 163-167; 46 U.S.C. 526-526t). The reg-

ulations are necessary to carry out the provisions of the Motorboat Act of April 25, 1940, and such regulations have the force of law.

§ 24.01-5 Assignment of functions.

(a) By Reorganization Plan No. 3 of 1946, effective July 16, 1946 (3 CFR, 1946 Supp.), the marine inspection functions of the former Bureau of Marine Inspection and Navigation and its officers and employees were transferred to the Commandant, United States Coast Guard. By Reorganization Plan No. 26 of 1950, effective July 31, 1950 (15 F. R. 4935, 3 CFR, 1950 Supp., p. 178, 5 U. S. C. Note under 241), the functions formerly vested in the Commandant, United States Coast Guard, were transferred to the Secretary of the Treasury with certain specified exceptions. The Secretary of the Treasury by order dated July 31, 1950 (15 F. R. 6521), delegated to the Commandant the functions formerly performed by him under Reorganization Plan No. 3 of 1946.

§ 24.01-10 Authority for regulations.

(a) *General.* (1) The authority to prescribe regulations generally is set forth in R. S. 4405 and 4462, as amended, and in section 17 of the Motorboat Act of April 25, 1940, as amended (46 U. S. C. 375, 416, 526p).

(b) *Lifesaving appliances.* (1) The regulations regarding lifesaving appliances interpret or apply section 6 of the Motorboat Act of April 25, 1940, as amended (46 U. S. C. 526e).

(c) *Fire protection equipment.* (1) The regulations regarding fire protection equipment interpret or apply section 8 of the Motorboat Act of April 25, 1940, as amended (46 U. S. C. 526g).

(d) *Flame arresters.* (1) The regulations regarding flame arresters interpret or apply section 10 of the Motorboat Act of April 25, 1940, as amended (46 U. S. C. 526i).

(e) *Ventilation of bilges.* (1) The regulations regarding ventilation of bilges interpret or apply section 11 of the Motorboat Act of April 25, 1940, as amended (46 U. S. C. 526j).

Subpart 24.05—Application

§ 24.05-1 Vessels subject to the requirements of this subchapter.

(a) This subchapter shall be applicable to all vessels indicated in Column 6 of Table 24.05-1 (a), and shall apply to all such United States flag vessels, and to all such foreign vessels, except as follows:

(1) Any vessel operating exclusively on inland waters which are not navigable waters of the United States.

(2) Any vessel while laid up and dismantled and out of commission.

(3) With the exception of vessels of the U. S. Maritime Administration, any vessel with title vested in the United States and which is used for public purposes.

RULES AND REGULATIONS

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TABLE 24.05-1(a)

Method of propulsion	Size or other limitations ¹	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations ¹			
		Vessels inspected and certificated under Subchapter D—Tank Vessels ²	Vessels inspected and certificated under either Subchapter II—Passenger Vessels ^{3,4,5} or Subchapter T—Small Passenger Vessels ^{2,3,5}	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels ^{2,3}	Vessels subject to provisions of Subchapter C—Uninspected Vessels ^{2,3,5}
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam.....	Vessels not over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	All tugboats and towboats.	All vessels except those covered by columns 3, 4, and 5. ⁶
	Vessels over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk. ⁸	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers. ⁷ 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, may carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.
Motor.....	Vessels of not over 15 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. ⁸	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers. ⁷ 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4 and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. ⁸	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail.....	Vessels not over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire.	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	None.
Nonself-propelled....	Vessels not over 100 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All barges carrying passengers except those covered by column 4.

¹ Where length is used in this table it means the length measured from end to end over the deck, excluding sheer. This expression "means a straight line measurement of the overall length from the foremost part of the vessel to the aftermost part of the vessel, measured parallel to the centerline."

² Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Dangerous Cargoes) of this chapter may also be applicable under certain conditions.

³ Public nautical schoolships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical schoolships, as defined by 46 U.S.C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

⁴ Subchapter H (Passenger Vessels) of this chapter covers only those vessels of 100 gross tons or more. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of less than 100 gross tons.

⁵ Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of flammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the flammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

⁶ Any vessel on an international voyage is subject to the requirements of the International Convention for Safety of Life at Sea, 1960.

⁷ The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U.S.C. 390).

⁸ Boilers and machinery are subject to examination on vessels over 40 feet in length.

§ 24.05-5 Specific application noted in text.

(a) At the beginning of the various parts, subparts, and sections, a more specific application is generally given for the particular portion of the text involved. This application sets forth the types, sizes, or services of vessels to which the text pertains, and in many cases limits the application of the text to vessels contracted for before or after a specific date. As used in this subchapter, the term "vessels contracted for" includes not only the contracting for the construction of a vessel, but also the contracting for a material alteration to a vessel, the contracting for the conversion of a vessel to a passenger vessel, and the changing of service or route of a vessel if such change increases or modifies the general requirements for the vessel or increases the hazards to which it might be subjected.

Subpart 24.10—Definition of Terms Used in This Subchapter**§ 24.10-1 Approved.**

This term means approved by the Commandant unless otherwise stated.

§ 24.10-3 Carrying passengers for hire.

The carriage of any person or persons by a vessel for a valuable consideration, whether directly or indirectly flowing to the owner, charterer, operator, agent or any other person interested in the vessel.

§ 24.10-5 Carrying freight for hire.

The carriage of any goods, wares, or merchandise or any other freight for a valuable consideration, whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person interested in the vessel.

§ 24.10-7 Commandant.

This term means the Commandant of the Coast Guard.

§ 24.10-9 Coast Guard District Commander.

This term means an officer of the Coast Guard designated as such by the Commandant to command all Coast Guard activities within his district, which include the inspection, enforcement, and administration of Title 52, Revised Statutes, and acts amendatory thereof or supplemental thereto, and rules and regulations thereunder.

§ 24.10-11 Headquarters.

This term means the Office of the Commandant, Washington, D.C.

§ 24.10-13 International voyage.

(a) The term "international voyage," as used in this subchapter, shall have the same meaning as that contained in Regulation 2(d), Chapter I, of the International Convention for Safety of Life at Sea, 1960; i.e., "International voyage" means a voyage from a country to which the present Convention applies to a port outside such country, or conversely; and for this purpose every territory for the international relations of which a Contracting Government is responsible or

for which the United Nations is the administering authority is regarded as a separate country."

(b) The International Convention for Safety of Life at Sea, 1960, does not apply to vessels "solely navigating the Great Lakes of North America and the River St. Lawrence as far east as a straight line drawn from Cap de Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63d Meridian." Accordingly, such vessels shall not be considered as being on an "international voyage" for the purpose of this subchapter.

(c) For the purposes of this subchapter the term "territory" as used in paragraph (a) of this section shall be considered to include the Commonwealth of Puerto Rico, the Canal Zone, all possessions of the United States, and all lands held by the United States under a protectorate or mandate.

(d) Although voyages between the continental United States and Hawaii or Alaska, and voyages between Hawaii and Alaska are not "international voyages" under the provisions of the International Convention for Safety of Life at Sea, 1960, such voyages are similar in nature and shall be considered as "international voyages" and subject to the same requirements for the purposes of this subchapter.

(E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp.)

§ 24.10-15 Marine inspector or inspector.

These terms mean any person from civilian or military branch of the Coast Guard assigned under the superintendence and direction of an Officer in Charge, Marine Inspection, or any other person as may be designated for the performance of duties with respect to the inspection, enforcement, and administration of Title 52, Revised Statutes, and acts amendatory thereof or supplemental thereto, and rules and regulations thereunder.

§ 24.10-17 Motorboat.

(a) This term means any vessel indicated in column 6 of Table 24.05-1(a), 65 feet in length or less which is propelled by machinery (including steam). The length shall be measured from end to end over the deck excluding sheer. This term includes a boat temporarily or permanently equipped with a detachable motor and any such boat when so propelled is subject to the applicable provisions of the act of April 25, 1940, as amended (46 U.S.C. 526-526u), and the regulations promulgated thereunder. For the purpose of this subchapter, motorboats are included under the term "vessel" unless specifically noted otherwise. The various classes of motorboats are as follows:

Class A—Any motorboat less than 16 feet in length.

Class 1—Any motorboat 16 feet or over and less than 26 feet in length.

Class 2—Any motorboat 26 feet or over and less than 40 feet in length.

Class 3—Any motorboat 40 feet or over and not more than 65 feet in length.

(b) The expression "length shall be measured from end to end over the deck excluding sheer" means a straight line measurement of the overall length from the foremost part of the vessel to the aftermost part of the vessel, measured parallel to the centerline. Bow sprits, bumpkins, rudders, outboard motor brackets, and similar fittings or attachments, are not to be included in the measurement. Length shall be stated in feet and inches.

§ 24.10-19 Motor vessel.

This term means any vessel more than 65 feet in length, which is propelled by machinery other than steam.

§ 24.10-21 Officer in Charge, Marine Inspection.

This term means any person from the civilian or military branch of the Coast Guard designated as such by the Commandant and who, under the superintendence and direction of the Coast Guard District Commander, is in charge of an inspection zone for the performance of duties with respect to the inspections, enforcement, and administration of Title 52, Revised Statutes, and acts amendatory thereof or supplemental thereto, and rules and regulations thereunder.

§ 24.10-23 Passenger.

A passenger is every person, other than the master and the members of the crew or other persons employed or engaged in any capacity on board a vessel in the business of that vessel. In the case of a vessel on an international voyage a child under one year of age is not counted as a passenger.

§ 24.10-25 Rules of the Road.

(a) The term "Rules of the Road" means the statutory and regulatory rules governing navigation of vessels. These rules are also published by the Coast Guard in pamphlet form as follows:

(1) Rules of the Road—International—Inland (CG-169).

(2) Rules of the Road—Great Lakes (CG-172).

(3) Rules of the Road—Western Rivers (CG-184).

(b) The current editions of the "Rules of the Road" pamphlets may be obtained from any Marine Inspection Office.

§ 24.10-27 Vessel.

Where the word "vessel" is used in this subchapter, it shall be considered to include all vessels indicated in Column 6 of Table 24.05-1(a), except as otherwise noted in this subpart.

Subpart 24.15—Equivalents**§ 24.15-1 Conditions under which equivalents may be used.**

(a) Where in this subchapter it is provided that a particular fitting, material, appliance, apparatus, or equipment, or type thereof, shall be fitted or carried in a vessel, or that any particular provision shall be made or arrangement shall be adopted, the Commandant may accept in substitution therefor any other fitting,

material, apparatus, or equipment, or type thereof, or any other arrangement: *Provided*, That he shall have been satisfied by suitable trials that the fitting, material, appliance, apparatus, or equipment, or type thereof, or the provision or arrangement is at least as effective as that specified in this subchapter.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, or arrangement not specifically required by law is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, or arrangement to such an extent and upon such conditions as will insure to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

§ 24.15-5 Canadian pleasure craft temporarily using navigable waters of the United States.

(a) Uninspected Canadian pleasure craft (uninspected vessels) temporarily using navigable waters of the United States may carry in lieu of the equipment required by the Motorboat Act of 1940 (46 U.S.C. 526-526u) and the regulations in this subchapter, the equipment as required by the laws of the Dominion of Canada and the regulations of the Department of Transport, Ottawa, Canada.

(Sec. 7, 72 Stat. 1757; 46 U.S.C. 527d. Treasury Department Order 167-32, September 23, 1958, 23 F.R. 7695)

Subpart 24.20—General Marine Engineering Requirements

§ 24.20-1 Marine engineering details.

(a) All marine engineering details relative to the design, construction, and testing of boilers and machinery on steam-propelled motorboats of over 40 feet in length will be found in Subchapter F (Marine Engineering) of this chapter.

(R.S. 4418, as amended; 46 U.S.C. 392. Treasury Department Order CGFR 56-28, July 24, 1956, 21 F.R. 5659)

PART 25—REQUIREMENTS

Subpart 25.01—Application

Sec. 25.01-1 Applicable to all vessels.

Subpart 25.05—Navigation Lights and Shapes

25.05-1 Vessels other than motorboats.

25.05-5 Motorboats.

Subpart 25.10—Whistles

25.10-1 Vessels other than sailing vessels, barges, and motorboats.

25.10-5 Motorboats operating on the high seas.

25.10-10 Motorboats operating on the navigable waters of the United States.

Subpart 25.15—Foghorns

25.15-1 Vessels other than motorboats.

25.15-5 Motorboats.

Subpart 25.20—Fog Sound Signal Devices

25.20-1 Vessels other than motorboats.

25.20-5 Motorboats operating on the high seas.

Sec. 25.20-10 Motorboats operating on the navigable waters of the United States.

Subpart 25.25—Life Preservers and Other Lifesaving Equipment

25.25-1 Application.

25.25-5 General provisions.

25.25-10 Life preservers and other lifesaving equipment required.

25.25-15 Storage.

25.25-20 Condition.

25.25-90 Vessels contracted for prior to November 19, 1952.

Subpart 25.30—Fire Extinguishing Equipment

25.30-1 Application.

25.30-5 General provisions.

25.30-10 Hand portable fire extinguishers and semiportable fire extinguishing systems.

25.30-15 Fixed fire extinguishing systems.

25.30-20 Fire extinguishing equipment required.

25.30-90 Vessels contracted for prior to November 19, 1952.

Subpart 25.35—Backfire Flame Control

25.35-1 Requirements.

Subpart 25.40—Ventilation

25.40-1 Tanks and engine spaces.

Subpart 25.45—Liquefied Petroleum Gas

25.45-1 Prohibited on vessels carrying passengers for hire.

AUTHORITY: The provisions of this Part 25 are issued under R.S. 4405, as amended, 4462, as amended, sec. 17, 54 Stat. 166, as amended; 46 U.S.C. 375, 416, 526p. Treasury Department Order 120, July 31, 1950, 15 F.R. 6521, unless otherwise noted.

Subpart 25.01—Application

§ 25.01-1 Applicable to all vessels.

(a) The provisions of this part shall apply to all vessels except as specifically noted.

Subpart 25.05—Navigation Lights and Shapes

§ 25.05-1 Vessels other than motorboats.

(a) All vessels other than motorboats shall be equipped with navigation lights and shapes as prescribed by law and regulation.

§ 25.05-5 Motorboats.

(a) All motorboats shall be equipped with navigation lights and shapes as prescribed by law and regulation.

Subpart 25.10—Whistles

§ 25.10-1 Vessels other than sailing vessels, barges, and motorboats.

(a) All vessels other than sailing vessels, barges, and motorboats shall be equipped with an efficient whistle or similar appliance to give the necessary whistle signals required by the Rules of the Road applicable to the waters on which the vessel is navigated.

§ 25.10-5 Motorboats operating on the high seas.

(a) All motorboats operating on the high seas outside the navigable waters of the United States shall meet the require-

ments for whistles or similar appliances prescribed by § 25.10-1 for vessels other than motorboats.

§ 25.10-10 Motorboats operating on the navigable waters of the United States.

(a) Motorboats operating on the navigable waters of the United States shall be provided with an efficient whistle or other sound producing mechanical device as set forth in Table 25.10-10(a), except:

(1) Commercial fishing motorboats may carry any device specified in Table 25.10-10 (a).

(2) Motorboats engaged in a race which has been previously arranged or announced, or while engaged in such navigation as is incidental to the tuning up of the motorboat and engines for the race, need not carry the devices required by Table 25.10-10 (a).

TABLE 25.10-10 (a)

Class of motorboat	Type of device
A.....	None.
1.....	Mouth, hand, or power operated, capable of producing a blast of 2 seconds or more duration, and audible for at least one-half mile.
2.....	Hand or power operated, capable of producing a blast of 2 seconds or more duration, and audible for a distance of at least 1 mile.
3.....	Power operated, capable of producing a blast of 2 seconds or more duration, and audible for a distance of at least 1 mile.

Subpart 25.15—Foghorns

§ 25.15-1 Vessels other than motorboats.

(a) All vessels other than motorboats shall be equipped with an efficient foghorn as prescribed by the Rules of the Road applicable to the waters on which the vessel is navigated. On vessels in ocean or coastwise service, the foghorn shall be sounded by mechanical means.

§ 25.15-5 Motorboats.

(a) All motorboats operating on the high seas outside the navigable waters of the United States shall meet the requirements for fog horns prescribed by § 25.15-1 for vessels other than motorboats.

Subpart 25.20—Fog Sound Signal Devices

§ 25.20-1 Vessels other than motorboats.

(a) All vessels other than motorboats shall be provided with fog bells as prescribed by the Rules of the Road applicable to the waters on which the vessel is operated.

(b) All vessels of more than 350 feet in length shall be provided with a fog gong which will produce a sound easily distinguishable from the sound of the bell required by paragraph (a) of this section, and shall have a range of audibility approximating that of the bell. Vessels operating exclusively on the Great Lakes and the inland waters of the United States shall be exempt from this section.

§ 25.20-5 Motorboats operating on the high seas.

(a) All motorboats operating on the high seas outside the navigable waters of the United States shall meet the requirements for fog bells prescribed by § 25.20-1 for vessels other than motorboats.

§ 25.20-10 Motorboats operating on the navigable waters of the United States.

(a) When operating on the navigable waters of the United States, motorboats of Classes A and 1 are not required to carry fog bells. However, motorboats of Classes 2 and 3 operating on the navigable waters of the United States shall be provided with an efficient fog bell, except:

(1) Motorboats engaged in a race which has been previously arranged or announced, or while engaged in such navigation as is incidental to the tuning up of the motorboat and engines for the race, need not carry the fog bell required by this section.

Subpart 25.25—Life Preservers and Other Lifesaving Equipment

§ 25.25-1 Application.

(a) The provisions of this subpart, with the exception of § 25.25-90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to that date shall meet the requirements of § 25.25-90.

§ 25.25-5 General provisions.

(a) Where equipment in this subpart is required to be of an approved type, such equipment requires the specific approval of the Commandant. Such approvals are published in the FEDERAL REGISTER, and in addition, are contained in Coast Guard publication CG-190, "Equipment Lists."

(b) Specifications for items of equipment required in this subpart have been promulgated and are contained in Subchapter Q (Specifications) of this chapter. The markings specified for a specific item of approved equipment by that subchapter shall be attached to or imprinted on the equipment as prescribed in the specifications, and the information required in such markings shall be legible in order for such item to be accepted as equipment of an approved type required by this subchapter.

(c) All life preservers shall be of an approved type, constructed in accordance with the applicable provisions of Subpart 160.002, 160.005 or 160.055 of Subchapter Q (Specifications) of this chapter.

(1) All kapok and fibrous glass life preservers which do not have plastic-covered pad inserts as required by Subparts 160.002 and 160.005 shall not be acceptable as equipment required by this subchapter.

(2) Cork and balsa wood life preservers, constructed in accordance with the applicable provisions of Subpart 160.003 or 160.004 and manufactured as approved life preservers prior to July 1, 1965, may be accepted as new or replacement equipment required by this subchapter

providing such life preservers are serviceable and in good condition.

(d) All wood floats shall be of a type constructed in accordance with Subpart 160.039 of Subchapter Q (Specifications) of this chapter.

(e) All buoyant cushions shall be of an approved type, constructed in accordance with the applicable provisions of Subpart 160.048 or 160.049 of Subchapter Q (Specifications) of this chapter.

(1) All kapok and fibrous glass buoyant cushions which do not have plastic-covered pad inserts as required by Subpart 160.048 shall not be acceptable as equipment required by this subchapter.

(f) All ring life buoys shall be of an approved type, constructed in accordance with Subpart 160.009 or 160.050 of Subchapter Q (Specifications) of this chapter.

(g) All buoyant vests shall be of an approved type constructed in accordance with Subpart 160.047 or 160.052 of Subchapter Q (Specifications) of this chapter.

(h) Special purpose water safety buoyant devices (such as water ski vests, hunters buoyant jackets, etc.), in order to be of approved type, shall be constructed, listed and labeled in accordance with Subpart 160.064 of Subchapter Q (Specifications) of this chapter.

(Sec. 6, 54 Stat. 164, as amended; 46 U.S.C. 526e)

§ 25.25-10 Life preservers and other lifesaving equipment required.

(a) All motor vessels shall be provided with an approved life preserver for each person on board. Motor vessels carrying passengers for hire shall be provided with an approved adult type life preserver for each person carried, and, in addition, unless the service is such that children are never carried, there shall be provided a number of approved life preservers suitable for children equal to at least 10 percent of the total number of persons carried.

(b) All motorboats shall carry lifesaving equipment as follows:

(1) Motorboats which carry passengers for hire shall be provided with an approved adult type life preserver for each person carried. In addition, unless the service is such that children are never carried, there shall be provided a number of approved life preservers suitable for children equal to at least 10 percent of the total number of persons carried. Such motorboats may carry special purpose water safety buoyant devices of approved type as excess equipment.

(2) Motorboats of Class 3 not carrying passengers for hire shall carry an approved life preserver or ring life buoy for each person on board. Such motorboats may carry special purpose water safety buoyant devices of approved type as excess equipment.

(3) Commercial fishing motorboats of Class 3 shall carry an approved life preserver, ring life buoy, or wood float for each person on board.

(4) Commercial fishing motorboats of Class A, 1, or 2 shall carry an approved life preserver, ring life buoy,

buoyant vest, buoyant cushion, or wood float for each person on board.

(5) All other motorboats not otherwise specifically provided for shall carry an approved life preserver, ring life buoy, buoyant vest, special purpose water safety buoyant device, or buoyant cushion for each person on board.

(c) All barges carrying passengers for hire shall be provided with an approved adult type life preserver for each person carried, and in addition, unless the service is such that children are never carried, there shall be provided a number of approved life preservers suitable for children equal to at least 10 percent of the total number of persons carried when such barges are regularly operated with motorboats or motor vessels or steam vessels.

§ 25.25-15 Storage.

(a) The lifesaving equipment on all vessels shall be so placed as to be readily accessible.

§ 25.25-20 Condition.

(a) The lifesaving equipment required by this subpart shall be in good and serviceable condition.

§ 25.25-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the applicable provisions of §§ 25.25-5 through 25.25-15 insofar as the number of items of equipment and the method of stowage are concerned.

(b) Existing items of equipment, previously approved, but not meeting the applicable specifications may be continued in service so long as they are serviceable and in good condition, except that:

(1) All kapok and fibrous glass life preservers which do not have plastic-covered pad inserts as required by Subparts 160.002 and 160.005 shall not be acceptable as equipment required by this subchapter.

(2) All kapok and fibrous glass buoyant cushions which do not have plastic-covered pad inserts as required by Subpart 160.048 shall not be acceptable as equipment required by this subchapter.

(c) All new installations and replacements shall meet the applicable requirements or specifications as described in §§ 25.25-5 through 25.25-15.

Subpart 25.30—Fire Extinguishing Equipment

§ 25.30-1 Application.

(a) The provisions of this subpart, with the exception of § 25.30-90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to that date shall meet the requirements of § 25.30-90.

§ 25.30-5 General provisions.

(a) Where equipment in this subpart is required to be of an approved type, such equipment requires the specific approval of the Commandant. Such approvals are published in the FEDERAL REGISTER, and in addition, are contained in Coast Guard publication CG-190, "Equipment Lists."

(b) All hand portable fire extinguishers, semiportable fire extinguishing systems, and fixed fire extinguishing systems shall be of an approved type.

§ 25.30-10 Hand portable fire extinguishers and semiportable fire extinguishing systems.

(a) Hand portable fire extinguishers and semiportable fire extinguishing systems are classified by a combination letter and number symbol. The letter indicating the type of fire which the unit could be expected to extinguish, and the number indicating the relative size of the unit.

(b) For the purpose of this subchapter, all required hand portable fire extinguishers and semiportable fire extinguishing systems are of the "B" type; i.e., suitable for extinguishing fires involving flammable liquids, greases, etc.

(c) The number designations for size will start with "I" for the smallest to "V" for the largest. For the purpose of this subchapter, only sizes I through III will be considered. Sizes I and II are considered hand portable fire extinguishers and sizes III, IV, and V are considered semiportable fire extinguishing systems which shall be fitted with suitable hose and nozzle or other practicable means so that all portions of the space concerned may be covered. Examples of size graduations for some of the typical hand portable fire extinguishers and semiportable fire extinguishing systems are set forth in Table 25.30-10 (c).

TABLE 25.30-10 (c)

Classification		Foam, gallons	Carbon dioxide, pounds	Dry chemical, pounds
Type	Size			
B.....	I.....	1 1/4	4	2
B.....	II.....	2 1/2	15	10
B.....	III.....	12	35	20

(d) All hand portable fire extinguishers and semiportable fire extinguishing systems shall have permanently attached thereto a metallic name plate giving the name of the item, the rated capacity in gallons, quarts, or pounds, the name and address of the person or firm for whom approved, and the identifying mark of the actual manufacturer.

(e) Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or other toxic vaporizing liquids shall not be acceptable as equipment required by this subchapter.

(f) Hand portable or semiportable extinguishers which are required on their name plates to be protected from freezing shall not be located where freezing temperatures may be expected.

§ 25.30-15 Fixed fire extinguishing systems.

(a) When a fixed fire extinguishing system is installed, it shall be of an approved carbon dioxide type, designed and installed in agreement with the applicable provisions of Subpart 76.15 of Subchapter H (Passenger Vessels) of this chapter.

§ 25.30-20 Fire extinguishing equipment required.

(a) Motorboats. (1) All motorboats shall carry at least the minimum number of hand portable fire extinguishers set forth in Table 25.30-20(a)(1), except that motorboats less than 26 feet in length, propelled by outboard motors and not carrying passengers for hire, need not carry such portable fire extinguishers if the construction of such motorboats will not permit the entrapment of explosive or flammable gases or vapors.

TABLE 25.30-20(a)(1)

Class of motorboat	Length, feet	Minimum number of B-I hand portable fire extinguishers required ¹	
		No fixed fire extinguishing system in machinery space	Fixed fire extinguishing system in machinery space
A	Under 16.....	1	0
1	16 and over, but under 26.....	1	0
2	26 and over, but under 40.....	2	1
3	40 and over, but not over 65.....	3	2

¹One B-II hand portable fire extinguisher may be substituted for two B-I hand portable fire extinguishers.

(2) The intent of this regulation is illustrated in Figure 25.30-20(a1) where fire extinguishers are required if any one or more of the specified conditions exist, and in Figure 25.30-20(a2) where specified conditions do not, in themselves, require that fire extinguishers be carried.

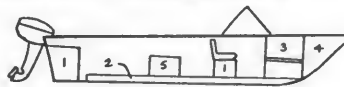


FIGURE 25.30-20(a1)

Fire extinguishers are required if any one or more of the following conditions exist (numbers identifying conditions are the same as those placed in Figure 25.30-20(a1) :

1. Closed compartment under thwarts and seats wherein portable fuel tanks may be stored.
2. Double bottoms not sealed to the hull or which are not completely filled with flotation material.
3. Closed living spaces.
4. Closed stowage compartments in which combustible or flammable materials are stowed.
5. Permanently installed fuel tanks.



FIGURE 25.30-20(a2).

The following conditions do not, in themselves, require that fire extinguishers be carried (numbers identifying conditions are the same as those placed in Figure 25.30-20(a2) :

1. Bait wells.
2. Glove compartments.
3. Buoyant flotation material.
4. Open slatted flooring.
5. Ice chests.

(b) Motor vessels. (1) All motor vessels shall carry at least the minimum number of hand portable fire extinguishers set forth in Table 25.30-20 (b) (1).

TABLE 25.30-20 (b) (1)

Gross tonnage		Minimum number of B-II hand portable fire extinguishers
Over	Not over	
-----	50	1
50	100	2
100	500	3
500	1,000	6
1,000	-----	8

(2) In addition to the hand portable fire extinguishers required by Subparagraph (1) of this paragraph, the following fire-extinguishing equipment shall be fitted in the machinery space:

(i) One Type B-II hand portable fire extinguisher shall be carried for each 1,000 B. H. P. of the main engines or fraction thereof. However, not more than 6 such extinguishers need be carried.

(ii) On motor vessels of over 300 gross tons, either one Type B-III semiportable fire-extinguishing system shall be fitted, or alternatively, a fixed fire-extinguishing system shall be fitted in the machinery space.

(c) Barges carrying passengers. (1) Every barge of 65 feet in length or less while carrying passengers when towed or pushed by a motorboat, motor vessel, or steam vessel shall be fitted with hand portable fire extinguishers as required by Table 25.30-20(a)(1), depending upon the length of the barge.

(2) Every barge of over 65 feet in length while carrying passengers when towed or pushed by a motorboat, motor vessel, or steam vessel shall be fitted with hand portable fire extinguishers as required by Table 25.30-20(b)(1), depending upon the gross tonnage of the barge.

§ 25.30-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the applicable provisions of §§ 25.30-5 through 25.30-20 insofar as the number and general type of equipment is concerned. Existing items of equipment and installations previously approved but not meeting the applicable requirements for type approval may be continued in service so long as they are in good condition. All new installations and replacements shall meet the requirements of §§ 25.30-5 through 25.30-20.

Subpart 25.35—Backfire Flame Control

§ 25.35-1 Requirements.

(a) Every gasoline engine installed in a motorboat or motor vessel after April 25, 1940, except outboard motors, shall be equipped with an acceptable means of backfire flame control.

(b) Installations made before November 19, 1952, need not meet the detailed requirements of this subpart and may be continued in use as long as they are serviceable and in good condition. Replacements shall meet the applicable conditions in this section.

(c) Installations consisting of backfire flame arresters bearing basic Approval No. 162.015 may be continued in use as long as they are serviceable and in good condition. Replacements shall meet the applicable conditions in this section.

(d) Installations consisting of engine air and fuel induction system and given a basic Approval No. 162.015 may be continued in use as long as they are serviceable and in good condition. Replacements shall meet the applicable conditions in this section.

(e) The following are acceptable means of backfire flame control for gasoline engines:

(1) A backfire flame arrester constructed in accordance with the specification regulations contained in Subpart 162.041 of Subchapter Q (Specifications) of this chapter and it shall be specifically approved by the Commandant. The flame arrester shall be suitably secured to the air intake with flamtight connection.

(2) An engine air and fuel induction system which provides adequate protection from propagation of backfire flame to the atmosphere equivalent to that provided by an approved backfire flame arrester. A gasoline engine utilizing an air and fuel induction system, and operated without an approved backfire flame arrester shall have such installation tested and labeled in accordance with the specifications contained in Subpart 162.042 of Subchapter Q (Specifications) of this chapter and such system shall be specifically approved by the Commandant.

(3) Any attachment to the carburetor or location of the engine air induction system by means of which flames caused by engine backfire will be dispersed to the atmosphere outside the vessel in such a manner that the flames will not endanger the vessel, persons on board, or nearby vessels and structures. All attachments shall be of metallic construction with flamtight connections and firmly secured to withstand vibration, shock, and engine backfire. Such installations do not require formal approval and labeling, but will be accepted by Coast Guard law enforcement officers on the basis of compliance with this subpart.

(4) Where manufacturers wish to produce vessels having an integrated engine-vessel design, a pre-market approval of an engine air induction system is available. Such an installation shall be tested and labeled in accordance with the specifications contained in Subpart 162.043 of Subchapter Q (Specifications) of this chapter and such system shall be specifically approved by the Commandant.

(Interpret or apply sec. 10, 54 Stat. 165, as amended, 46 U.S.C. 5261)

Subpart 25.40—Ventilation

§ 25.40-1 Tanks and engine spaces.

(a) All motorboats or motor vessels, except open boats, the construction or decking over of which is commenced after April 25, 1940, and which use fuel having a flashpoint of 110° F. or less, shall have at least 2 ventilator ducts,

fitted with cowls or their equivalent, for the efficient removal of explosive or flammable gases from the bilges of every engine and fuel tank compartment. There shall be at least one exhaust duct installed so as to extend from the open atmosphere to the lower portion of the bilge and at least one intake duct installed so as to extend to a point at least midway to the bilge or at least below the level of the carburetor air intake. The cowls shall be located and trimmed for maximum effectiveness and in such a manner so as to prevent displaced fumes from being recirculated.

(b) As used in this section, the term "open boats" means those motorboats or motor vessels with all engine and fuel tank compartments, and other spaces to which explosive or flammable gases and vapors from these compartments may flow, open to the atmosphere and so arranged as to prevent the entrapment of such gases and vapors within the vessel.

(c) Where alterations are needed for existing motorboats or motor vessels to comply with the requirements in this section, such alterations shall be accomplished as soon as practicable but in any case shall be completed by June 1, 1966.

(Sec. 11, 54 Stat. 165, as amended; 46 U.S.C. 526j)

Subpart 25.45—Liquefied Petroleum Gas

§ 25.45-1 Prohibited on vessels carrying passengers for hire.

(a) On vessels carrying passengers for hire, the use of liquefied petroleum gases and certain flammable liquids for cooking, heating, or lighting is prohibited by Parts 146 and 147 of Subchapter N (Dangerous Cargoes) of this chapter.

(R.S. 4472, as amended; 46 U.S.C. 170)

PART 26—OPERATIONS

Subpart 26.01—Application

Sec. 26.01-1 Applicable to all vessels.

Subpart 26.03—Special Operating Requirements

26.03-1 Reckless or negligent operation prohibited by law.

26.03-5 Action required after accident.

Subpart 26.05—Penalties

26.05-1 General.

26.05-5 Reckless operation.

Subpart 26.10—Assessment, Collection, Mitigation, Remission of Fines or Penalties

26.10-1 General.

26.10-5 Procedures.

Subpart 26.15—Boarding

26.15-1 May board at any time.

Subpart 26.20—Exhibition of Motorboat Operator's License

26.20-1 Must be available.

Subpart 26.25—Crew Requirements

26.25-1 Licensed personnel.

26.25-5 Manning.

AUTHORITY: The provisions of this Part 26 are issued under R.S. 4405, as amended, 4462, as amended, sec. 17, 54 Stat. 166, as amended; 46 U.S.C. 375, 416, 526p. Treasury Department Order 120, July 31, 1950, 15 F.R. 6521, unless otherwise noted.

Subpart 26.01—Application

§ 26.01-1 Applicable to all vessels.

(a) The provisions of this part shall apply to all vessels except as specifically noted.

Subpart 26.03—Special Operating Requirements

§ 26.03-1 Reckless or negligent operation prohibited by law.

Subsection 13 (a) of the Act of April 25, 1940, as amended (46 U.S.C. 526i), reads as follows:

No person 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. To "operate" means to navigate or otherwise use a motorboat or a vessel.

§ 26.03-5 Action required after accident.

(a) Whenever an undocumented vessel is involved in a collision, accident, or other casualty, the operator shall:

(1) Comply with requirements in subsection 13(b) of the Act of April 25, 1940, as amended (46 U.S.C. 526j), which reads as follows:

In the case of collision, accident, or other casualty involving a motorboat or other vessel subject to this Act, it shall be the duty of the operator, if and so far as he can do so without serious danger to his own vessel, or persons aboard, to render such assistance as may be practicable and necessary to other persons affected by the collision, accident, or other casualty in order to save them from danger caused by the collision, accident, or casualty. He shall also give his name, address, and identification of his vessel to any person injured and to the owner of any property damaged. The duties imposed by this subsection shall be in addition to any duties otherwise provided by law.

(b) See Subpart 173.01 of Part 173 of Subchapter S (Numbering of Undocumented Vessels, Statistics on Numbering, and "Boating Accident Reports" and Accident Statistics) of this chapter for requirements governing "boating accident reports."

Subpart 26.05—Penalties

§ 26.05-1 General.

(a) If any motorboat or motor vessel subject to any of the provisions of the Act of April 25, 1940, as amended (54 Stat. 163-167, as amended; 46 U.S.C. 526-526u), is operated or navigated in violation of said Act or any of the applicable regulations in this chapter, the owner or operator, either one or both of them, is subject to the penalty in section 16, as amended (46 U.S.C. 526o), which reads as follows:

If any motorboat or vessel subject to any of the provisions of this Act is operated or navigated in violation of this Act or any regulation issued thereunder, the owner or operator, either one or both of them, shall, in addition to any other penalty prescribed by law, be liable to a penalty of \$100: *Provided*, That in the case of motorboats or vessels subject to the provisions of this Act carrying passengers for hire, a penalty of \$200 shall be imposed on the owner or operator, either one or both of them, thereof for any violation of section 6, 7, or 8 of this Act or of

any regulations pertaining thereto. For any penalty incurred under this section the motorboat or vessel shall be held liable and may be proceeded against by way of libel in the district court of any district in which said motorboat or vessel may be found.

§ 26.05-5 Reckless operation.

(a) Any person who shall operate a motorboat or any vessel in a reckless or negligent manner is subject to the following penalty:

Sec. 14. 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. (Apr. 25, 1940, sec. 14; 54 Stat. 166; 46 U.S.C. 526m.)

Subpart 26.10—Assessment, Collection, Mitigation, Remission of Fines or Penalties

§ 26.10-1 General.

(a) The assessment, collection, mitigation, and remission of any fine, penalty, or forfeiture incurred under the Act of April 25, 1940, as amended, are authorized by section 17 (46 U.S.C. 526p), which reads in part as follows:

• • • The Commandant of the Coast Guard or any officer of the Coast Guard authorized by the Commandant may, upon application therefor, remit or mitigate any fine, penalty or forfeiture incurred under this Act or any regulations thereunder relating to motorboats or vessels, except the penalties provided in section 14 hereunder. • • •

(b) The assessment, collection, mitigation, and remission of penalties incurred under the Federal Boating Act of 1958 are authorized by subsection 8(b) (46 U.S.C. 527e), which reads as follows:

The Secretary may assess and collect any penalty incurred under this Act or any regulations prescribed pursuant to section 7 of this Act. The Secretary may, in his discretion, remit or mitigate any penalty imposed under this section, or discontinue prosecution therefor on such terms as he may deem proper.

§ 26.10-5 Procedures.

(a) Violations or maritime safety, navigation and vessel inspection laws, as well as rules and regulations prescribed thereunder, administered and enforced by the Coast Guard are reported by Coast Guard personnel detecting such violations to the Commander of the Coast Guard district in which the alleged violations occurred. The alleged offender will be informed of the nature of the violation.

(b) The procedures for the assessment, collection, remission, or mitigation are set forth in §§ 2.50-1 to 2.50-40 of Subchapter A (Procedures Applicable to the Public) of this chapter.

Subpart 26.15—Boarding

§ 26.15-1 May board at any time.

(a) In addition to any other authority provided by law, the boarding of vessels

is authorized by subsection 8(c) of the Federal Boating Act of 1958 (46 U.S.C. 527e(c)), which reads as follows:

Commissioned, warrant, and petty officers of the Coast Guard may board any vessel required to be numbered under this Act at any time such vessel is found upon the navigable waters of the United States, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and the District of Columbia, or on the high seas, address inquiries to those on board, require appropriate proof of identification therefrom, examine the certificate of number issued under this Act, or in the absence of such certificate require appropriate proof of identification of the owner of the vessel, and, in addition, examine such vessel for compliance with this Act, the Act of April 25, 1940, as amended, and the applicable rules of the road.

(b) To facilitate the boarding of vessels by the commissioned, warrant, and petty officers of the Coast Guard in the exercise of their authority, every vessel subject to the Federal Boating Act of 1958, or the Act of April 25, 1940, as amended (46 U.S.C. 526-526u), if under way and upon being hailed by a Coast Guard vessel or patrol boat, shall stop immediately and lay to, or shall maneuver in such a way as to permit the boarding officer to come aboard. Failure to stop to permit a boarding officer to board a vessel or refusal to comply will subject the operator or owner to penalties provided in these laws.

(c) Coast Guard boarding vessels will be identified by the display of the Coast Guard ensign as a symbol of authority and the Coast Guard personnel will be dressed in Coast Guard uniform. The Coast Guard boarding officer upon boarding a vessel will identify himself to the master, owner, or operator and explain his mission.

(Interpret or apply sec. 7, 72 Stat. 1757; 46 U.S.C. 527d. Treasury Department Order 167-32, Sept. 23, 1958, 23 F.R. 7605)

Subpart 26.20—Exhibition of Motorboat Operator's License

§ 26.20-1 Must be available.

(a) Any person to whom a license as a motorboat operator has been issued shall have such license in his possession and available for immediate production to any Coast Guard boarding officer at all times during which any vessel which he is operating is carrying passengers for hire.

(Sec. 7, 54 Stat. 165, as amended; 46 U.S.C. 526f. Treasury Department Order 167-20, June 18, 1956, 21 F.R. 4894)

Subpart 26.25—Crew Requirements

§ 26.25-1 Licensed personnel.

(a) Every motorboat, as defined by the Act of April 25, 1940, as amended (46 U.S.C. 526), and any other vessel of fifteen gross tons or less propelled by machinery other than steam, while carrying passengers for hire, shall be operated or navigated by a person duly licensed for such service by the Coast Guard. This licensed operator shall be in charge of such motorboat or vessel, regardless of whether or not the passengers carried for hire are on such motorboat or vessel or are carried on a nonself-propelled

vessel being towed or pushed by such motorboat or vessel. See § 157.30-30 of Subchapter P (Manning of Vessels) for special provisions with regard to use of superior licenses for motorboat operator's license.

(b) Certain uninspected vessels of 200 gross tons and upward are required to carry licensed officers. For details of these provisions see Subchapter P (Manning of Vessels) of this chapter, and the applicable law.

§ 26.25-5 Manning.

(a) Certain provisions with regard to requirements for able seamen, division of crew into watches, and citizenship of crew which are contained in various navigation and vessel inspection laws may apply to uninspected vessels operating on ocean, coastwise or Great Lakes waters. For details of these provisions see Subchapter P (Manning of Vessels) of this chapter and the applicable law.

SUBCHAPTER D—TANK VESSELS

PART 30—GENERAL PROVISIONS

Subpart 30.01—Administration

- Sec. 30.01-1 Basis and purpose of regulations—TB/ALL.
- 30.01-5 Application of regulations—TB/ALL.
- 30.01-6 Application of regulations to tankships on an international voyage—T/ALL.
- 30.01-7 Ocean or unlimited coastwise vessels on inland and Great Lakes Routes—TB/OC.
- 30.01-10 Application of regulations governing alterations or repairs—TB/ALL.
- 30.01-15 Effective date of regulations—TB/ALL.
- 30.01-20 Portable containers—interpretive rulings—TB/ALL.

Subpart 30.10—Definitions

- 30.10-1 Definition of terms—TB/ALL.
- 30.10-3 Approved—TB/ALL.
- 30.10-5 Cargo—TB/ALL.
- 30.10-7 Certificated—TB/ALL.
- 30.10-9 Classification requirements—TB/ALL.
- 30.10-11 Coastwise—TB/C.
- 30.10-13 Cofferdam—TB/ALL.
- 30.10-15 Combustible liquid—TB/ALL.
- 30.10-17 Commandant—TB/ALL.
- 30.10-19 Coast Guard District Commander—TB/ALL.
- 80.10-21 Flammable or inflammable—TB/ALL.
- 30.10-22 Flammable liquid—TB/ALL.
- 30.10-23 Flame arrester—TB/ALL.
- 30.10-25 Flame screen—TB/ALL.
- 30.10-27 Flashpoint—TB/ALL.
- 30.10-29 Gas free—TB/ALL.
- 30.10-31 General rules and regulations—TB/ALL.
- 30.10-33 Great Lakes—TB/L.
- 30.10-35 Headquarters—TB/ALL.
- 30.10-36 International voyage—TB/ALL.
- 30.10-39 Liquefied flammable gas—TB/ALL.
- 30.10-41 Lakes, bays, and sounds—TB/B.
- 30.10-43 Marine inspector or inspector—TB/ALL.
- 30.10-44 Nuclear vessel—TB/ALL.
- 30.10-45 Ocean—TB/O.
- 30.10-47 Officer in Charge, Marine Inspection—TB/ALL.
- 30.10-49 Permit—TB/ALL.

- Sec.
- 30.10-55 Pressure vacuum relief valve—TB/ALL.
- 30.10-57 Recognized classification society—TB/ALL.
- 30.10-59 Reid vapor pressure—TB/ALL.
- 30.10-61 Rivers—TB/R.
- 30.10-62 Rules of the Road—TB/ALL.
- 30.10-63 Spark arrester—TB/ALL.
- 30.10-65 Tank barge—B/ALL.
- 30.10-67 Tankship—T/ALL.
- 30.10-69 Tank vessel—TB/ALL.
- 30.10-71 Tankerman—TB/ALL.

Subpart 30.15—Equivalents

- 30.15-1 Conditions under which equivalents may be used—TB/ALL.

Subpart 30.20—Enforcement and Rights of Appeal

- 30.20-1 Enforcement—TB/ALL.
- 30.20-10 Penalties for violations of tank vessel regulations—TB/ALL.
- 30.20-50 Right of appeal—TB/ALL.

AUTHORITY: The provisions of this Part 30 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply sec. 3, 68 Stat. 675; 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026, unless otherwise noted.

Subpart 30.01—Administration

§ 30.01-1 Basis and purpose of regulations—TB/ALL.

By virtue of authority vested in the Commandant of the Coast Guard by Treasury Department Order No. 120, dated July 31, 1950 (15 F.R. 6521), and in accordance with R.S. 4405 and 4417a, as amended, and sec. 3(c) of the Act of August 9, 1954 (46 U. S. C. 375, 391a, 50 U. S. C. 198), the rules and regulations in this subchapter are prescribed for all tank vessels in accordance with the intent of the various statutes and to obtain their correct and uniform administration.

§ 30.01-5 Application of regulations—TB/ALL.

(a) The regulations in this subchapter contain requirements for materials, design construction, inspection, manning, and operation of tank vessels, including handling and stowage of cargo and duties of officers and crew. However, vessels certificated as passenger, cargo or miscellaneous vessels, where the principal purpose or use of the vessel is not for the carriage of flammable or combustible liquid cargo in bulk, may be granted a permit to carry limited quantities of flammable or combustible liquid cargo in bulk in the grades indicated:

(1) Passenger vessels:

(i) Grade E in integral tanks or in approved portable containers of the type described in Subpart 98.35 in Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

(ii) Grade D in portable containers in accordance with Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

(2) Cargo vessels:

(i) Grades D and E in integral tanks or in approved portable containers in accordance with Subpart 98.35 in Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

(ii) Grades A and lower in portable containers in accordance with Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

(3) Miscellaneous vessels, such as cable, salvage, pile driving, and oil drilling rig vessels:

(i) Grades B and lower in fixed independent or integral tanks when specially authorized by the Commandant.

(b) The requirements of this subchapter are divided into parts as follows:

- (1) Inspection and certification.
- (2) Special equipment, machinery, and hull requirements.
- (3) Lifesaving appliances.
- (4) Firefighting equipment.

- (5) Operations.
- (6) Elevated temperature cargoes.
- (7) Liquefied flammable gases.
- (8) Flammable or combustible liquids having lethal characteristics.
- (9) Special construction, arrangement, and other provisions for carrying certain flammable or combustible dangerous cargoes in bulk.

(c) The vessels and services to which each regulation applies are indicated by letters in the heading of the section or paragraph. The first letter or two letters indicate the type of vessel and the letter or letters following the oblique line indicate the waters in which such vessels may operate. These letters are described as follows:

- (1) "T" signifies a tankship.
- (2) "B" signifies a tank barge when it precedes an oblique line; or it signifies service on bays, sounds, and lakes other than the Great Lakes when it follows an oblique line.
- (3) "ALL" signifies service on all waters.
- (4) "O" signifies service on ocean waters.
- (5) "C" signifies services on coastwise waters.
- (6) "L" signifies service on Great Lakes' waters.
- (7) "R" signifies service on river waters.

(d) This subchapter shall be applicable to all United States flag vessels indicated in Column 3 of Table 30.01-5(d), except as follows:

- (1) Any vessel operating exclusively on inland waters which are not navigable waters of the United States.
- (2) Any vessel while laid up and dismantled and out of commission.
- (3) With the exception of vessels of the U. S. Maritime Administration, any vessel with title vested in the United States and which is used for public purposes.

TABLE 30.01-5(d)

Method of propulsion	Size or other limitations ¹	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations ¹			
		Vessels inspected and certificated under Subchapter D—Tank Vessels ¹	Vessels inspected and certificated under either Subchapter H—Passenger Vessels ^{2,3,4} or Subchapter T—Small Passenger Vessels ^{2,3,4}	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels ^{2,4}	Vessels subject to provisions of Subchapter C—Uninspected Vessels ^{1,5}
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam.....	Vessels not over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	All tugboats and towboats.	All vessels except those covered by columns 3, 4 and 5. ⁸
	Vessels over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk. ⁸	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers. ⁷ 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, may carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.

See footnotes at end of table.

TABLE 30.01-5(d)—Continued

Method of propulsion	Size or other limitations ¹	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations ¹			
		Vessels inspected and certificated under Subchapter D—Tank Vessels ²	Vessels inspected and certificated under either Subchapter H—Passenger Vessels ^{3,4,5} or Subchapter T—Small Passenger Vessels ^{6,7,8}	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels ⁹	Vessels subject to provisions of Subchapter C—Uninspected Vessels ¹⁰
Column 1	Column 2	Column 4	Column 4	Column 5	Column 6
Motor.....	Vessels of not over 15 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. ¹	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers. ⁷ 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. ¹	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail.....	Vessels not over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire.	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	None.
Nonself-propelled....	Vessels not over 100 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. ⁷	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All barges carrying passengers except those covered by column 4.

¹ Where length is used in this table it means the length measured from end to end over the deck, excluding sheer. This expression "means a straight line measurement of the overall length from the foremost part of the vessel to the aftermost part of the vessel, measured parallel to the centerline."

² Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Dangerous Cargoes), of this chapter may also be applicable under certain conditions.

³ Public nautical schoolships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical schoolships, as defined by 46 U.S.C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

⁴ Subchapter H (Passenger Vessels) of this chapter covers only those vessels of 100 gross tons or more. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of less than 100 gross tons.

⁵ Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of flammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the flammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

⁶ Any vessel on an international voyage is subject to the requirements of the International Convention for Safety of Life at Sea, 1960.

⁷ The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U.S.C. 390).

⁸ Boilers and machinery are subject to examination on vessels over 40 feet in length.

(e) This subchapter shall be applicable to all foreign flag vessels carrying combustible or flammable liquid cargo in bulk while in the navigable waters over which the United States has jurisdiction, except that:

(1) A vessel of a foreign nation signatory to the International Convention for Safety Of Life At Sea, 1960, which has on board a current valid Safety Equipment Certificate; or a vessel of a foreign nation having inspection laws approximating those of the United States, together with reciprocal inspection arrangements with the United States and which has on board a current valid Certificate of Inspection issued by its government under such arrangements; in either case, shall be subject only to the requirements of § 35.01-1 of Subpart

35.01, and the safety and cargo handling requirements in Subparts 35.30 and 35.35.

(f) Notwithstanding the exceptions previously noted in paragraph (e) of this section, foreign vessels of novel design or construction, or whose operation involves potential unusual risks, shall be subject to inspection to the extent necessary to safeguard life and property in United States ports, as further provided by § 2.01-13 of Subchapter A (Procedures applicable to the Public) of this chapter.

§ 30.01-6 Application of regulations to tankships on an international voyage—T/ALL.

(a) Where, in various places or portions of this subchapter, requirements are stipulated specifically for "tankships

on an international voyage," it is intended that these requirements apply only to tankships subject to the International Convention for Safety of Life at Sea, 1960, which are mechanically propelled tankships of 500 gross tons and over on an international voyage, as defined in § 30.10-36.

(b) In accordance with Regulation 4, Chapter I (General Provisions), of the International Convention for Safety of Life at Sea, 1960, a tankship which is not normally engaged on an international voyage but which in exceptional circumstances, is required to undertake a single international voyage, may be exempted by the Commandant from any of the requirements of the regulations of this Convention: *Provided*, That it complies with safety requirements which are

adequate, in his opinion, for the voyage which is to be undertaken.

(c) In accordance with Regulation 1(c), Chapter II (Construction), of the International Convention for Safety of Life at Sea, 1960, the Commandant may, if he considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of Chapter II of this Convention unreasonable or unnecessary, exempt from those requirements individual tankships or classes of tankships, which in the course of their voyage do not proceed more than 20 miles from the nearest land.

(d) In accordance with Regulation 3(a), Chapter III (Lifesaving Appliances, etc.), of the International Convention for Safety of Life at Sea, 1960, the Commandant, if he considers that the sheltered nature and conditions of the voyage are such as to render the application of the full requirements of Chapter III of this Convention unreasonable or unnecessary, may to that extent exempt from the requirements of Chapter III individual tankships or classes of tankships which, in the course of their voyage, do not go more than 20 miles from the nearest land.

§ 30.01-7 Ocean or unlimited coastwise vessels on inland and Great Lakes Routes—TB/OC.

(a) Vessels inspected and certificated for ocean or unlimited coastwise routes shall be considered suitable for navigation insofar as the provisions of this subchapter are concerned on any inland route, including the Great Lakes.

§ 30.01-10 Application of regulations governing alterations or repairs—TB/ALL.

When major alterations or major repairs of tank vessels become necessary the work shall be done under the direction of the Officer in Charge, Marine Inspection, and shall be in accordance with the regulations in effect for new construction insofar as possible. When minor alterations or minor repairs of tank vessels become necessary such work shall be under the direction of the Officer in Charge, Marine Inspection, and shall be in accordance with the regulations in effect at the time the vessel was contracted for or built, or in accordance with the regulations in effect for new construction insofar as possible.

§ 30.01-15 Effective date of regulations—TB/ALL.

(a) The regulations in this subchapter are effective on and after November 10, 1936: *Provided*, That amendments, revisions, or additions shall become effective ninety (90) days after the date of publication in the FEDERAL REGISTER unless the Commandant shall fix a different time.

(b) The regulations in this subchapter are not retroactive in effect unless specifically made so at the time the regulations are issued. Changes in specification requirements of articles of equipment, or materials used in construction of tank vessels, shall not apply to such items which have been passed as satis-

factory until replacement shall become necessary, unless a specific finding is made that such equipment or material used is unsafe or hazardous and has to be removed from tank vessels.

§ 30.01-20 Portable containers—interpretive rulings—TB/ALL.

(a) The phrase "drums, barrels, or other packages," as used in R.S. 4417a, as amended (46 U.S.C. 391a), and in R.S. 4472, as amended (46 U.S.C. 170), is interpreted to mean portable containers having a maximum capacity of 110 U.S. gallons and ICC specification cylinders having a water capacity of not more than 1,000 pounds, which are actually loaded and discharged from vessels with their contents intact.

(b) The phrase "inflammable or combustible liquid cargo in bulk" as used in R.S. 4417a, as amended (46 U.S.C. 391a), and in R.S. 4472, as amended (46 U.S.C. 170), is interpreted to include such cargo in portable containers of a capacity of more than 110 U.S. gallons.

(c) The phrase "liquid cargo" as used in R.S. 4417a, as amended (46 U.S.C. 391a), is interpreted to mean flammable or combustible liquids.

(Interpret or apply R.S. 4472, as amended; 46 U.S.C. 170)

Subpart 30.10—Definitions

§ 30.10-1 Definition of terms—TB/ALL.

Certain terms used in the regulations in this subchapter are defined in this subpart.

§ 30.10-3 Approved—TB/ALL.

The term "approved" means approved by the Commandant unless otherwise stated.

§ 30.10-5 Cargo—TB/ALL.

The term "cargo" means combustible liquid, flammable liquid, or liquefied flammable gas unless otherwise stated.

§ 30.10-7 Certificated—TB/ALL.

The term "certificated" when applied to tank vessels refers to a vessel covered by a certificate of inspection issued by the Coast Guard; when applied to men employed on tank vessels, the term refers to a certificate of ability issued by the Coast Guard.

§ 30.10-9 Classification requirements—TB/ALL.

The term "classification requirements" means applicable rules and supplementary requirements of the American Bureau of Shipping, or other recognized classification society.

§ 30.10-11 Coastwise—TB/C.

Under this designation shall be included all tank vessels normally navigating the waters of any ocean or the Gulf of Mexico 20 nautical miles or less offshore.

§ 30.10-13 Cofferdam—TB/ALL.

The term "cofferdam" means a void or empty space separating two or more compartments for the purpose of isolation or to prevent the contents of one

compartment from entering another in the event of the failure of the walls of one to retain their tightness.

§ 30.10-15 Combustible liquid—TB/ALL.

The term "combustible liquid" means any liquid having a flashpoint above 80° F. (as determined from an open-cup tester, as used for test of burning oils). Combustible liquids having lethal qualities are those having the characteristics of class "B" or "C" poisons as defined in §§ 146.25-10 and 146.25-15 of Subchapter N (Dangerous Cargoes) of this chapter. In the regulations of this subchapter, combustible liquids are referred to by grades, as follows:

(a) *Grade D.* Any combustible liquid having a flashpoint below 150° F. and above 80° F.

(b) *Grade E.* Any combustible liquid having a flashpoint of 150° F. or above.

§ 30.10-17 Commandant—TB/ALL.

The term "Commandant" means the Commandant of the Coast Guard.

§ 30.10-19 Coast Guard District Commander—TB/ALL.

The term "Coast Guard District Commander" means an officer of the Coast Guard designated as such by the Commandant to command all Coast Guard activities within his district which include the enforcement and administration of Title 52, R.S., acts amendatory thereof or supplemental thereto, rules and regulations thereunder and the inspections required thereby.

§ 30.10-21 Flammable or inflammable—TB/ALL.

The words "flammable" and "inflammable" are interchangeable or synonymous terms for the purpose of the regulations in this subchapter.

§ 30.10-22 Flammable liquid—TB/ALL.

The term "flammable liquid" means any liquid which gives off flammable vapors (as determined by flashpoint from an open-cup tester, as used for test of burning oils) at or below a temperature of 80° F. Flammable liquids having lethal qualities are those having the characteristics of class "B" or "C" poisons as defined in §§ 146.25-10 and 146.25-15, of Subchapter N (Dangerous Cargoes) of this chapter. Flammable liquids are referred to by grades as follows:

(a) *Grade A.* Any flammable liquid having a Reid¹ vapor pressure of 14 pounds or more.

(b) *Grade B.* Any flammable liquid having a Reid vapor pressure under 14 pounds and over 8½ pounds.

(c) *Grade C.* Any flammable liquid having a Reid¹ vapor pressure of 8½ pounds or less and a flashpoint of 80° F. or below.

¹ American Society for Testing Materials Standard D-323 (most recent revision), Method of Test for Vapor Pressure of Petroleum Products (Reid Method).

§ 30.10-23 Flame arrester—TB/ALL.

The term "flame arrester" means any device or assembly of a cellular, tubular, pressure, or other type used for preventing the passage of flames into enclosed spaces.

§ 30.10-25 Flame screen—TB/ALL.

The term "flame screen" means a fitted single screen of corrosion-resistant wire of at least 30 by 30 mesh, or two fitted screens, both of corrosion-resistant wire, of at least 20 by 20 mesh, spaced not less than 1/2 inch or more than 1 1/2 inches apart.

§ 30.10-27 Flashpoint—TB/ALL.

The term "flashpoint" indicates the temperature in degrees Fahrenheit at which a liquid gives off a flammable vapor when heated in an open-cup tester. For the purpose of the regulations in this subchapter, flashpoints determined by other testing methods will be equivalent to those determined with an open-cup tester, as follows:

TABLE 30.10-27—EQUIVALENT FLASHPOINTS

Open cup tester	Tag closed-cup tester (A. S. T. M.)	Pensky-Martens closed tester (A. S. T. M.)
°F. 80 150	°F. 75 -----	°F. ----- 140

§ 30.10-29 Gas free—TB/ALL.

The term "gas free" means free from dangerous concentrations of flammable or toxic gases.

§ 30.10-31 General rules and regulations—TB/ALL.

The term "general rules and regulations" means the requirements contained in this chapter.

§ 30.10-33 Great Lakes—TB/L.

Under this designation shall be included all tank vessels navigating the Great Lakes.

§ 30.10-35 Headquarters—TB/ALL.

The term "Headquarters" means the Office of the Commandant, U.S. Coast Guard, Washington, D.C., 20226.

§ 30.10-36 International voyage—TB/ALL.

(a) The term "international voyage," as used in this subchapter, shall have the same meaning as that contained in Regulation 2(d), Chapter I, of the International Convention for Safety of Life at Sea, 1960; i.e., "International voyage" means a voyage from a country to which the present Convention applies to a port outside such country, or conversely; and for this purpose every territory for the international relations of which a Contracting Government is responsible or for which the United Nations is the administering authority is regarded as a separate country."

(b) The International Convention for Safety of Life at Sea, 1960, does not apply to tank vessels "solely navigating the Great Lakes of North America and the River St. Lawrence as far east as a straight line drawn from Cap de Rosiers

to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63d Meridian." Accordingly, such tank vessels shall not be considered as being on an "international voyage" for the purposes of this subchapter.

(c) For the purposes of this subchapter the term "territory" as used in paragraph (a) of this section shall be considered to include the Commonwealth of Puerto Rico, the Canal Zone, all possessions of the United States, and all lands held by the United States under a protectorate or mandate.

(d) Although voyages between the continental United States and Hawaii or Alaska, and voyages between Hawaii and Alaska are not "international voyages" under the provisions of the International Convention for Safety of Life at Sea, 1960, such voyages are similar in nature and shall be considered as "international voyages" and subject to the same requirements for the purposes of this subchapter.

§ 30.10-39 Liquefied flammable gas—TB/ALL.

The term "liquefied flammable gas" means any flammable gas having a Reid vapor pressure exceeding 40 pounds which has been compressed and liquefied for the purpose of transportation.

§ 30.10-41 Lakes, bays, and sounds—TB/B.

Under this designation shall be included all tank vessels navigating the waters of any of the lakes, bays, or sounds other than the waters of the Great Lakes.

§ 30.10-43 Marine inspector or inspector—TB/ALL.

The terms "marine inspector" or "inspector" mean any person from the civilian or military branch of the Coast Guard assigned under the superintendence and direction of an Officer in Charge, Marine Inspection, or any other person as may be designated for the performance of duties with respect to the enforcement and administration of Title 52, R.S., acts amendatory thereof or supplemental thereto, rules and regulations thereunder, and the inspections required thereby.

§ 30.10-44 Nuclear vessel—TB/ALL.

A nuclear vessel is a vessel provided with a nuclear powerplant for propulsion or any other purpose, or any vessel handling or processing substantial amounts of radioactive material other than as cargo.

§ 30.10-45 Ocean—TB/O.

Under this designation shall be included all tank vessels normally navigating the waters of any ocean or the Gulf of Mexico more than 20 nautical miles offshore.

§ 30.10-47 Officer in Charge, Marine Inspection—TB/ALL.

The term "Officer in Charge, Marine Inspection," means any person from the civilian or military branch of the Coast Guard designated as such by the Commandant and who under the superin-

tendence and direction of the Coast Guard District Commander is in charge of an inspection zone for the performance of duties with respect to the enforcement and administration of Title 52, R.S., acts amendatory thereof or supplemental thereto, rules and regulations thereunder and the inspections required thereby.

§ 30.10-49 Permit—TB/ALL.

The term "permit" refers to endorsement on the certificate of inspection, authorizing the presence on board of liquid flammable or combustible cargoes in bulk, issued by an Officer in Charge, Marine Inspection, for a tank vessel which is found to be in substantial compliance with the regulations in this subchapter.

§ 30.10-55 Pressure vacuum relief valve—TB/ALL.

The term "pressure vacuum relief valve" means any device or assembly of a mechanical, liquid, weight, or other type used for the automatic regulation of pressure or vacuum in enclosed places.

§ 30.10-57 Recognized classification society—TB/ALL.

The term "recognized classification society" means the American Bureau of Shipping or other classification society recognized by the Commandant.

§ 30.10-59 Reid vapor pressure—TB/ALL.

The term "Reid vapor pressure" means the vapor pressure of a liquid at a temperature of 100° F., expressed in pounds per square inch absolute, as determined by the "Reid Method" as described in the American Society for Testing Materials Standard D-323 (most recent revision), Method of Test for Vapor Pressure of Petroleum Products. This Standard is available at Headquarters for reading purposes or it may be purchased from the Society at 1916 Race Street, Philadelphia, Pa., 19103.

§ 30.10-61 Rivers—TB/R.

Under this designation shall be included all tank vessels whose navigation is restricted to rivers and/or to canals, exclusively.

§ 30.10-62 Rules of the Road—TB/ALL.

(a) The term "Rules of the Road" means the statutory and regulatory rules governing navigation of vessels. These rules are also published by the Coast Guard in pamphlet form as follows:

- (1) Rules of the Road—International—Inland (CG-169).
- (2) Rules of the Road—Great Lakes (CG-172).
- (3) Rules of the Road—Western Rivers (CG-184).

(b) The current editions of the "Rules of the Road" pamphlets may be obtained from any Marine Inspection Office.

§ 30.10-63 Spark arrester—TB/ALL.

The term "spark arrester" means any device, assembly, or method of a mechanical, centrifugal, cooling, or other type

and of a size suitable for the retention or quenching of sparks in exhaust pipes from internal combustion engines.

§ 30.10-65 Tank barge—B/ALL.

The term "tank barge" means any tank vessel not equipped with means of self-propulsion.

§ 30.10-67 Tankship—T/ALL.

The term "tankship" means any tank vessel propelled by power or sail.

§ 30.10-69 Tank vessel—TB/ALL.

The term "tank vessel" means any vessel especially constructed or converted to carry liquid bulk cargo in tanks.

§ 30.10-71 Tankerman—TB/ALL.

The term "tankerman" means any person holding a certificate issued by the Coast Guard attesting to his competency in the handling of flammable or combustible liquid cargo in bulk or is any person holding a valid license as master, mate, pilot, or engineer.

Subpart 30.15—Equivalents

§ 30.15-1 Conditions under which equivalents may be used—TB/ALL.

(a) Where in this subchapter it is provided that a particular fitting, material, appliance, apparatus, or equipment, or type thereof, shall be fitted or carried in a vessel, or that any particular provision shall be made or arrangement shall be adopted, the Commandant may accept in substitution therefor any other fitting, material, apparatus, or equipment, or type thereof, or any other arrangement: *Provided*, That he shall have been satisfied by suitable trials that the fitting, material, appliance, apparatus, or equipment, or type thereof, or the provision or arrangement is at least as effective as that specified in this subchapter.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, or arrangement not specifically required by law is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, or arrangement to such an extent and upon such conditions as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

Subpart 30.20—Enforcement and Rights of Appeal

§ 30.20-1 Enforcement—TB/ALL.

The Officer in Charge, Marine Inspection, under the superintendence of the Coast Guard District Commander, is responsible for the performance of duties within his jurisdiction with respect to the enforcement and administration of Title 52, R. S., acts amendatory thereof or supplemental thereto, rules and regulations thereunder, and the inspections required thereby.

§ 30.20-10 Penalties for violations of tank vessel regulations—TB/ALL.

(a) The provisions of R.S. 4417a, as amended (46 U.S.C. 391a) provide the following penalty:

(7) The owner, master, or person in charge of any vessel subject to the provisions in this section, or any or all of them, who shall violate the provisions of this section, or of the rules and regulations established hereunder, shall be subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both such fine and penalty.

(b) Certificates of inspection for tank vessels may also be revoked or suspended by the Coast Guard where such process is authorized by law. This may occur if the vessel does not meet the requirements of law or regulations in this chapter or if there is a failure to maintain the safety requirements requisite to the issuance of a certificate of inspection.

§ 30.20-50 Right of appeal—TB/ALL.

Whenever any person directly interested in or affected by any decision or action of any Officer in Charge, Marine Inspection, shall feel aggrieved by such decision or action, he may appeal therefrom to the Coast Guard District Commander having jurisdiction and a like appeal shall be allowed from any decision or action of the Coast Guard District Commander to the Commandant, whose decision shall be final: *Provided, however*, That application for such reexamination of the case by a Coast Guard District Commander or by the Commandant shall be made within 30 days after the decision or action appealed from shall have been rendered or taken.

(R.S. 4453, as amended; 46 U.S.C. 435)

PART 31—INSPECTION AND CERTIFICATION

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AUTHORITY: The provisions of this Part 31 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply sec. 3, 68 Stat. 875; 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026, unless otherwise noted.

Subpart 31.01—General

§ 31.01-1 Inspections required—TB/ALL.

(a) Every tank vessel subject to the regulations in this subchapter shall be inspected biennially, or annually, or oftener, if necessary, by the Coast Guard to see that the hull, boilers, machinery, equipment, apparatus for storage, and appliances of the vessel comply with the marine inspection laws, and the regulations in this subchapter, and Subchapter E (Load Lines), Subchapter F (Marine Engineering), Subchapter J (Electrical Engineering), and Subchapter Q (Specifications) of this chapter where applicable.

(b) Tank vessels while laid up and dismantled and out of commission are exempt from any or all inspections required by law or regulations in this subchapter.

(c) For inspection and tests of tanks containing certain dangerous cargoes in bulk, see Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

(R.S. 4418, as amended, 4433, as amended, 4472, as amended, 4488, as amended; 46 U.S.C. 392, 411, 170, 481. Treasury Department Orders CGFR 56-28, July 24, 1956, 21 F.R. 5659; 167-38, Oct. 26, 1959, 24 F.R. 8857)

§ 31.01-5 Scope of initial inspection—TB/ALL.

(a) The initial inspection, which may consist of a series of inspections during the construction of a vessel, shall include a complete inspection of the structure, machinery, and equipment, including the outside of the vessel's bottom, and the inside and outside of the boilers. The inspection shall be such as to insure that the arrangements, materials, and scantlings of the structure, boilers and other pressure vessels and their appurtenances, piping, main and auxiliary machinery, electrical installations, lifesaving appliances, fire-detecting and extinguishing equipment, pilot ladders and other equipment fully comply with the applicable regulations for such vessel and are in accordance with approved plans, and that the radio installations, including fixed and portable radios for lifeboats, are in accordance with the requirements

of the Federal Communications Commission. The inspection shall also be such as to insure that the workmanship of all parts of the vessel and its equipment is in all respects satisfactory and that the vessel is provided with lights, means of making sound signals and distress signals as required by applicable regulations and the applicable Rules of the Road.

(b) For nuclear vessels, the foregoing inspection shall be made except insofar as they may be limited by the presence of radiation. In addition, the inspection shall include any special requirements of the vessel's "Safety Assessment."

§ 31.01-10 Authority of marine inspectors—TB/ALL.

Inspectors may at any time lawfully inspect any tank vessel.

§ 31.01-15 Application for inspection—TB/ALL.

(a) Application in writing for the inspection incident to the issuance or reissuance of a certificate of inspection to every tank vessel required to be inspected by law and the regulations in this subchapter shall be made by the master, owner, or agent to the Officer in Charge, Marine Inspection, at any local marine inspection office, U.S. Coast Guard, where the vessel may be operated.

(b) The application should be on Form CG-3752, Application for Inspection of U.S. Vessel, which requires information on name and type of vessel, nature of employment and route in which to be operated, grade or type of cargo to be carried, place where and date when the vessel may be inspected, and that no other application has been made to any Officer in Charge, Marine Inspection, since the issuance of the last valid certificate of inspection.

§ 31.01-20 Application for inspection of new tank vessel or conversion of a vessel to a tank vessel—TB/ALL.

Prior to the commencement of the construction of any new tank vessel, or prior to the commencement of the conversion of any vessel to a tank vessel, application for the approval of contract plans and specifications and for a certificate of inspection shall be made in writing to the Coast Guard and no such construction or conversion shall be proceeded with until such approval is granted. (See § 31.10-1.)

Subpart 31.05—Certificates of Inspection

§ 31.05-1 Issuance of certificate of inspection—TB/ALL.

(a) When a tank vessel is found to comply with law and the regulations in this subchapter, and Subchapter E (Load Lines), Subchapter F (Marine Engineering), Subchapter J (Electrical Engineering), and Subchapter Q (Specifications) of this chapter, a certificate of inspection shall be issued to it, or to its owners, by the Officer in Charge, Marine Inspection.

(b) Certificates of inspection for tank vessels shall be similar in form to certifi-

cates issued to other cargo vessels, and in addition to the manning requirements and waters over which they may be operated, they shall be appropriately endorsed "Inspected and approved for the carriage of flammable or combustible liquids of Grade A, B, C, D, or E" (as the case may be), and such endorsement shall serve as a permit for such vessel to operate. The endorsement for the carriage of liquefied flammable gases is set forth in § 38.01-5 of this subchapter. The endorsement for the carriage of Class "B" or "C" poisonous liquids is set forth in § 39.01-5 of this subchapter.

(c) The certificate of inspection shall be delivered to the master or owner of the tank vessel to which it relates.

§ 31.05-5 Posting the certificate of inspection—TB/ALL.

The certificate of inspection shall be framed under glass and posted in a conspicuous part of the vessel, except that where it is not practicable to so expose the certificate of inspection it shall be carried in the vessel in such manner as authorized by the Officer in Charge, Marine Inspection.

§ 31.05-10 Period covered by certificate of inspection—TB/ALL.

(a) Certificates of inspection will be issued for periods of either 1 or 2 years. For nuclear vessels, the period of validity shall be 1 year.

(b) Application may be made by the master, owner, or agent for inspection and issuance of a new certificate of inspection at any time during the period of validity of the current certificate. (See §§ 31.01-15 and 31.01-20.)

§ 31.05-15 Certificate of inspection; terms; endorsements—TB/ALL.

The terms, endorsements and conditions set forth on a certificate of inspection shall have the same force and effect as the regulations contained in this subchapter.

Subpart 31.10—Inspections

§ 31.10-1 Recognized classification society—TB/ALL.

(a) In the inspection of hulls, boilers, and machinery, the current standards established 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.

(b) The current standards established by the American Bureau of Shipping in effect at the time of construction of the vessel, or otherwise as applicable, shall be used. The book "Rules for Building and Classing Steel Vessels" is usually published annually and may be purchased from the American Bureau of Shipping, 45 Broad Street, New York, N.Y., 10004. These standards may be also examined at the office of the Commandant (M), U. S. Coast Guard, Washington, D.C., 20236, or at the office of any Coast Guard District Commander or Officer in Charge, Marine Inspection.

(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.

§ 31.10-5 Inspection of new tank vessels—TB/ALL.

(a) *Plans.* Triplicate copies of contract plans and specifications shall be forwarded to the Officer in Charge, Marine Inspection, in whose district the construction will take place, for submission to Headquarters for approval, but if the tank vessel is to be classed, such plans and specifications shall first be approved by a recognized classification society. If the plans and specifications are found to be in substantial agreement with the regulations in this chapter, they shall be approved, properly stamped and dated and distributed as follows: one set to owner or builder; one set to Officer in Charge, Marine Inspection, of the district in which the vessel is to be built; and one set shall be retained at Headquarters. If such plans and specifications are not approved, Headquarters shall notify the owner or builder promptly wherein they fail to comply with the regulations in this chapter. For list of electrical plans see § 111.05-5 of Subchapter J (Electrical Engineering) of this chapter.

(1) The plans and specifications shall include the arrangement of the cargo gear. The principal details of the gear and the safe working load for each component part shall be shown. (See § 31.10-16 and Subpart 31.37 for applicable requirements.)

(b) *Inspection.* During construction, and upon completion of each tank vessel, it shall be inspected by the Officer in Charge, Marine Inspection, to determine whether it has been built in accordance with the approved plans and specifications, and, if so, a certificate of inspection endorsed as a permit for the carriage of flammable or combustible liquids in bulk for the proper grade or grades of cargo shall be issued to the vessel or its owner.

(c) *Certificate of class may be accepted.* In the event such tank vessel is classed by the American Bureau of Shipping or other recognized classification society, the approved plans and certificates of such society may be accepted by the Coast Guard as evidence of the structural efficiency of the hull and reliability of machinery, except as otherwise provided for by law and the rules and regulations in this subchapter.

§ 31.10-10 Vessels converted to tank vessels—TB/ALL.

The procedure for the inspection of vessels converted to tank vessels shall conform to the inspection for new tank vessels as called for in § 31.10-5(b), and such vessels shall comply with the requirements of inspections for converted

vessels as set forth in the regulations in this subchapter.

§ 31.10-15 Inspection for certification—TB/ALL.

(a) The Officer in Charge, Marine Inspection, shall once in every 2 years, at least, and in the case of nuclear vessels, at least once every year carefully inspect such tank vessel within his jurisdiction and shall satisfy himself that every such vessel so inspected is of a structure suitable for the carriage of flammable and/or combustible liquids in bulk and for the proper grade or grades of such cargo in the service in which she is employed. If the Officer in Charge, Marine Inspection, deems it expedient, he may direct the vessel to be put in motion, and may adopt any other suitable means to test her sufficiency and that of her equipment.

(b) The inspection for certification shall include an inspection of the structure, boilers, and other pressure vessels, machinery and equipment. The inspection shall be such as to insure that the vessel, as regards the structure, boilers and other pressure vessels and their appurtenances, piping, main and auxiliary machinery, electrical installations, life-saving appliances, fire-detecting and extinguishing equipment, pilot ladders, and other equipment is in satisfactory condition and fit for the service for which it is intended, and that it complies with the applicable regulations for such vessels, and that the radio installations, including fixed and portable radios for lifeboats, are in compliance with the requirements of the Federal Communications Commission. The lights and means of making sound signals and the distress signals carried by the vessel shall also be subject to the above mentioned inspection for certification for the purpose of insuring that they comply with the requirements of the applicable regulations and of the applicable Rules of the Road.

(c) For nuclear vessels, the foregoing inspections shall be made except insofar as they may be limited by the presence of radiation. In addition, the inspection shall include any special requirements of the vessel's "Safety Assessment."

§ 31.10-16 Inspection and certification of cargo gear—TB/ALL.

(a) An inspection of the cargo gear shall be required. The inspection may consist of tests and examinations to determine the condition and suitability of the cargo gear. Current valid certificates and registers of cargo gear, issued by recognized nonprofit organizations or associations approved by the Commandant may be accepted as prima facie evidence of the condition and suitability of the cargo gear. Cargo gear certificates and registers will not be issued by the Coast Guard.

(b) Every acceptable cargo gear certificate and/or register shall be properly executed by a person authorized to do so and shall:

- (1) Certify as to the tests and examinations conducted;
- (2) Show the dates on which the tests and examinations were conducted; and
- (3) Indicate that the cargo gear therein described complies with stand-

ards equal to or exceeding those set forth in Subpart 31.37.

(c) Competent persons for the purposes of this section and Subpart 31.37 are:

(1) Coast Guard marine inspectors;

(2) Surveyors of the organizations or associations approved by the Commandant;

(3) Such other persons as are authorized by the regulations in Subpart 31.37 as may be required; and,

(4) Responsible officials or employees of the testing laboratories, companies, or organizations who conduct tests of pieces of loose cargo gear, wire rope, or the annealing of gear as may be required.

(d) The registers issued in connection with cargo gear certification must have all required entries fully completed as of the dates indicated, shall be kept current, and shall include the following:

(1) A register of the cargo handling machinery and the gear accessory thereto carried on the vessel named therein;

(2) Certification of the testing and examination of winches, derricks, and their accessory gear;

(3) Certification of the testing and examination of cranes, hoists, and their accessory gear;

(4) Certification of the testing and examination of chains, rings, hooks, shackles, swivels, and blocks;

(5) Certification of the testing and examination of wire rope;

(6) Certification of the heat treatment of chains, rings, hooks, shackles, and swivels which require such treatment; and,

(7) Certification of the annual thorough examinations of gear not required to be periodically heat treated.

(e) It is the responsibility of the master to have a ship's officer inspect cargo gear when required by Subpart 31.37. For those inspected vessels which do not have valid cargo gear certificates and registers as provided by this section, such vessels will be required to have their shipboard cargo gear undergo tests and inspections in accordance with the provisions of Subpart 31.37.

§ 31.10-17 Reinspection—TB/ALL.

(a) At least one reinspection shall be made on each vessel holding a certificate of inspection valid for two years. This reinspection will be made, where possible, between the tenth and fourteenth month of the period for which the certificate is valid. No written application for reinspection will be required.

(b) The inspector shall examine all accessible parts of the vessel's hull, machinery, and equipment to be assured that it is in a satisfactory condition.

(c) In general, the scope of the reinspection shall be the same as for the inspection for certification, but will be in less detail unless it is determined that a major change has occurred since the last inspection.

(d) Nothing in this subpart shall be construed as limiting the inspector from making such tests or inspections as he deems necessary to be assured of the seaworthiness of the vessel.

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(e) If the reinspection reveals deficiencies in the maintenance as called for by the regulations in this subchapter, such necessary repairs or improvements shall be made as may be ordered.

§ 31.10-18 Firefighting equipment: General—TB/ALL.

(a) It shall be the duty of the owner, master, or person in charge of a tank vessel to require and have performed at least once in every 12 months, the tests and inspections of all hand portable fire extinguishers, semiportable fire extinguishing systems, and fixed fire extinguishing systems on board, as described in paragraphs (b), (c), and (d) of this section. The owner, master, or person in charge shall keep records of such tests and inspections showing the dates when performed, the number and/or other identification of each unit tested and inspected, and the name(s) of the person(s) and/or company conducting the tests and inspections. Such records shall be made available to the marine inspector upon request and shall be kept for the period of validity of the vessel's current certificate of inspection. Where practicable, these records should be kept in or with the vessel's logbook. The conduct of these tests and inspections does not relieve the owner, master, or person in charge of his responsibility to maintain this firefighting equipment in proper condition at all times.

(b) The following tests and inspections of portable fire extinguishing equipment shall be made:

TABLE 31.10-18(b)

Type unit	Test
Soda acid.....	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge.
Foam.....	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge.
Pump tank (water or antifreeze).	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge with clean water or antifreeze.
Cartridge operated (water, antifreeze or loaded stream).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Remove liquid, clean hose and inside of extinguisher thoroughly. Recharge with clean water, solution, or antifreeze. Insert charged cartridge.
Stored pressure (water, antifreeze or loaded stream).	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise determine that full charge is in extinguisher. Recharge if pressure is low or if extinguishing agent is needed.
Carbon dioxide.....	Weigh cylinders. Recharge if weight loss exceeds 10 percent of weight of charge. Inspect hose and nozzle to be sure they are clear. ¹
Dry chemical (cartridge-operated type).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Be sure dry chemical is freeflowing (not caked) and chamber contains full charge.
Dry chemical (stored pressure type).	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise determine that full charge of dry chemical is in extinguisher. Recharge if pressure is low or if dry chemical is needed.

See footnote at end of table.

TABLE 31.10-18(b)—Continued

Type unit	Test
Vaporizing liquid ² (pump type).	Pump a few strokes into clean pail and replace liquid. Keep water out of extinguisher or liquid. Keep extinguisher completely full of liquid.
Vaporizing liquid ² (stored pressure type).	See that pressure gage is in operating range. Weigh or check liquid level to determine that full charge of liquid is in extinguisher. Recharge if pressure is low or if liquid is needed.

¹ Cylinders shall be tested and marked in accordance with the regulations of the Interstate Commerce Commission, as noted in § 147.04-1 of Subchapter N (Dangerous Cargoes) of this chapter.

² Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or other toxic vaporizing liquids shall be removed from all vessels.

(c) The following tests and inspections of fixed fire extinguishing equipment shall be made:

TABLE 31.10-18(c)

Type system	Test
Foam.....	Systems utilizing a soda solution shall have such solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide.....	Weigh cylinders. Recharge if weight loss exceeds 10 percent of weight of charge. ¹

¹ Cylinders shall be tested and marked in accordance with the regulations of the Interstate Commerce Commission, as noted in § 147.04-1 of Subchapter N (Dangerous Cargoes) of this chapter.

(d) Deck foam systems shall be tested biennially by discharging foam for approximately 15 seconds from any nozzle designated by the marine inspector. It shall not be required to deliver foam from all foam outlets, but all lines and nozzles shall be tested with water to prove them to be clear of obstruction. Prior to the biennial inspection of deck foam systems utilizing a mechanical foam system, a representative sample of the foam liquid shall be submitted to the manufacturer who will issue a certificate indicating gravity, pH, percentage of water dilution and solid content.

(e) At each inspection for certification and at such other times as considered necessary, the inspector shall determine that all fire extinguishing equipment is in suitable condition and that the tests and inspections required by paragraphs (b) through (i) of this section have been conducted. In addition, the marine inspector may require such tests as are considered necessary to determine the condition of the equipment.

(f) On all fire extinguishing systems, all the piping, controls, valves, and alarms shall be checked by the marine inspector to ascertain that the system is in good operating condition.

(g) The fire main system shall be operated and the pressure checked at the most remote and highest outlets by the marine inspector. All fire hose shall be subjected to a test pressure equivalent to the maximum pressure to which they may be subjected in service, but not less than 100 p.s.i. The marine inspector shall check that the hose couplings are securely fastened in accordance with the regulations of this subchapter.

(h) At each inspection for certification and at such other times as considered necessary, all carbon dioxide cylinders for fixed, semiportable, and portable systems shall be examined and replaced if any corrosion is found. They shall also be checked by weighing to determine their contents, and if found to be more than 10 percent under the required contents of carbon dioxide, they shall be recharged.

(i) Steam smothering lines shall be tested with at least 50 pounds per square inch of air pressure or by blowing steam through the lines at the working pressure and a survey made for detecting corrosion and defects using hammer test or such other means as may be necessary.

§ 31.10-19 All firefighting equipment may be tested—TB/ALL.

(a) During the inspection of firefighting equipment, the Officer in Charge, Marine Inspection, may require fire apparatus to be tested, and used, except as provided under § 31.10-18(h) and 34.15-90(a) of this subchapter.

§ 31.10-20 Drydocking or hauling out—TB/ALL.

(a) Except for extensions as authorized by the Commandant, each steel hull tank vessel shall be placed in a drydock or on a slipway or hauled out for examination within the periods set forth in this paragraph, depending upon the service.

(1) Each tank vessel shall be drydocked or hauled out at intervals not to exceed 18 months if it operates in salt water an aggregate of more than 9 months in the 18-month period since it was last drydocked or hauled out.

(2) Each tank vessel shall be drydocked or hauled out at intervals not to exceed 36 months if it operates in salt water an aggregate of more than 3 months but not more than 6 months in each 12-month period since it was last drydocked or hauled out. When a tank vessel exceeds this aggregate amount of service in salt water in any 12-month period since it was last drydocked or hauled out, it shall be drydocked or hauled out within 6 months after the end of that period or within the 36-month interval, whichever is earlier.

(3) Each tank vessel shall be drydocked or hauled out at intervals of 48 months if it operates in salt water an aggregate of more than one month but not more than 3 months in each 12-month period since it was last drydocked or hauled out.

(4) Each tank vessel shall be drydocked or hauled out at intervals not to exceed 60 months if it operates in salt water an aggregate not exceeding one month in each 12-month period since it was last drydocked or hauled out.

(5) Tank barges used in fresh water service exclusively need not be drydocked or hauled out during the first 60-month interval after date of build, but shall be drydocked or hauled out between that time and the end of the 120th month after date of build, and at least once in each 60-month interval thereafter.

(b) Each wood hull tank vessel shall be placed in drydock or on a slipway or hauled out for examination at intervals not to exceed 48 months.

(c) Each tank vessel, irrespective of service which has not complied with these drydocking requirements, either because it was on voyage or was tied up, shall be drydocked or hauled out upon the completion of such voyage or before being placed in service.

(d) Whenever any tank vessel is placed in drydock or on a slipway or hauled out for repairs it shall be the duty of the master, owner, or agent to report the same, together with the nature of any repairs or alterations contemplated, to the Officer in Charge, Marine Inspection, of that zone, and if the condition or age of the vessel, in the judgment of the inspectors, renders an examination necessary, a thorough inspection shall be made by them to determine what is necessary to make such vessel seaworthy and come within the provisions of the regulations in this chapter.

(e) Sea chests, sea valves, sea strainers and bilge injection valves shall be examined at the time of the drydockings required by paragraphs (a), (b), and (c) of this section and shall be opened up for internal examination when deemed necessary by the Officer in Charge, Marine Inspection.

§ 31.10-23 Examination of tail shaft—T/OC.

The outboard shaft or shafts on every ocean or coastwise tankship shall be drawn for examination once at least in every 3 years: *Provided*, That if the circumstances warrant it, the Coast Guard District Commander may extend this time to the next regular drydocking period, not to exceed 4 months: *And provided further*, That when it is shown that a vessel has had a long period of lay-up, the Coast Guard District Commander may grant an extension equal to the time the vessel has been out of commission, but in no case shall the extension exceed 1 year.

§ 31.10-25 Inspection covering repairs and alterations involving safety—TB/ALL.

No extensive alterations involving the safety of a tank vessel either in regard to hull or machinery shall be made without the approval of the Commandant. Before such alterations are carried out, copies of plans and specifications in triplicate for the work involved shall be forwarded to the Officer in Charge, Marine Inspection, in whose zone the repairs will be made, for submission to Headquarters for approval. If approved one set of the plans and specifications, properly stamped and dated, shall be returned to the owner or to the repair yard designated by the owner; one set to the Officer in Charge, Marine Inspection, who forwarded the plans and specifications to Headquarters; and one set shall be retained at Headquarters. If such plans and specifications are not approved, the Commandant shall promptly notify the owner or designated shipyard wherein they fail to com-

ply with the regulations in this chapter. No extensive repairs to the hull or machinery which affect the safety of a vessel shall be made without the knowledge of the Officer in Charge, Marine Inspection.

§ 31.10-30 Stability requirements—TB/ALL.

(a) *Application.* The provisions of this section shall apply to the following tank vessels:

(1) Any tankship of 500 gross tons and over on an international voyage, construction or conversion of which is started on or after November 19, 1952.

(2) Any other vessel whose stability is questioned by the Commandant or the Officer in Charge, Marine Inspection.

(b) *Stability test.* (1) The stability of each new tank vessel or class of vessels to which this section pertains shall be subject to review by the Commandant to determine whether or not a stability test is required. Where such a review involving a comparison with existing similar vessels, clearly indicates that due to the vessel's proportions and arrangements more than sufficient metacentric height will be available in all probable loading conditions, a stability test will not be required. Consistent with the foregoing principle, tank vessels will ordinarily not be required to be inclined if they have a molded beam in excess of 11 feet plus 1.5 times the molded depth, and further, if those vessels over 300 feet in length have two or more longitudinal bulkheads and those of 300 feet and less have at least one longitudinal bulkhead.

(2) The Commandant may allow the stability test of a tank vessel to be dispensed with provided basic stability data are available from the stability test of a sister vessel and it is shown to the satisfaction of the Commandant that reliable stability information for the exempted vessel can be obtained from such basic data.

(c) *Plans required.* (1) The following plans are essential for use in determining whether or not a stability test is to be required and should be made available as early as possible:

- Lines plan.
- Curves of form.
- General arrangement plan of all decks and levels.
- Inboard and outboard profile.
- Midship section.

(2) If it is determined that a stability test is required, the following additional plans will be required:

- Capacity plan showing capacities and vertical and longitudinal centers of gravity of all tanks and cargo spaces.
- Tank sounding tables.
- Draft mark locations.

(d) *Information supplied to master.*

(1) Vessels which are exempted from a stability test in accordance with the provisions of subparagraph (b) (1) of this section will be provided with a stability letter recording this fact.

(2) Vessels for which a stability test is required or which are exempted from such a test in accordance with subparagraph (b) (2) of this section shall be provided with information, based upon the

results of the applicable stability test, which is such that the master can, by rapid and simple process, obtain accurate guidance as to the stability of the vessel under varying conditions of service. Where special regard to particular operating conditions is necessary to assure safety of the vessel, full information relative thereto shall be included. The information required by this paragraph shall be submitted to the Commandant. Upon approval of this information, a stability letter recording this fact will be provided to the vessel.

(e) *Stability letter.* (1) Each tank vessel subject to the requirements of this section shall have posted under glass in the pilothouse a stability letter issued by the Coast Guard before the vessel is placed in service.

(2) Stability letters issued in accordance with subparagraph (d) (2) of this section will set forth the master's responsibility for maintaining satisfactory stability conditions at all times.

(f) *Alterations.* Where any alterations are made to a tank vessel so as to materially affect the stability information supplied to the master, amended stability information shall be provided. If necessary the vessel shall have a new stability test.

§ 31.10-35 Permit to proceed to another port for repair—TB/ALL.

(a) The Officer in Charge, Marine Inspection, may issue a permit to proceed to another port for repair, Form CG-948, to a vessel if in his judgment it can be done with safety even if the certificate of inspection of the vessel has expired or is about to expire.

(b) Such permit will only be issued upon the written application of the master, owner or agent of the vessel.

(c) The permit will state upon its face the conditions under which it is issued and whether or not the vessel is permitted to carry freight or passengers. Passengers may not be carried if the certificate of inspection has expired.

(d) The permit shall be carried in a manner similar to that described in § 31.05-5 for a certificate of inspection.

(R.S. 4453, as amended; 46 U.S.C. 435)

§ 31.10-40 Inspection during trial trip—T/ALL.

On the trial trip of each new or converted tankship, an inspector shall be present to observe from the standpoint of safety in the carriage of flammable and/or combustible liquids in bulk, the operation of boilers, engines, steering gear, and auxiliaries; and if not satisfied with the performance of such boilers and machinery, appliances, and apparatus for stowage, he shall make such requirements as in his judgment will overcome any deficiencies which may have come under his observation.

§ 31.10-45 Inspection of crew accommodations—TB/ALL.

Crew's quarters shall be inspected to determine their sanitary condition. The Officer in Charge, Marine Inspection, upon completing such inspection, shall notify the master or officer in charge of the vessel of his findings,

which shall be entered in the vessel's log book.

(Sec. 4, 49 Stat. 1935, as amended; 46 U.S.C. 660a)

§ 31.10-50 Inspection of bilges—TB/ALL.

(a) When inspecting oil-burning vessels, either internal-combustion type or steam-driven type, the marine inspector shall examine the tank tops and bilges in the fire room and engine room to see that there is no accumulation of oil which might create a fire hazard.

(Interpret or apply R.S. 4488, as amended, 46 U.S.C. 481)

Subpart 31.15—Manning of Tank Vessels

§ 31.15-1 Licenced 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 endorsement 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 licenced 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. 4463, as amended, sec. 2, 40 Stat. 549, as amended; 46 U.S.C. 222, 223)

§ 31.15-5 Tank barges—B/ALL.

(a) Tank barges need not be manned unless in the judgment of the Officer in Charge, Marine Inspection, such manning is necessary for the protection of life and property and for the safe operation of the vessel: *Provided, however*, That towing vessels, while towing barges which are not required to be manned, shall carry in the regular complement of the towing vessel and shall have on board at all times while towing, at least one licenced officer or certificated tankerman.

(b) Where the bulk liquid cargo to be transported is covered by the requirements of § 35.01-55 of this subchapter, the person in charge of the towing vessel or barge shall be provided with, and have on board, the information card required by § 35.01-55.

§ 31.15-6 Tank barges carrying bulk cargoes having dangerous characteristics in addition to flammability or combustibility—B/ALL.

(a) For those tank barges carrying a bulk liquid cargo covered by the require-

ments of § 35.01-55 of this subchapter, at least one member of the crew of the barge required to be manned pursuant to § 31.15-5 shall be especially qualified in the handling of the specific cargo to be carried. The Officer in Charge, Marine Inspection, shall be furnished satisfactory documentary evidence that such person is trained in and capable of performing competently the necessary operations which relate to the carriage and transfer of such cargo.

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

§ 31.15-10 Towing vessels may carry persons in addition to crew—B/LBR.

(a) Towing vessels engaged in towing tank barges on the Great Lakes, inland waters, or rivers, may be authorized by the Coast Guard District Commander of the district to carry on board such number of persons in addition to its crew as shall be deemed necessary to carry on the legitimate business of such towing vessel or barge, not exceeding, however, one person to every net ton of the towing vessel.

(b) A Coast Guard District Commander granting a license to a vessel engaged in towing to carry persons in addition to its crew shall notify the Officer in Charge, Marine Inspection, in whose jurisdiction the vessel receiving the permit is engaged, and the Officer in Charge, Marine Inspection, shall keep a record of the same.

(Sec. 1, 24 Stat. 129, as amended; 46 U.S.C. 458)

Subpart 31.20—Waters Operated Over

§ 31.20-1 Waters—TB/ALL.

The certificate of inspection shall show the waters over which the tank vessel is permitted to operate, such as: all waters; oceans; coastwise; Great Lakes; bays, sounds, and lakes other than the Great Lakes; rivers; or inland waters tributary to the Gulf of Mexico.

Subpart 31.25—Load Lines

§ 31.25-1 Load lines required—TB/OCL.

All tank vessels of 150 gross tons or over navigating the oceans, coastwise waters, and Great Lakes are subject to the regulations in Parts 43 to 45, inclusive, Subchapter E (Load Lines) of this chapter.

Subpart 31.30—Marine Engineering

§ 31.30-1 Marine engineering regulations and material specifications—TB/ALL.

(a) All tank vessels are subject to the regulations contained in Parts 50 to 61, inclusive, of Subchapter F (Marine Engineering) of this chapter, whenever applicable, except as such regulations are modified by the regulations in this subchapter for tank vessels.

(b) Nuclear vessels shall comply with the applicable requirements in Subpart 57.30 of Part 57 of Subchapter F (Marine Engineering) of this chapter. The regulations covering the transportation and handling of radioactive materials as

cargo are contained in Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

(Sec. 2, 23 Stat. 118, as amended, secs. 2, 633, 63 Stat. 496, 545; 46 U.S.C. 2, 14 U.S.C. 2, 633. Interpret or apply R.S. 4472, as amended, sec. 14, 29 Stat. 690, as amended, 41 Stat. 305, as amended, sec. 1, 2, 49 Stat. 1544, as amended, 46 U.S.C. 170, 363, 367)

Subpart 31.35—Electrical Engineering

§ 31.35-1 Electrical installations, lighting and power equipment, batteries, etc.—TB/ALL.

All tank vessels are subject to the regulations contained in Subchapter J (Electrical Engineering) of this chapter except as such regulations are modified by the regulations in this subchapter for tank vessels.

§ 31.35-5 Communications; alarm systems, telephone and voice tube systems, engine telegraph systems, etc.—TB/ALL.

All tank vessels are subject to the regulations contained in Subchapter J (Electrical Engineering) of this chapter except as such regulations are modified by the regulations in this subchapter for tank vessels.

Subpart 31.37—Inspection of Cargo Gear

§ 31.37-1 When made—TB/ALL.

(a) The specific tests and examinations shall be made at the intervals stated in the regulations; in this subpart.

(b) A thorough examination of the assembled gear shall be made at least once in every year.

(c) An inspection to determine the condition and suitability of shipboard cargo gear will be made by a marine inspector at each inspection for certification. Inspections may be made at such other times as considered necessary by the Officer in Charge, Marine Inspection.

(d) For vessels fitted with cargo gear, an initial inspection of the assembled units under proof loads shall be conducted, followed by a complete dismantling or disassembling of such gear and a thorough examination of the parts to ascertain its condition. Subsequent tests of the assembled units under proof loads, followed by a dismantling or disassembling of such gear and a thorough examination shall be made once every 4 years, or oftener if necessary.

§ 31.37-3 Definitions of terms and words used in this subpart—TB/ALL.

(a) *Cargo gear.* The term "cargo gear" includes masts, stays, booms, winches, cranes, elevators, conveyors, standing and running gear forming that part of the shipboard cargo gear used in connection with the loading or unloading of dry cargo. This term does not include the gear used for handling cargo hoses or ship stores' only.

(b) *Dismantling or disassembling of gear.* The "dismantling" or "disassembling" of gear contemplated is the taking apart of units of gear to the extent necessary to determine the suitability of such gear for continued service and as

may be specifically required to carry out the intent of a particular provision in this subpart. After proof load tests, the disassembling need not include the sheaves and pins of the blocks included in the test unless there appears to be evidence of deformation or failure.

(c) *Thorough examination.* The "thorough examination" contemplated is a visual examination, supplemented if necessary by other means such as by a hammer test or by a test with electronic or ultrasonic devices.

(d) *Ton.* The word "ton" means a ton of 2,240 pounds.

(e) *Safe working load.* The "safe working load" (SWL) contemplated is the load the gear is approved to lift, excluding the weight of the gear itself.

§ 31.37-5 Tests and examinations of shipboard cargo gear—TB/ALL.

(a) For vessels fitted with cargo gear and without valid cargo gear certificates and registers issued by organizations or associations recognized by the Coast Guard, inspections shall be made by those competent persons described in paragraph (c) (1) and (2) of § 31.10-16, to determine the condition and suitability of the shipboard cargo gear. For the initial and subsequent quadrennial inspections, all the cranes, winches, hoists, derrick booms, derrick and mast bands, and all parts used in loading or unloading cargo shall be assembled in units and such assembled units shall then be tested under proof loads. The proof loads shall be handled for various types of units as required by specific regulations in this subpart. After the proof load tests of the assembled units of gear have been made, such gear shall be disassembled or dismantled so as to permit them to be thoroughly examined. The sheaves and pins of the blocks included in these proof load tests need not be removed unless there appears to be evidence of deformation or failure.

(b) For vessels fitted with cargo gear and holding valid cargo gear certificates and registers issued by organizations or associations recognized by the Coast Guard, the marine inspectors may accept such certificates as prima facie evidence of compliance with the requirements in this subpart. If an Officer in Charge, Marine Inspection, is in doubt as to the condition and suitability of shipboard cargo gear for such a vessel, the tests and examinations, or such portions thereof as deemed necessary, provided for in this subpart will be required.

(c) If any part or portion of the gear fails or becomes defective during such tests, such defective equipment shall be satisfactorily repaired or replaced.

§ 31.37-15 Cargo gear plans required when plans are not approved by a classification society—TB/ALL.

(a) For a new vessel or a vessel applying for initial inspection, the following plans of cargo gear are required to be submitted in triplicate to the Officer in Charge, Marine Inspection, for approval:

(1) Plans showing a stress diagram with the principal details of the gear.

(2) Plans containing a diagram showing the arrangement of the assembled

gear and indicating the safe working load for each component part.

(b) The safe working load on which the design of any component part of the cargo gear is to be based, shall be taken as the maximum resultant load upon the component part in the design conditions assumed. The safe working load of the assembly is the load the gear is approved to lift, excluding the weight of the gear itself.

(c) One approved copy of each set of cargo gear plans shall be retained on the vessel.

§ 31.37-20 Cargo gear plans approved by a classification society—TB/ALL.

(a) The plans required by § 31.37-15 (a) need not be submitted to the Officer in Charge, Marine Inspection, for approval if such plans are or have been approved by the American Bureau of Shipping or similar classification society recognized by the Commandant.

(b) One approved copy of each set of cargo gear plans shall be retained on the vessel.

§ 31.37-25 Factors of safety—TB/ALL.

(a) In the design of the cargo gear, the safety factors in Table 31.37-25(a)

TABLE 31.37-25(a)

Safe working loads for component parts	Safety factors based on—		
	Ultimate strength	Yield point	Breaking test load
All metal structural parts, except steel booms:			
When the working load of the assembled gear is 10 tons or less.....	1.5	-----	-----
When the working load of the assembled gear is 13 tons or over.....	1.4	-----	-----
Steel booms:			
When the working load of the assembled gear is 10 tons or less.....	-----	1.3	-----
When the working load of the assembled gear is 13 tons or over.....	-----	1.2½	-----
Wooden structural parts.....	8	-----	-----
Chains.....	4½	-----	-----
Wire rope:			
For working loads 10 tons or under.....	-----	-----	5
For working loads over 10 tons.....	-----	-----	4
Fiber rope:			
When intended for running rigging.....	7	-----	-----
When intended for fixed gear and vang.....	5	-----	-----

¹ For working loads between 10 and 13 tons, intermediate values of safety factors may be used.

TABLE 31.37-30(a) (3)

Article of gear	Proof load
Chains, rings, hooks, links, shackles, swivels.....	Twice the safe working load.
Single sheave block.....	Four times the safe working load. ¹
Multiple sheave block with safe working load up to and including 20 tons.	Twice the safe working load.
Multiple sheave block with safe working load over 20 tons up to and including 40 tons.	20 tons in excess of the safe working load.
Multiple sheave block over 40 tons.....	One and a half times the safe working load.
Chain fall blocks used with roller chains (pitched chains), and rings, hooks, shackles, or swivels permanently attached thereto.	Do.

¹ The proof load applied to the block is equivalent to twice the maximum resultant load on the eye or pin when lifting the safe working load attached to a rope which passes around the sheave of the block. The proof load is, therefore, equal to four times the safe working load or twice the safe working load when the load is attached directly to the block instead of a rope passing around the sheave.

taken in association with suitable design assumptions for actual loading conditions, shall be used and regarded as minima.

(b) The Commandant will give consideration to the use of factors of safety differing from those given in Table 31.37-25(a) where special materials or cargo gear of special design are to be used.

§ 31.37-30 Loose gear certificates and tests—TB/ALL.

(a) (1) Evidence of compliance with the proof load test requirements in this section for all chains, rings, hooks, links, shackles, swivels, blocks, and any other loose gear whether accessory to a machine or not, but which is used as ship's cargo gear, shall be listed on an appropriate certificate.

(2) This evidence of test and the recording thereof is required only once with respect to each article of gear so long as each article is identified and the certificates required are available on the vessel.

(3) Proof loads applied to the articles of loose gear shall be as shown in Table 31.37-30(a) (3).

(b) All chains, rings, hooks, links, shackles, swivels, blocks and any other loose gear, whether accessory to a machine or not, but which are used or intended for use as ship's cargo gear, shall bear a mark or number by which each piece can be identified when listed on a loose gear certificate. The safe working load "SWL" shall be marked on all blocks.

(c) The loose gear certificate shall show the distinguishing number or mark applied to the article of gear; a description of the article of gear; the date when the test proof load was applied; and the safe working load. The forms for loose gear certificates shall be as prescribed by and acceptable to associations or organizations approved by the Commandant and shall be suitable for the purposes described in this section.

(d) After being tested, all of the gear shall be examined to ascertain whether any part has been damaged, permanently deformed by the test, or has other visible defects. The pins and sheaves of all tested blocks shall be removed for this purpose. If damaged during these tests, such gear shall be satisfactorily repaired or replaced.

(e) The required examinations as set forth in paragraph (d) of this section may be accomplished by mechanical, electrical or other means provided the method employed is equal in efficiency to the visual examination of disassembled gear.

§ 31.37-35 Test and certification of wire rope—TB/ALL.

(a) All wire rope used as shipboard cargo gear shall be able to withstand a breaking test load of at least five times the safe working load. In the case of gear with a lifting capacity of over 10 tons, the breaking test load of wire rope shall be at least four times the safe working load. All wire rope shall be identified and described in a wire rope certificate. Such certificate shall be furnished and attested to by the manufacturer or a testing agency and shall certify:

- (1) The breaking test load of a sample of the wire rope, which should be at least five times the safe working load or at least four times the safe working load if part of gear with a lifting capacity of over 10 tons;
- (2) The name and address of the manufacturer;
- (3) The diameter of the rope in inches and/or fractions thereof;
- (4) The number of strands and the number of wires in each strand;
- (5) The quality of the wire (e.g., improved plow steel);
- (6) The date of the test; and,
- (7) The load at which the sample broke.

(b) The forms for the wire rope certificate shall be prescribed by and acceptable to associations or organizations approved by the Commandant and shall be suitable for the purposes described in this section.

(c) In addition to the manufacturers' or testing agencies' attestations, a sample of the wire rope may be tested to destruction if required by the marine inspector when a visual inspection indicates an apparent defective condition.

§ 31.37-40 Proof test of cargo gear as a unit—TB/ALL.

(a) Winches with their accessory gear, including the derricks and attachments, at least once in each four years, shall be tested as a unit with proof loads exceeding the safe working load as set forth in Table 31.37-40(a).

TABLE 31.37-40(a)

Safe working load of assembled gear	Proof load
Not exceeding 20 tons.	25 percent in excess.
Over 20 tons but not exceeding 50 tons.	5 tons in excess.
Over 50 tons.	10 percent in excess.

(b) The proof load applied to winches and their gear shall be lifted with the ship's normal tackle, including the winches, and with the boom at an angle which should not be greater than 15 degrees to the horizontal or to the lowest angle approved in association with the design, or when these angles are impracticable, to the lowest practicable angle. When the load has been lifted, it shall be swung as far as possible in both directions.

(1) Where electrical winches are fitted with electromagnetism brakes, or where electrohydraulic winches are fitted with electromagnetism or hydraulic brakes at the winch, mechanical brakes for manual operation will not be required, but if so fitted shall be in satisfactory operating condition.

(2) Current for electric winch operation during the test shall be taken from the ship's circuits. Shore current may be used if it passes through the ship's switchboard.

(c) Cranes and other hoisting machines with their accessory gear at least once in each four years, shall be tested, with a proof load which shall exceed the safe working load as set forth in Table 31.37-40(a).

(d) The proof load applied to cranes and hoists shall be lifted, topped, and swung (slewed) as far as possible in each direction. If the boom of the crane has a movable radius, it shall be tested with a proof load as set forth in this section at the maximum and minimum radii of the boom. In the case of hydraulic cranes whose capacity is limited by pressure, and with which it is not possible to lift a load 25 percent in excess of the safe working load, the greatest possible load in excess of the safe working load shall be used. These tests and the amounts of the loads shall be recorded.

(e) After satisfactory completion of the proof load testing of the cargo gear in accordance with paragraphs (a) through (d) of this section, the cargo gear and all component parts shall be given a thorough visual examination, supplemented as necessary by other means such as a hammer test or with electronic or ultrasonic devices, to determine if any of the parts were damaged, deformed, or otherwise rendered unsafe for further use. If found defective, such gear shall be replaced.

(1) When the test is being conducted for the first time on a vessel, accessory gear shall be dismantled or disassembled for examination after the test. The sheaves and pins of the blocks included in this test need not be removed unless there appears to be evidence of deformation or failure.

(2) For subsequent tests such parts of the machinery and gear shall be dismantled and/or disassembled after the test as necessary to determine its suitability for continued service.

(f) Appropriate means shall be provided to prevent the foot of the boom from being accidentally lifted from the socket during the test.

(g) Vessels whose cargo gear has been in use but are without the valid registers and certificates described in § 31.10-16 will be inspected for defective cargo gear. The gear shall then be tested and examined as prescribed in this section. If the movable weights for proof testing are not reasonably available, a spring or hydraulic scale certified for accuracy may be used. Whenever such scales are used, the proof load shall be applied with the boom swung out as far as possible in one direction and then in the other direction, and at such intermediate

positions as may be indicated. At any position, the indicator of the scale must maintain a constant reading under the proof load for a period of five minutes.

(h) On all types of winches and cranes efficient means shall be provided to stop and hold the proof load in any position, and the efficiency of such means shall be demonstrated.

(1) Electric winches, electrohydraulic winches fitted with electromagnetism or hydraulic brakes at the winch, or cranes shall be equipped so that a failure of the electric power shall stop the motion and set the brakes without any action on the part of the operator.

(2) Current for electric winches and cranes operation during the tests shall be taken from the ship's circuits. Shore current may be used if it passes through the ship's switchboard.

§ 31.37-45 Marking of booms and cranes—TB/ALL.

(a) The safe working load (abbreviated "SWL") for the assembled gear shall be marked on the heel of each boom, with the minimum angle to the horizontal for which the gear is designed. These letters and figures shall be in contrasting colors to the background and at least one inch in height.

(b) Where booms are rated at varying capacities depending on the radii, tables indicating the maximum safe working loads for the various working angles of the boom and the maximum and minimum radii at which the boom may be safely used shall be conspicuously posted near the controls and visible to the operator when working the gear.

§ 31.37-50 Use of wire rope and chains—TB/ALL.

(a) An eye splice made in any wire rope used as cargo gear, with or without a thimble, shall have at least three tucks with whole strands and two tucks with one half of the wire cut from the tucking strand: *Provided*, That this requirement shall not preclude the use of any other form of splice or connection if it is as efficient as the splice specified.

(b) Single wire rope cargo falls, wire rope pendants, topping lifts and preventers shall consist of clear lengths without splices except at the working ends. Wire rope clips shall not be used to form eyes in the working ends of single wire rope cargo falls.

(c) Wire rope shall not be used for shipboard cargo gear if in any length of 8 diameters, the number of visible broken wires exceeds ten percent of the total number of wires in the rope, or if the rope shows other signs of excessive wear, corrosion, kinking, or defect.

(d) Hoisting or sling chains used for shipboard cargo gear shall not be used if a length of chain has been stretched more than five percent of the original length, or the chain has become unsafe through overloading or faulty heat treatment, or whenever other external defects are evident.

(e) Chains used for shipboard cargo gear shall not be shortened by knotting, bolting, or wiring the links. The use of chains having a knot or kink as shipboard cargo gear is prohibited.

§ 31.37-55 Annealing—TB/ALL.

(a) Chains, hooks, rings, links, shackles, and swivels of wrought iron used as cargo gear shall be annealed at the following intervals:

(1) Wrought iron chains and gear in general use and of one half inch or less, at least once in every six months.

(2) All other wrought iron chains and gear, including topping lift chains, in general use, at least once in every twelve months.

(b) The annealing shall be done in a suitable closed oven and not over an open fire. Wrought iron shall be annealed at a temperature of between 1100° and 1200° Fahrenheit for a period of between 30 and 60 minutes. After being annealed, the article shall be allowed to cool slowly and shall be then tested completely for defects.

(c) Heat treatment of the cargo gear shall be done only by reputable firms having suitable equipment and personnel trained for this purpose. A certificate attesting to the annealing shall be furnished for all gear so treated.

(d) The heat treatment of chains, hooks, rings, links, shackles, and swivels of materials other than wrought iron used as cargo gear, if required, shall be effected in accordance with the manufacturer's instructions.

§ 31.37-60 Additions to gear—TB/ALL.

(a) When articles of loose gear and/or wire rope conforming with the requirements in this subpart are added to installed gear, or used as replacements in such gear from time to time, a record shall be maintained on the vessel which shall identify each article and the certificate accompanying it.

§ 31.37-65 Alterations, renewals, or repairs of cargo gear—TB/ALL.

(a) Whenever important repairs, renewals, or alterations are indicated or intended for the masts, booms, and permanent fittings of the cargo gear, such repairs, renewals, or alterations shall be undertaken only after compliance with § 31.10-25.

(b) Tests and examinations of the repairs, renewals, or alterations will be in accordance with § 31.37-40.

(c) When welding is used to lengthen, alter, or repair chains, rings, hooks, links, shackles, or swivels, they shall be properly heat treated and shall, before being again put into use, be tested and examined in accordance with the provisions of § 31.37-30.

§ 31.37-70 Responsibility of ship's officer for inspection of cargo gear—TB/ALL.

(a) All wire rope, chains other than bridle chains attached to booms or masts, and all rings, hooks, links, shackles, swivels, and blocks used in loading or unloading shall be visually inspected by a ship's officer designated for that purpose by the master.

(b) These inspections by a ship's officer shall be made at frequent intervals, and in any event not less than once in each month.

(c) Immediately after such an inspection by a ship's officer notations of such an inspection shall be made in record form which shall be in or kept with the cargo gear register if carried. In addition, the same notations of inspections together with the dates shall be entered in the Official Logbook for those vessels required to carry this record, or such information shall be kept with the log records maintained on vessels not required to carry the Official Logbook. (See § 31.37-75 for entries required to be kept.)

§ 31.37-75 Records regarding cargo gear—TB/ALL.

(a) The cargo gear records described in this subpart shall be maintained on the vessel and shall be made available to Coast Guard officials upon request. These records shall be kept for the periods of time they are valid and, in addition, until the next Coast Guard inspection for certification of the vessel. The certificates of manufacturers and/or testing laboratories, companies, or organizations shall be maintained on the vessel so long as the gear described in such certificates is on board the vessel.

(b) The records of all the inspections of cargo gear made by the ship's officers in accordance with § 31.37-70 shall be maintained on the vessel for periods of time which agree with those periods as covered by the current Coast Guard certificate of inspection issued to the vessel. These records shall show the dates of inspections, identify articles inspected, the conditions observed, and the name of the officer performing the inspection.

(c) The records of all tests and examinations conducted by or under the supervision of surveyors of the organizations or associations approved by the Commandant shall be maintained on the vessel.

(d) The Coast Guard will not issue cargo gear certificates and/or registers. The Coast Guard's records of inspections, tests, and examinations of a particular vessel's cargo gear made by a marine inspector or conducted under the supervision of the Coast Guard will be maintained in the Office of the Officer in Charge, Marine Inspection, having jurisdiction over the vessel at the time such work was performed. The original certificates or certified copies of certificates of manufacturers and/or testing laboratories, companies, or organizations for loose cargo gear, wire rope, or the annealing of gear shall be maintained on the vessel.

§ 31.37-80 Advance notice that cargo gear testing is desired—TB/ALL.

(a) The owner, agent, or master of a vessel shall give an advance notice when it is desired that the tests and examinations of cargo gear be made by or under the supervision of the marine inspectors. This advance notice shall be given to the Officer in Charge, Marine Inspection, in whose marine inspection zone the vessel is available for such inspection and examination.

(b) For the initial inspection and examination of cargo gear by the Coast

Guard, the advance notice shall be to the cognizant Officer in Charge, Marine Inspection, as early as possible and shall include sketches and/or drawings showing each unit of cargo gear, the identification of component parts and the safe working loads. Copies of original certificates of manufacturers and/or testing laboratories, companies, or organizations maintained on the vessel may be accepted by the cognizant Officer in Charge, Marine Inspection, when satisfied such certificates properly describe the qualities of the component parts of the gear in question.

§ 31.37-85 Responsibility for conducting required tests and examinations—TB/ALL.

(a) The vessel's owners and/or operators shall furnish and pay the expenses required in conducting the tests and examinations prescribed by the regulations in this subpart, including the supplying of all instruments, other equipment, and personnel including personnel supervision for performance of all work required.

(b) The Coast Guard's participation in these required tests and examinations shall be confined to witnessing required tests and examinations with the view to determining whether or not the gear is satisfactory for the purpose intended. In the event it is determined that the gear is defective or unable to meet the standards set forth in this subpart, such gear, or portions thereof, shall be replaced to the satisfaction of the Officer in Charge, Marine Inspection, having jurisdiction over the vessel.

Subpart 31.40—Certificates Under International Convention for Safety of Life At Sea, 1960

§ 31.40-1 Application—T/ALL.

(a) The provisions of this subpart, with the exception of §§ 31.40-30 and 31.40-40(e), shall apply to all tankships on an international voyage other than nuclear vessels.

(b) The provisions of §§ 31.40-30, 31.40-35 and 31.40-40(e) shall apply to nuclear tankships on an international voyage.

§ 31.40-5 Cargo Ship Safety Construction Certificate—T/ALL.

(a) All tankships on an international voyage are required to have a Cargo Ship Safety Construction Certificate. This certificate shall be issued by the U.S. Coast Guard or the American Bureau of Shipping to certain vessels on behalf of the United States of America as provided in Regulation 12, Chapter I, of the International Convention for Safety of Life at Sea, 1960.

(b) All such tankships shall meet the applicable requirements of this chapter for tankships on an international voyage.

§ 31.40-10 Cargo Ship Safety Equipment Certificate—T/ALL.

(a) All tankships on an international voyage are required to have a Cargo Ship Safety Equipment Certificate.

(b) All such tankships shall meet the applicable requirements of this chapter for tankships on an international voyage.

§ 31.40-15 Cargo Ship Safety Radiotelegraphy Certificate—T/ALL.

(a) The application for a Cargo Ship Safety Radiotelegraphy Certificate is made on FCC Form 801 to the local office of the Federal Communications Commission.

(b) Where applicable, a Cargo Ship Safety Radiotelegraphy Certificate will be issued by the Federal Communications Commission to a tankship meeting its requirements for a tankship fitted with a radiotelegraph installation.

§ 31.40-20 Cargo Ship Safety Radiotelephony Certificate—T/ALL.

(a) The application for a Cargo Ship Safety Radiotelephony Certificate is made on FCC Form 801 to the local office of the Federal Communications Commission.

(b) Where applicable, a Cargo Ship Safety Radiotelephony Certificate will be issued by the Federal Communications Commission to a tankship meeting its requirements for a tankship fitted with a radiotelephone installation.

§ 31.40-25 Exemption Certificate—T/ALL.

(a) A tankship may be exempted by the Commandant from complying with certain requirements of the Convention under his administration upon request made in writing to him and transmitted via the Officer in Charge, Marine Inspection.

(b) When an exemption is granted to a tankship by the Commandant under and in accordance with the Convention, an Exemption Certificate describing such exemption shall be issued through the appropriate Officer in Charge, Marine Inspection, in addition to other required certificates.

§ 31.40-30 Nuclear Cargo Ship Safety Certificate—T/ALL.

(a) All nuclear tankships on an international voyage are required to have a Nuclear Cargo Ship Safety Certificate.

(b) All such ships shall meet the applicable requirements of this chapter for nuclear vessels on an international voyage.

(c) Nuclear vessels cannot be exempted from any requirements of the Convention.

§ 31.40-35 Posting of Convention certificates—T/ALL.

(a) The certificates described in this subpart, or certified copies thereof, when issued to a vessel shall be posted in a prominent and accessible place on the tankship.

(b) The certificates shall be carried in a manner similar to that described in § 31.05-5 for a certificate of inspection.

§ 31.40-40 Duration of Convention certificates—T/ALL.

(a) A Cargo Ship Safety Equipment Certificate shall be issued for a period of not more than 24 months.

(b) A Cargo Ship Safety Construction Certificate shall be issued for a period of not more than 60 months.

(c) A Cargo Ship Safety Radiotelegraphy Certificate and a Cargo Ship Safety Radiotelephony Certificate shall be issued for a period of not more than 12 months.

(d) An Exemption Certificate shall not be valid for longer than the period of the certificate to which it refers.

(e) The Nuclear Cargo Ship Safety Certificate shall be issued for a period of not more than 12 months.

(f) A Convention certificate may be withdrawn, revoked, or suspended at any time when it is determined the vessel is no longer in compliance with applicable requirements. (See § 2.01-70 of this chapter for procedures governing appeals.)

§ 31.40-45 American Bureau of Shipping—T/ALL.

(a) The American Bureau of Shipping, with its home office at 45 Broad Street, New York, N.Y., 10004, is hereby designated as an organization duly authorized to issue the "Cargo Ship Safety Construction Certificate" to certain tankships on behalf of the United States of America as provided in Regulation 12, Chapter I, of the International Convention for Safety of Life at Sea, 1960, and Executive Order 11239 and the certificate shall be subject to the requirements in this subpart. The American Bureau of Shipping is authorized to place the official seal of the United States of America on the certificate. This designation and delegation to the American Bureau of Shipping shall be in effect from May 26, 1965, until terminated by proper authority and notice of cancellation is published in the FEDERAL REGISTER.

(b) At the option of the owner or agent of a tankship on an international voyage and on direct application to the American Bureau of Shipping, the Bureau may issue to such tankship a Cargo Ship Safety Construction Certificate, having a period of validity of not more than 60 months after ascertaining that the tankship:

(1) Has met the applicable requirements of the Convention; and,

(2) Is currently classed by the Bureau and classification requirements have been dealt with to the satisfaction of the Bureau.

(c) When the Bureau determines that a tankship to which it has issued a Cargo Ship Safety Construction Certificate no longer complies with the Bureau's applicable requirements for classification, the Bureau shall immediately furnish to the Coast Guard all relevant information, which will be used by the Coast Guard to determine whether or not to withdraw, revoke or suspend the Cargo Ship Safety Construction Certificate.

(Sec. 25, 41 Stat. 998, as amended, sec. 701, 62 Stat. 731, as amended; 46 U.S.C. 881, 18 U.S.C. 701)

PART 32—SPECIAL EQUIPMENT, MACHINERY, AND HULL REQUIREMENTS

Subpart 32.01—Safety Requirements

- Sec.
32.01-1 Means of escape—T/ALL.
32.01-5 Lifelines—TB/OCLB.
32.01-10 Rails—TB/ALL.
32.01-15 Guards at dangerous places—TB/ALL.

Subpart 32.05—Markings

- 32.05-1 Draft marks—TB/ALL.
32.05-5 Vessel's name on equipment—TB/ALL.
32.05-10 Name of tankship—T/ALL.
32.05-15 Name of tank barge—B/ALL.

Subpart 32.15—Navigation Equipment

- 32.15-1 Fog sound signal devices—TB/ALL.
32.15-5 Whistles—T/ALL.
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AUTHORITY: The provisions of this Part 32 issued under E.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply sec. 3, 68 Stat. 675; 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026.

Subpart 32.01—Safety Requirements

§ 32.01-1 Means of escape—T/ALL.

On all tankships where the plans and arrangements will possibly permit, all passageways leading to living quarters, or places where anyone may be regularly employed, shall be provided with not less than two avenues of escape so located that if one of such avenues is not available another may be. The locality and arrangement of such additional means of escape shall be determined by the inspectors as will in their judgment best carry out the purpose for which this provision was made.

§ 32.01-5 Lifelines—TB/OCLB.

On all tank vessels where the distance is more than 150 feet between deck houses, a wire cable shall be stretched between the deck houses at all times when the vessel is loaded and being navigated, this cable to be not less than 5 feet from the deck; and there shall be attached at all times to the cable a traveler with a line of sufficient continuous length to insure its operation in order that communication between both ends of the vessel may be facilitated at all times: *Provided*, That in addition to the traveler with the endless whip, as many loose rings with lanyards attached may be placed on the cable as may be deemed necessary by the master in charge of the vessel: *Provided further*, That a fore and aft raised bridge shall be accepted in lieu of the wire cable and traveler.

§ 32.01-10 Rails—TB/ALL.

(a) All tank vessels, except unmanned tank barges, the construction or conversion of which is started on or after January 1, 1957, shall be fitted with fixed or portable rails on decks and bridges. All rails shall be in at least two courses, including the top, and shall be at least 36 inches high, and in no case shall the clear spaces between the courses exceed 18 inches. However, on tank vessels operating on ocean waters the outboard rails on all decks shall be in at least three courses, including the top, and shall be evenly spaced and shall be at least 36 inches high. All rails shall consist of solid or tubular sections or chains or wire rope or a combination thereof.

(b) For all tank vessels, except those navigating the rivers only, the construction or conversion of which was started

after September 11, 1946, and prior to January 1, 1957, rails on decks or bridges, shall be in at least two courses, including the top, and shall be at least 36 inches high.

§ 32.01-15 Guards at dangerous places—TB/ALL.

All exposed and dangerous places such as gears and machinery shall be properly protected with covers, guards or rails in order that the danger of accidents may be minimized. On vessels equipped with radio communication, the lead-ins shall be efficiently incased or insulated to insure against accidental shock. Such lead-ins shall be located so as not to interfere with the launching of lifeboats and liferafts.

Subpart 32.05—Markings

§ 32.05-1 Draft marks—TB/ALL.

(a) All tank vessels of 50 gross tons and over shall have the draft of the vessel plainly and legibly marked upon the stem and upon the sternpost or rudderpost or at any place at the stern of the vessel as may be necessary for easy observance. The draft shall be taken from the bottom of the keel at the marks to the surface of the water, the bottom of the mark to indicate the draft in feet.

(b) In cases where the keel does not extend forward or aft to the location of the draft marks, due to raked stem or cutaway skeg, the datum line from which the drafts shall be taken, shall be obtained by projecting the line of the bottom of the keel forward or aft, as the case may be, to the location of the draft marks.

(c) In cases where a vessel may have a skeg or other appendage extending locally below the line of the keel, the draft at the end of the vessel adjacent to such appendage shall be measured to a line tangent to the lowest part of such appendage and parallel to the line of the bottom of the keel.

§ 32.05-5 Vessel's name on equipment—TB/ALL.

The equipment of all tank vessels, such as fire hose, fire axes, lifeboats, life-rafts, life preservers, and lifeboats, shall be painted or branded with the name of the vessel upon which they are used.

§ 32.05-10 Name of tankship—T/ALL.

Every tankship not documented by the Commissioner of Customs shall have the name marked upon each bow and upon the stern, and the home port shall also be marked upon the stern. The name shall be in a light color on a dark ground, or in a dark color on a light ground, and shall be distinctly visible. The smallest letters used shall be not less than 4 inches in size. In addition, every tankship shall have her name conspicuously displayed in distinct plain letters, of not less than 6 inches in size, on each outer side of the pilothouse.

§ 32.05-15 Name of tank barge—B/ALL.

Every tank barge not documented by the Commissioner of Customs shall have its name or number carved, punch-

marked, or welded on the main beam, inside the cargo hatch, or other suitable permanent part of the vessel's structure for the purpose of identification. The vessel's name or number shall be so displayed at the highest part of the vessel's hull or permanent structure that the name or number can be seen from either side.

Subpart 32.15—Navigation Equipment

§ 32.15-1 Fog sound signal devices—TB/ALL.

(a) The efficient fog bell required upon vessels by law shall be held to mean a bell not less than 8 inches in diameter from outside to outside and constructed of bronze or brass or other material equal thereto in tone and volume of sound, and located where the sound shall be the least obstructed.

(b) In addition to the bell required in paragraph (a), all tankships of over 350 feet in length, other than those operating exclusively on the Great Lakes or the inland waters of the United States, shall be provided with a fog gong which will produce a sound easily distinguishable from the bell required by paragraph (a) and which shall have a range of audibility approximating that of the bell.

§ 32.15-5 Whistles—T/ALL.

(a) Each tankship shall be provided with an efficient whistle sounded by steam or by some substitute for steam to give the necessary whistle signals. All whistles shall be placed at an elevation of not less than 6 feet above the top of the pilothouse, where the clearance for passing under bridges will permit it. Tankships navigating the Red River of the North, Yukon, and similar rivers, and rivers whose waters flow in the Gulf of Mexico, and tankships of less than 100 gross tons may have their whistles located not less than 2 feet above the tops of their pilothouses. Such whistles or substitutes shall be satisfactory in sound and source of power for the purpose intended.

(b) On tankships contracted for on and after November 19, 1955 means shall be provided to operate the whistle from a position adjacent to the main steering station and from the steering station on top of the pilothouse where such steering station is fitted. Details of the whistle operating devices shall meet the requirements of Subparts 113.05 and 113.65 of Subchapter J (Electrical Engineering) of this chapter.

§ 32.15-10 Sounding machines—T/OCL.

All tankships of 500 gross tons and over shall be equipped with an efficient mechanical or electronic deep-sea sounding apparatus, in addition to the ordinary deep-sea hand lead. The mechanical or electronic deep-sea sounding apparatus above required shall be installed, kept in working order, and ready for immediate use: *Provided*, That tank vessels of less than 1,500 gross tons navigating the Great Lakes exclusively need not be equipped with deep-sea sounding apparatus as required by this section.

§ 32.15-15 Anchors for seagoing barge—B/OC.

Every seagoing barge shall be equipped with at least one anchor with suitable chain or cable to be at least equivalent to the requirements of the American Bureau of Shipping rules.

§ 32.15-20 Radiotelegraph and radiotelephone—T/ALL.

(a) Radiotelegraph and radiotelephone installations are required on certain tankships. Details of the application of these requirements, as well as the details of the installations, shall be as required by the statutes and regulations under the jurisdiction of the Federal Communications Commission.

(b) For the communication system required with the radiotelegraph and radiotelephone installations on a tank ship contracted for on or after November 19, 1955 see Subparts 113.05 and 113.30 of Subchapter J (Electrical Engineering) of this chapter.

§ 32.15-25 Radio direction finder—T/OC.

(a) All tankships of 1,600 gross tons and over on an international voyage or in ocean service shall be fitted with a radio direction finder. Details of the installation shall be as required by the statutes and regulations under the jurisdiction of the Federal Communications Commission. Such tankships of over 1,600 gross tons, but not over 5,000 gross tons, construction or conversion of which was started prior to November 19, 1952, need not meet the requirements of this section until November 19, 1954.

(b) For the communication system required with the radio direction finder installation on a tankship contracted for on or after November 19, 1955 see Subparts 113.05 and 113.30 of Subchapter J (Electrical Engineering) of this chapter.

Subpart 32.20—Equipment Installations

§ 32.20-1 Equipment installations on vessels during World War II—TB/ALL.

Boilers, pressure vessels, machinery, piping, electrical and other installations, including lifesaving, firefighting and other safety equipment, installed on vessels during the Unlimited National Emergency declared by the President on May 27, 1941, and prior to the termination of Title V of the Second War Powers Act, as extended (sec. 501, 56 Stat. 180, 50 U.S.C. 635), which do not fully meet the detailed requirements of the regulations in this chapter, may be continued in service if found to be satisfactory by the Commandant for the purpose intended. In each instance prior to final action by the Commandant, the Officer in Charge, Marine Inspection, shall notify Headquarters of the facts in the case, together with recommendations relative to suitability for retention.

§ 32.20-5 Pressure vacuum relief valves—TB/ALL.

The pressure vacuum relief valve shall be of a type and size approved by the Commandant for the purpose intended.

For specifications and procedures re approval, see Subpart 162.017 of Subchapter Q (Specifications) of this chapter.

§ 32.20-10 Flame arresters—TB/ALL.

Flame arrester shall be of a type and size approved by the Commandant for the purpose intended. For specifications and procedures re approval, see Subpart 162.016 of Subchapter Q (Specifications) of this chapter.

§ 32.20-20 Liquid level gaging—T/ALL.

On tankships, the construction or conversion of which is started on or after July 1, 1951, a method for determining the level of the liquid in a cargo tank without opening ullage holes, cargo hatches, or Butterworth plates, shall be provided on all tankships certificated for the carriage of Grade A liquids: *Provided*, That ullage holes fitted with sounding pipes tightly secured to the underside of the tank tops, opens at the bottom, and extending to within 18 inches or less of the bottom of the tank shall be considered as complying with the foregoing requirement.

Subpart 32.25—General Alarm Systems

§ 32.25-1 Alarm bells for tankships constructed on or after September 15, 1943—T/ALL.

(a) All tank ships of over 100 gross tons, the construction of which is begun on or after September 15, 1943, shall have all sleeping accommodations and machinery spaces equipped with a sufficient number of alarm bells so located as to warn all occupants.

(b) The bells shall be controlled by a manually operated contact maker located in the pilothouse, in an accessible location in the deck officers' quarters, and in the engine room. Each of the contact makers in the latter two locations shall be protected against tampering by means of an enclosure provided with a breakable glass window.

(c) The alarm system installation shall meet the requirements of Subparts 113.05 and 113.25 of Subchapter J (Electrical Engineering) of this chapter, except that vessels the construction of which was started prior to November 19, 1955, need only meet the requirements of § 113.25-90 thereof and the number and location of the contact makers shall comply with paragraph (b) of this section.

§ 32.25-5 Alarm bells for tankships constructed prior to September 15, 1943—T/ALL.

(a) All tankships, the construction of which was begun prior to September 15, 1943, shall have all sleeping accommodations equipped with a sufficient number of alarm bells so located as to warn all the occupants. The alarm bells, if electric, shall be operated from an open switch from the pilothouse or bridge. The bells shall be of such size, character, and construction as to provide an alarm throughout the spaces for which they are provided.

(b) The alarm system installation shall meet the requirements of § 113.25-90 of Subchapter J (Electrical Engineering) of this chapter.

§ 32.25-10 Alarm bells for manned barges—B/OC.

Each tank barge of over 100 gross tons, where the crew is divided into watches for the purpose of steering the vessel, shall be provided with a suitable alarm bell installation.

Subpart 32.30—Sound Powered Telephone, Voice Tube, and Engine Order Telegraph Systems

§ 32.30-1 Voice tubes or telephone equipment—T/ALL.

(a) Tankships shall be equipped with an efficient means of communication between the pilothouse and (1) the engine room, (2) the steering gear room, and (3) the emergency steering station.

(b) Where tankships are equipped with a gyro compass system and/or radar plan position indicator, an efficient means of communication shall be provided between the pilothouse and the master compass and/or radar plan position indicator when such equipment is remotely located from the pilothouse.

(c) Where tankships are equipped with a radio and/or a radio direction finder, an efficient means of communication shall be provided between the pilothouse and this equipment as covered in § 113.30-5(e) of Subchapter J (Electrical Engineering) of this chapter when such equipment is remotely located from the pilothouse.

(d) The efficient means of communication referred to in this section shall be either a voice tube or sound powered telephone system.

(e) Telephone and voice tube equipment and the installation thereof shall meet the requirements of Subparts 113.05 and 113.30 of Subchapter J (Electrical Engineering) of this chapter except that tank ships the construction of which was started prior to November 19, 1955, need only meet the requirements of § 113.30-90.

§ 32.30-5 Engine order telegraph equipment—T/ALL.

(a) Tankships shall be equipped with an efficient means of transmitting engine orders from the pilothouse to the engine room and of transmitting acknowledgments of such engine orders from the engine room to the pilothouse.

(b) The efficient means of transmitting engine orders and installation of the equipment shall meet the requirements of Subparts 113.05 and 113.35 of Subchapter J (Electrical Engineering) of this chapter except that tankships the construction of which was started prior to November 19, 1955, need meet only the requirements of § 113.35-90.

§ 32.30-10 Inspections—T/ALL.

All communication equipment between the pilothouse, engine room, steering gear room, and the emergency steering station shall be inspected and tested in accordance with the requirements of § 111.05-

10(c)(16) and (d)(1) of Subchapter J (Electrical Engineering) of this chapter.

Subpart 32.35—Main and Auxiliary Machinery

§ 32.35-1 Boilers and Machinery—TB/ALL.

Boilers, main and auxiliary machinery, and piping systems shall conform to the requirements of Subchapter F (Marine Engineering) of this chapter, except as otherwise provided for in this subchapter.

§ 32.35-5 Installation of internal combustion engines—TB/ALL.

Each internal combustion engine located on the weather deck shall be provided with a ventilated metal hood or, where space permits, with a well-ventilated metal housing of sufficient size to allow for proper operation and maintenance.

§ 32.35-10 Steering apparatus on tank vessels—TB/ALL.

Tank vessels shall be provided with steering apparatus as required by Subpart 57.25 of Subchapter F (Marine Engineering) of this chapter.

Subpart 32.40—Accommodations

§ 32.40-1 Crew accommodations on tankships of 100 gross tons or over constructed after January 1, 1938—T/ALL.

On all tankships of 100 gross tons and over, the construction of which is begun after January 1, 1933, the minimum requirements relative to construction, location, and equipment of crew accommodations are as follows:

(a) *Sleeping quarters.* At least 120 cubic feet of space and not less than 16 square feet of deck areas shall be allotted to each member of the crew for sleeping purposes. In measuring sleeping quarters allotted to crews of vessels, the Officer in Charge, Marine Inspection, shall not deduct from the total volume or from the deck area any equipment contained therein which is provided for the exclusive use of the crew. Not more than one bunk shall be placed above another, and the lower bunk shall be at least 12 inches above the deck. The upper bunk shall be located as nearly as practicable midway between the lower bunk and the lower side of the deck beams overhead.

(b) *Toilet and washing facilities.* (1) Each such tankship 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.

(c) *Hospital accommodations.* (1) Each tank vessel which in the ordinary course of its trade makes voyages of more than 3 days' duration between ports and which carries a crew of 12 or more, shall be provided with a hospital space. This space shall be situated with due regard to the comfort of the sick so that they may receive proper attention in all weathers.

(2) The hospital shall be suitably separated from other spaces and shall be used for the care of the sick and for no other purposes.

(3) The hospitals shall be fitted with berths in the ratio of 1 berth to every 12 members of the crew or portion thereof who are not berthed in single-occupancy rooms, but the number of berths need not exceed 6.

(d) *Location, construction and equipment.* (1) Crew accommodations shall not be located forward of the collision bulkhead, or where there will be undue risk to members of the crew in getting to stations.

(2) Where crew quarters abut galley, boiler, or engineroom bulkheads, such bulkheads shall be insulated with fire-resistive material to reduce transmission of heat.

(3) Insofar as practicable, crew quarters shall be so located or constructed that they will be protected against objectionable odors of cargo, fuel tanks, paint lockers, oil rooms, bilges, toilets, etc.

(4) All crew spaces shall be adequately lighted, heated and ventilated. The lighting shall comply with the requirements of § 111.50-15 and Subpart 111.60 of Subchapter J (Electrical Engineering) of this chapter.

(5) Bare metal surfaces of ship's sides and metal weather decks overhead which are not decked over with wood externally, shall be covered with suitable fire-resistive material to aid in keeping the crew's quarters dry.

(6) In the ventilation of crew accommodations provisions shall be made for the ingress of fresh air and for the egress of impure air; it shall be adequate for the purpose intended, and so arranged as to be effective in any ordinary weather conditions, and to distribute fresh air without undue discomfort to the occupants. Where natural ventilation is provided, each inlet shall have an area of at least 6 square inches for each person accommodated, the outlet to be at least equal in size to the inlet. In no case shall any one such inlet or outlet have a cross sectional area of less than 24 square inches.

(7) Mechanical ventilation may be provided if such system is equal in effectiveness to the requirements for natural ventilation and is approved by the Commandant. For remote control of mechanical ventilation see § 111.50-5 of Subchapter J (Electrical Engineering) of this chapter.

(8) Messrooms shall be provided for both officers and crew, and shall be separate from each other where space and conditions will permit. Such messrooms shall be sufficient in size to accom-

modate all persons allotted to such space: *Provided, however,* That this subparagraph need not apply to vessels operating on the Great Lakes, lakes, bays and sounds, or rivers.

(9) All washbasins, shower baths, or tubs required by the regulations in this subchapter shall be equipped with proper plumbing, including hot and cold running water. Washbasins for the crew may be located in the crew's sleeping quarters, if properly installed, equipped with proper plumbing for draining and supplied with hot and cold running water.

(10) All toilets shall be installed and equipped with the proper plumbing for flushing. Where more than one toilet is located in a space or compartment, each toilet shall be separated with a screen constructed of fire-resistive material to afford privacy. Such screens may be installed so as to be open at top and bottom for ventilation purposes.

(11) Floors of toilets and washrooms shall be covered with cement, tile, or other suitable covering.

(12) On each such tankship there shall be provided at least one sink or other suitable means for washing clothes.

(13) Each hospital shall have a toilet, washbasin, and bathtub or shower conveniently situated.

(14) A clothes locker shall be provided for each person accommodated of a size not less than 12" x 21" x 5' high and so placed as to be readily accessible.

(15) Living accommodations shall be properly screened to exclude insects.

§ 32.40-5 Crew accommodations on tankships of less than 100 gross tons and manned tank barges constructed after January 1, 1938—TB/ALL.

All tankships of less than 100 gross tons and all manned tank barges, the construction of which is begun after January 1, 1938, shall be provided with crew accommodations of sufficient size, adequate construction, and with suitable equipment to provide for the protection and accommodations of its crew in a manner practicable for the size, facilities and service of the vessel, and consistent with the principles underlying the requirements for crew accommodations on tankships of 100 gross tons or more.

§ 32.40-10 Crew accommodations on tankships of 100 gross tons or over constructed after March 4, 1915, and prior to January 1, 1938—T/ALL.

On all tankships of 100 gross tons or over the construction of which was begun after March 4, 1915, and prior to January 1, 1938, the crew accommodations shall be of a character and number in compliance with § 32.40-1 (a), (b), (c), except that separate washing facilities are not required where the engineroom crew, exclusive of licensed officers, and others separately provided for, does not exceed 10. In cases where an improvement is necessary in the sanitary conditions of such vessels, § 32.40-1(d) will also apply in principle insofar as space and conditions will permit.

§ 32.40-15 Crew accommodations on tankships and manned tank barges not otherwise provided for—TB/ALL.

All tankships and all manned tank barges not heretofore provided for shall have crew quarters and washing and toilet facilities in keeping with the age, size, facilities and service of the vessel, and suitable for the accommodations and protection of the crew.

Subpart 32.45—Electrical Installations

§ 32.45-1 Requirements for tank vessels the construction or conversion of which is contracted for on or after November 19, 1955—TB/ALL.

(a) *Application.* The electrical installation on a tank vessel the construction or conversion of which is contracted for on or after November 19, 1955 shall comply with the requirements contained in this section in addition to those contained in Subchapter J (Electrical Engineering) of this chapter except as such latter regulations are modified by this section. Specific additional requirements for tank vessels carrying Grade A, B, C or D liquid cargo are contained in paragraphs (h) and (i) of this section.

(b) *Cable location.* Where practicable, electric cable shall be located well inboard from the sides, preferably along or near the centerline, to reduce the risk of injury in the event of collision, but it shall be kept clear of cargo tank openings. Specific additional cable location requirements for cargo pump rooms and enclosed spaces immediately above or adjacent to cargo tanks are contained in paragraphs (f) and (h) of this section.

(c) *Equipment location.* Except where Grade E liquid cargo only is involved, switchboards, distribution panels, switches, fuses, and other circuit-interrupting or power devices shall not be installed in cargo pumprooms nor in enclosed spaces immediately above or adjacent to cargo tanks. Regardless of the grade of liquid cargo handled storage batteries shall not be located in cargo pumprooms.

(d) *Portable equipment.* Portable equipment shall be of an approved type. When the vessel is not gas free, no portable electrical equipment shall be used in the cargo or fuel oil tanks, the cargo pumprooms or any enclosed spaces immediately above or adjacent to the bulk cargo tanks, except that lighting may be effected by the use of approved explosion-proof, self-contained, battery-fed lamps.

(e) *Explosion-proof installations.* Where explosion-proof equipment is required, the equipment and installation thereof shall comply with § 111.60-40 of Subchapter J (Electrical Engineering) of this chapter.

(f) *Enclosed spaces.* (1) The lighting of enclosed spaces immediately above or adjacent to cargo tanks for Grade A, B, C or D liquid cargo shall be effected by means of approved explosion-proof or

magazine type lighting fixtures in accordance with the requirements of § 111.170-10(c) of Subchapter J (Electrical Engineering) of this chapter.

(2) Through runs of electric cable are permitted.

(g) *General cargo spaces.* (1) General cargo spaces located beyond the segregation spaces of tank vessels carrying Grade A, B, C or D liquid cargo shall have no special restrictions in regard to electrical installations.

(2) General cargo spaces, regardless of location, of tank vessels carrying Grade E liquid cargo only shall have no special restrictions in regard to electrical installations.

(h) *Cargo pumproom handling Grade A, B, C, or D liquid cargo.* (1) Lighting in cargo pumprooms handling Grade A, B, C, or D liquid cargo shall be accomplished either through permanently fixed glass lenses fitted in the bulkhead and/or overhead, or by the use of explosion-proof fixtures, except that explosion-proof fixtures may be installed only under certain conditions. For detail requirements see § 111.70-10 (c) of Subchapter J (Electrical Engineering) of this chapter.

(2) Through runs of electric cable, regardless of how they may be protected, are prohibited.

(i) *Weather decks of tank vessels handling Grade A, B, C, or D liquid cargo.* Motors, their control equipment, and other electrical equipment and installations located on or above the weather decks within 10 feet of the cargo tank openings, cargo pumproom doors or cargo pump room ventilation outlets, or cargo tank vent terminations shall be explosion-proof. Explosion-proof equipment installed in locations exposed to the weather shall be watertight or shall be enclosed in watertight housings, or protected against the entrance of water by other approved means.

§ 32.45-5 Requirements for tank vessels the construction or conversion of which was started on or after November 10, 1936 but prior to November 19, 1955—TB/ALL.

(a) *Application.* The requirements of this section shall apply to all tank vessels the construction or conversion of which was started on or after November 10, 1936, but prior to November 19, 1955.

(b) *General.* The electrical installation shall be in accordance with this section, and to the extent that such installation is not covered by this section it shall be at least equivalent to the Commandant's general requirements.

(c) *Existing arrangements.* Existing arrangements, materials, and facilities previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. For detailed requirements see § 111.70-90(a) of Subchapter J (Electrical Engineering) of this chapter minor repairs and minor alterations may be made to the same standard as the original installation.

(d) *New installations.* New installations or major replacements shall meet

the applicable requirements of § 32.45-1.

(e) *Location of storage batteries.* Storage batteries shall not be located in cargo pumprooms. The space in which they are located shall be well ventilated and they shall be protected against mechanical and electrical injury including short circuiting and overloading. Batteries shall be secured against movement, and acid batteries shall be set in lead-lined trays at least 3 inches deep of at least 4-pound sheet lead.

(f) *Installations made during the Unlimited National Emergency.* Electrical equipment installed during the Unlimited National Emergency as defined in § 110.25-5 of Subchapter J (Electrical Engineering) of this chapter and not complying with the requirements in this subchapter may be continued in service if found to be satisfactory by the Commandant for the purpose intended.

(g) *Cargo pumprooms and enclosed spaces of tank vessels constructed on or after July 1, 1951, but prior to November 19, 1955—(1) Application.* The requirements of this paragraph shall apply to cargo pumprooms and enclosed spaces immediately above the bulk cargo tanks of tank vessels carrying Grade A, B, C or D liquid cargo, the construction or conversion of which vessels was started on or after July 1, 1951, but prior to November 19, 1955. There are no special restrictions in regard to the electrical installations in cargo pumprooms and enclosed spaces of tank vessels carrying only Grade E liquid cargo.

(2) *Cable location.* Through runs of electric cable are permitted.

(3) *Equipment.* No electric lighting or power circuit interrupting or power devices shall be installed in pumprooms. Enclosed spaces immediately above the bulk cargo tanks shall contain no electrical circuit interrupting or power devices.

(4) *Lighting.* Lighting shall be effected by means of approved explosion-proof or magazine type lighting fixtures. When the vessel is not gas free no portable lighting equipment shall be used except approved explosion-proof, self-contained, battery-fed lamps.

(h) *General cargo spaces of tank vessels constructed on or after July 1, 1951, but prior to November 19, 1955 and carrying Grade E liquid cargo only.* General cargo spaces, regardless of location, of tank vessels constructed on or after July 1, 1951, but prior to November 19, 1955, and carrying Grade E liquid cargo only, shall have no special restrictions in regard to electrical installations.

(i) *Cargo pumprooms and enclosed spaces of tank vessels constructed on or after November 10, 1936, but prior to July 1, 1951—(1) Application.* The requirements of this paragraph shall apply to cargo pumprooms for Grade A, B, C or D liquids and to enclosed spaces required to segregate Grade A, B, C or D liquid cargo tanks from other spaces, all on tank vessels the construction or conversion of which was started on or after November 10, 1936, but prior to July 1, 1951.

(2) *General.* The installation covering the cable, cable fittings and method

of making wiring connections, lighting fixtures, and motors shall comply with the requirements of § 111.70-90(d) of Subchapter J (Electrical Engineering) of this chapter.

(3) *Ventilation.* The motor-driven ventilation system for the cargo pump motor when located in the pumproom is to be so interlocked that the pump motor cannot be started prior to a circulation of air. The air ducts are to lead to and from the atmosphere outside the pumproom and are to terminate not less than 3 feet above the deck and not less than 6 feet from any cargo tank vent. (See § 32.60-20.)

§ 32.45-10 Requirements for tank vessels the construction or conversion of which was started prior to November 10, 1936—TB/ALL.

(a) *Application.* The requirements of this section shall apply to all tank vessels the construction or conversion of which was started prior to November 10, 1936.

(b) *General.* The electrical installation shall be maintained in a safe and in a good mechanical condition, and shall comply with the regulations in effect when the vessel was built, or to the requirements of a recognized classification society. Any major change in the electrical installation or any conversion shall comply with the requirements of this subpart applicable to new vessels.

(c) *Pumprooms and enclosed spaces of tank vessels handling Grade A, B, C or D liquid cargo.* The electrical installation in the pumprooms and enclosed spaces immediately adjoining cargo tanks (except in pump engine rooms as provided in § 32.70-20) of tank vessels handling Grade A, B, C or D liquid cargo shall be made to comply with §§ 32.45-1 (b) and (c), 32.45-5 (b) and (g) and §§ 111.55-1, 111.55-15 and 111.60-5 of Subchapter J (Electrical Engineering) all of this chapter, to the extent that the changes are, in the opinion of the Officer in Charge, Marine Inspection, necessary in the interest of safety.

Subpart 32.50—Pumps, Piping, and Hose for Cargo Handling

§ 32.50-1 Cargo pumps for tank vessels constructed on or after November 10, 1936—TB/ALL.

On all tank vessels, the construction or conversion of which is started on or after November 10, 1936, the cargo pumps shall be designed and installed to minimize the danger of sparking. Special care shall be exercised in the design of packing spaces in order to secure ample depth and accessibility of glands. Where cargo pump shafts pierce gastight bulkheads, stuffing boxes with readily accessible gastight glands shall be provided.

§ 32.50-3 Cargo discharge—TB/ALL.

(a) Pumps or other acceptable means shall be used to discharge cargo from gravity type cargo tanks vented at gauge pressures of 4 pounds per square inch or less.

(b) The use of compressed air as the primary means of discharging cargo from such tanks is prohibited.

§ 32.50-5 Cargo pump fittings and controls on tank vessels constructed on or after November 10, 1936—TB/ALL.

(a) On all tank vessels, the construction or conversion of which is started on or after November 10, 1936, where a cargo pump is capable of developing a pressure exceeding 125 pounds at the pump under shutoff head conditions (based on water), a suitable relief valve shall be installed between the pump and shutoff 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.

(b) A pressure gage shall be installed for each pump discharge, and it shall be located at a point visible with respect to the pump controls.

§ 32.50-10 Cargo pumps on tank vessels with independent cargo tanks which were constructed prior to November 10, 1936—TB/ALL.

(a) Cargo pumps on tank vessels, the construction or conversion of which was started prior to November 10, 1936, may be located in a hold space containing independent cargo tanks or on deck. If the pump driving unit is of the type permitted in cargo pumprooms, it also may be located in the hold space. If other types of driving units are used, they shall be located on deck or in an engine compartment. If the pump drive shaft passes through decks or bulkheads into a hold space or pumproom, it shall be provided with suitable stuffing boxes at such points.

§ 32.50-15 Cargo piping on tank vessels constructed on or after July 1, 1951—TB/ALL.

(a) On all tank vessels, the construction or conversion of which is started on or after July 1, 1951, the cargo piping shall be:

(1) A fixed cargo piping system shall be installed on a tank vessel carrying Grade A, B, or C cargo. 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, where installed in tank vessels carrying Grade D or E cargo only, shall conform with the requirements contained in subparagraph (1) of this paragraph.

(3) Cargo piping shall not pass through spaces containing machinery where sources of vapor ignition are normally present: *Provided*, That, in special cases the Commandant may permit the piping to pass through such spaces if Grade E liquids only are involved.

(b) Valve operating rods in cargo tanks shall be solid, except that tank barges having plug cocks inside the cargo tanks may have operating rods of extra heavy pipe with the annular space between the lubricant tube and the pipe wall sealed with a nonsoluble material to prevent penetration of the cargo. Valve operating rods shall be of ample size, well guided and supported, and attached to the valve stems in a manner so as to prevent the operating rods from working loose. Where the operating rods pass through a deck, gastight stuffing boxes shall be fitted. The leads of operating rods shall be as direct as possible. Valves shall be of suitable design for the intended service.

(c) All cargo loading and discharge hose connections shall be fitted with valves or blind flanges.

§ 32.50-20 Cargo piping for tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.

(a) On tank vessels, the construction or conversion of which is started on or after November 10, 1936, and prior to July 1, 1951, 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.

(b) Cargo piping shall not pass through spaces containing machinery where sources of vapor ignition are normally present: *Provided*, That in special cases the Commandant may permit the piping to pass through such spaces if Grade E liquids only are involved.

(c) Valve operating rods in the cargo tanks shall be solid and of ample size, well guided and supported, and attached to the valve stems in a manner to guard against their working loose. Where such valve rods pass through the deck, gastight stuffing boxes shall be fitted. The leads of valve rods shall be as direct as possible. All valves and fittings shall be of material, design, and manufacture for the intended service on the cargo system; either rising or nonrising stem valves may be used.

§ 32.50-25 Cargo pumps and piping on tank vessels constructed prior to November 10, 1936—TB/ALL.

On tank vessels, the construction or conversion of which was started prior to November 10, 1936, cargo pumps and piping which do not fully comply with the regulations in this subchapter shall be made as nearly equal to the requirements for tank vessels constructed between November 10, 1936, and July 1, 1951, as is necessary in the interest of safety. Cargo pipe lines may pass through cargo pump engine compart-

ments provided no cargo valves are located therein.

§ 32.50-30 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 shutoff head of the cargo pump or pump relief valve setting, less static head, but in no case less than 100 pounds per square inch.

§ 32.50-35 Remote manual shutdown for internal combustion engine driven cargo pump on tank vessels—TB/ALL.

(a) Any tank vessel which is equipped with an internal combustion engine driven cargo pump on the weather deck shall be provided with a minimum of one remote manual shutdown station, conspicuously marked, and located at the midpoint of such vessel, or 100 feet from the engine, whichever is the more practical. The remote quick acting manual shutdown shall be installed on the engine so as to provide a quick and effective means of stopping the engine (such as by cutting off the intake air).

(b) This regulation applies to all installations of this type on tank vessels, but for such installations now on existing tankships at the date of next biennial inspection or October 1, 1963, whichever occurs later.

Subpart 32.52—Bilge Systems

§ 32.52-1 Bilge pumps on tank vessels constructed or converted on or after November 19, 1952—TB/ALL.

The number and arrangement of bilge pumps on each tank vessel shall conform to the requirements of Subchapter F (Marine Engineering) of this chapter, except as hereinafter provided in this subpart.

§ 32.52-5 Bilge piping for pump rooms and adjacent cofferdams on tank vessels constructed or converted on or after November 19, 1952—TB/ALL.

(a) Provisions shall be made for removing drainage from the pumproom bilges and adjacent cofferdams. A separate bilge pump, ejector, or bilge suction from a cargo pump or cargo stripping pump may be provided for this purpose. The bilge pump shall not be located in nor shall the piping pass through spaces containing machinery where sources of vapor ignition are normally present.

(b) Where a bilge suction is provided from a cargo or stripping pump, a stop-check valve shall be fitted in the suction branch, and an additional stop valve shall be fitted also if the bilge suction branch can be subjected to a head of oil from the filling line.

(c) Means shall be provided for controlling the cargo or pump room bilge pumps and their suctions or discharges in order that a flooded pump room may be pumped out. Suitable portable or manually operated pumps may be accepted as complying with this provision, or alternatively, the pump controls shall be arranged so that they are operable from inside the pump room and either from an accessible position outside the

pump room, or from the pump room casing above the freeboard deck.

§ 32.52-10 Bilge pumps and piping on tank vessels constructed or converted prior to November 19, 1952—TB/ALL.

(a) On tank vessels, the construction or conversion of which was started prior to November 19, 1952, bilge pumps and piping which do not fully comply with the regulations of this subchapter shall be made as nearly equal to the requirements for tank vessels constructed on or after November 19, 1952, as is necessary in the interest of safety.

(b) Bilge suction from hold spaces containing independent cargo tanks may be connected to cargo pumps or stripping pumps, provided the installation complies with the requirements of § 32.52-5(b).

Subpart 32.55—Ventilation and Venting

§ 32.55-1 Ventilation of tank vessels constructed on or after July 1, 1951—TB/ALL.

(a) On all tank vessels, the construction or conversion of which is started on or after July 1, 1951, all enclosed parts of the vessel, other than cargo, fuel and water tanks, cofferdams and void spaces, shall be provided with efficient means of ventilation.

(b) Compartments containing machinery where sources of vapor ignition are normally present shall be ventilated in such a way as to remove vapors from points near the floor level or the bilges. Effective steam or air actuated gas ejectors, blowers or ventilators fitted with heads for natural ventilation, with at least one duct extending to immediately below the floor plates will be approved for this purpose. Machinery spaces below the freeboard deck, in which fuels with flash point of 110° F. or lower are used, shall be equipped with power ventilation. (See § 32.60-20 for other requirements concerning pumprooms.)

§ 32.55-5 Ventilation of tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.

(a) On tank vessels, the construction or conversion of which was started on or after November 10, 1936, and prior to July 1, 1951, all enclosed parts of the vessel, other than cargo, fuel, and water tanks and cofferdams, shall be provided with efficient means of ventilation.

(b) Pumprooms and compartments containing machinery where sources of vapor ignition are normally present shall be ventilated in such a way as to remove vapors from points near the floor level or the bilges. Effective steam or air actuated gas ejectors or blowers or ventilators fitted with heads for natural ventilation, will be approved for this purpose. (See § 32.65-20 for other requirements concerning pumprooms.)

§ 32.55-10 Ventilation for tank vessels constructed prior to November 10, 1936—TB/ALL.

Ventilation of tank vessels, the construction or conversion of which was

started prior to November 10, 1936, shall be equal to the requirements of tank vessels constructed before July 1, 1951, where the changes are, in the opinion of the Officer in Charge, Marine Inspection, necessary in the interest of safety.

§ 32.55-15 Ventilation for hold spaces—TB/ALL.

Hold spaces containing independent cargo tanks shall be considered to be equivalent to cargo pumprooms and shall be ventilated and safeguarded as such.

§ 32.55-20 Venting of cargo tanks of tankships constructed on or after July 1, 1951—T/ALL.

(a) *Venting required.* (1) On all tankships, the construction or conversion of which is started on or after July 1, 1951, each cargo tank shall be equipped with a vent. The diameter of a vent shall be not less than 2½ inches.

(2) In any case where a venting system is required for a particular grade of liquid, the venting system permitted for a higher grade of liquid may be used instead.

(b) *Grade A liquids.* (1) Cargo tanks in which Grade A liquids are to be transported shall be fitted with a venting system consisting of a branch vent line from each cargo tank connected to a vent header which shall extend to a height above the weather deck equal to at least one-third the beam of the vessel and shall terminate at a comparable distance from any other living or working space, ventilator inlet, or source of ignition. When special conditions will prevent the vent line or header outlets being permanently installed at a height above the deck of one-third the beam of the vessel, then an adjustable system shall be provided which, when extended vertically, shall be capable of reaching a height of one-third the beam of the vessel.

(2) A weather hood may be installed at the vent outlet providing it is of such design as not to direct the flow of vapor below the horizontal.

(3) The branch vent lines shall consist of either:

(i) Pipe with no valves or other hindrances to a free flow of gas; or,

(ii) Piping fitted with a pressure vacuum relief valve, provided means are supplied for relieving all internal pressure on cargo tanks by fitting the valve with a positive means for opening its pressure valve to allow free passage of gases through the branch vent line or by the installation of a by-pass fitted with a manually operated stop valve.

(4) The vent header shall be fitted with a flame arrester or pressure vacuum relief valve. If a pressure vacuum relief valve is used in the header, means shall be provided for relieving all internal pressure on cargo tanks by fitting the valve with a positive means for opening its pressure valve to allow free passage of gases through the header or by the installation of a by-pass fitted with a manually operated stop valve. A suitable means of relieving pressure shall be fitted in the header in order to prevent excess pressure being built up in the

tanks, in the event of overflowing of the latter. The vent header system shall be provided with suitable connections for flushing and draining. The vent header system shall be of sufficient capacity as to be able to carry off all displaced air and vapors during loading of the cargo tanks without opening of ullage plates, cargo hatches, etc. See § 32.20-20 for liquid level gaging requirements.

(c) *Grade B or C liquids.* Cargo tanks in which Grade B or C liquids are to be transported shall be fitted with either individual pressure-vacuum relief valves which shall extend to a reasonable height above the weather deck or shall be fitted with a venting system consisting of branch vent lines connected to a vent header which shall extend to a reasonable height above the weather deck and be fitted with a flame arrester or a pressure-vacuum relief valve. The vent header system, if fitted, shall be provided with suitable connections for flushing and draining, and if desired, stop valves may be placed in the individual branch vent lines provided that each stop valve is bypassed by a pressure-vacuum relief valve.

(d) *Grade D or E liquids.* Cargo tanks in which Grade D or E liquids only are to be transported shall be fitted with gooseneck vents and flame screens.

§ 32.55-25 Venting of cargo tanks of tank barges constructed on or after July 1, 1951—B/ALL.

(a) *Venting required.* (1) On all tank barges, the construction or conversion of which is started on or after July 1, 1951, each cargo tank shall be equipped with a vent. The diameter of a vent shall be not less than 2½ inches.

(2) In any case where a venting system is required for a particular grade of liquid, the venting system permitted for a higher grade of liquid may be used instead.

(b) *Grade A, B, or C liquids.* Cargo tanks in which Grade A, B, or C liquids are to be transported shall be fitted with either individual pressure-vacuum relief valves which shall extend to a reasonable height above the weather deck or shall be fitted with a venting system consisting of branch vent lines connected to a vent header which shall extend to a reasonable height above the weather deck and be fitted with a pressure-vacuum relief valve. The vent header system, if fitted, shall be provided with suitable connections for flushing and draining, and if desired, stop valves may be placed in the individual branch vent lines: *Provided*, That each such stop valve is bypassed by a pressure-vacuum relief valve.

(c) *Grade D or E liquids.* Cargo tanks in which Grade D or E liquids only are to be transported shall be fitted with gooseneck vents and flame screens.

§ 32.55-30 Venting of cargo tanks of tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.

(a) *Venting required.* On all tank vessels, the construction or alteration of which is started on or after November 10,

1936, and prior to July 1, 1951, each cargo tank shall be equipped with a vent. The details of the venting system shall meet the requirements of this section, or alternatively, the requirements of either § 32.55-20 or § 32.55-25, as applicable, shall be met.

(b) *Grade A liquids.* (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.

(c) *Grade B or C liquids.* Cargo tanks in which Grade B or C liquids are to be transported shall be fitted with individual pressure-vacuum relief valves or shall be fitted with a venting system consisting of branch vent lines connected to a vent header which shall extend to a reasonable height above the weather deck and be fitted with a flame arrester or a pressure-vacuum relief valve.

(d) *Grade D or E liquids.* Cargo tanks in which Grade D or E liquids only are to be transported shall be fitted with gooseneck vents and flame screens unless such tanks are vented by pressure-vacuum relief valves or a venting system of branch vent lines and a vent header.

§ 32.55-35 Venting of cargo tanks on tank vessels constructed prior to November 10, 1936—TB/ALL.

The venting of cargo tanks of tank vessels, the construction or alteration of which was started prior to November 10, 1936, shall be made to equal the requirements of tank vessels constructed before July 1, 1951, where the changes are, in the opinion of the Officer in Charge, Marine Inspection, necessary in the interests of safety: *Provided*, That on such vessels carrying Grade A cargo the requirements in § 32.55-30(b) shall be met.

§ 32.55-40 Venting of cargo tanks fitted with inert-gas system—TB/ALL.

A tank vessel equipped with an approved system for maintaining all cargo tank vapor spaces nonflammable shall be accepted in lieu of the requirements of §§ 32.55-20, 32.55-25, 32.55-30 or 32.55-35.

§ 32.55-45 Venting of cofferdams and void spaces of tank vessels constructed on or after November 10, 1936—TB/ALL.

(a) Except as provided in paragraph (b) of this section, on all tank vessels, the construction or conversion of which was started on or after November 10, 1936, cofferdams and void spaces shall be provided with gooseneck vents fitted with a flame screen or pressure-vacuum relief valves. The diameter of a vent shall be not less than 2½ inches.

(b) On unmanned tank barges not fitted with fixed bilge systems in the cofferdams and void spaces, vents for cofferdams and void spaces will not be required.

Subpart 32.57—Structural Fire Protection for Tank Vessels Contracted for on or After January 1, 1963

§ 32.57-1 Application—TB/ALL.

(a) The provisions of this subpart shall apply to all tank vessels contracted for on or after January 1, 1963.

§ 32.57-5 Definitions—TB/ALL.

(a) *Standard fire test.* A "standard fire test" is one which develops in the test furnace a series of time temperature relationships as follows:

5 minutes—	1,000° F.
10 minutes—	1,300° F.
30 minutes—	1,550° F.
60 minutes—	1,700° F.

(b) *"A" Class divisions.* Bulkheads or decks of the "A" Class shall be composed of steel or equivalent metal construction, suitably stiffened and made intact with the main structure of the vessel; such as shell, structural bulkheads, and decks. They shall be so constructed, that if subjected to the standard fire test, they would be capable of preventing the passage of flame and smoke for one hour.

(c) *"B" Class bulkheads.* Bulkheads of the "B" Class shall be constructed with approved incombustible materials and made intact from deck to deck and to shell or other boundaries. They shall be so constructed that, if subjected to the standard fire test, they would be capable of preventing the passage of flame and smoke for one half hour.

(d) *"C" Class divisions.* Bulkheads or decks of the "C" Class shall be constructed of approved incombustible materials, but need meet no requirements relative to the passage of flame.

(e) *Steel.* Where the term "steel or other equivalent metal" is used in this subpart, it is intended to require a material which, by itself or due to insulation provided, has structural and integrity qualities equivalent to steel at the end of the applicable fire exposure.

(f) *Approved material.* Where in this subpart approved materials are required, they refer to materials approved under the applicable subparts of Subchapter Q (Specifications) of this chapter, as follows:

Deck Coverings.....	164.008
Structural Insulations.....	164.007
Bulkhead Panels.....	164.008
Incombustible Materials.....	164.009
Interior Finishes.....	164.012

§ 32.57-10 Construction—TB/ALL.

(a) The hull, superstructure, structural bulkheads, decks, and deckhouses shall be constructed of steel. Alternately, the Commandant may permit the use of other suitable material in special cases, having in mind the risk of fire.

(b) Bulkheads of galleys, paint and lamp lockers, and emergency generator rooms shall be of "A" Class construction.

(c) The boundary bulkheads and decks separating the accommodations and control stations from cargo, and machinery spaces and from galleys, main pantries and storerooms other than small service lockers shall be of "A" Class Construction.

(d) Within the accommodation and service areas (i.e., Galleys, main pantries and storerooms other than small service lockers) the following conditions shall apply:

(1) Corridor bulkheads in accommodation areas shall be of "A" or "B" Class intact from deck to deck. Stateroom doors in such bulkheads may have a louver in the lower half.

(2) Elevator, dumbwaiter, and other trunks shall be of "A" Class construction.

(3) Bulkheads not already specified to be of "A" or "B" Class construction may be of "A", "B", or "C" Class Construction.

(4) The integrity of any deck in way of a stairway opening shall be maintained by means of "A" or "B" Class bulkheads and doors at one level. The doors shall be of the self closing type. Such doors shall be fitted with a suitable kickout panel in the lower half. Hold-back hooks, or other means of permanently holding the door open will not be permitted. However, magnetic hold-backs operated from the bridge or from other suitable remote control positions are acceptable.

(5) Interior stairs, including stringers and treads shall be of steel or other suitable material having in mind the risk of fire. This is not intended to preclude the use of other material for nosing, walking surfaces, etc., over the steel.

(6) Except for washrooms and toilet spaces, deck coverings within accommodation spaces shall be of an approved type. However, overlays for leveling or finishing purposes which do not meet the requirements for an approved deck covering may be used in thicknesses not exceeding 3/8 of an inch.

(7) Ceilings, linings, and insulation, including pipe and duct laggings, shall be of approved incombustible material.

(8) Any sheathing, furring or holding pieces incidental to the securing of any bulkhead, ceiling, lining, or insulation shall be of approved incombustible materials.

(9) Combustible veneers, trim, decorations, etc., shall not be used in corridors or hidden spaces. This is not intended

to preclude the use of paint or an approved interior finish.

(e) Wood hatch covers may be used between cargo spaces or between stores spaces. Hatch covers in other locations shall be of steel or equivalent metal construction. Tonnage openings shall be closed by means of steel plates or equivalent metal construction.

(f) Nitrocellulose or other highly inflammable or noxious fume-producing paints or lacquers shall not be used.

Subpart 32.60—Hull Requirements for Tank Vessels Constructed on or After July 1, 1951

§ 32.60-1 Scantlings, material, and workmanship—TB/ALL.

(a) All tank vessels, the construction or conversion of which is started on or after July 1, 1951, shall conform to the requirements in this subpart in construction of hulls. The hull and deckhouses shall be of steel or iron construction except that the pilothouse and decks over quarters may be constructed of wood. Scantlings, material, and workmanship, subdivision of cargo spaces, fitting of cofferdams, and testing of tanks shall be at least equivalent to the requirements of the American Bureau of Shipping or other recognized classification society.

(b) See Subpart 32.57 for structural fire protection requirements for tank vessels constructed for on or after January 1, 1963.

§ 32.60-5 Subdivision of cargo space—TB/ALL.

The cargo space shall be divided into tight compartments as necessary to avoid excessive stresses and to provide stability.

§ 32.60-10 Segregation of cargo; Grade A, B, C, or D—TB/ALL.

(a) *General.* The galleys, living quarters, navigation spaces, general cargo spaces, boiler rooms, and enclosed spaces where sources of vapor ignition are normally present, shall be segregated from cargo tanks by cofferdams or pump rooms or tanks, either empty or used to carry liquid having a flashpoint of 150° F. or above, or deck spaces enclosed or open.

(b) *Cargo tank spaces.* Cargo tank spaces shall extend to the main deck, with hatches and vents located on the weather deck. Liquids having a flash point of not less than 150° F. may be carried in the bulk tanks located beyond the segregating cofferdams and/or pump rooms.

(c) *Enclosed spaces.* (1) Cargo and vent piping passing through enclosed spaces immediately above the bulk cargo tanks shall be continuous except that flanged joints connecting pipe sections will be permitted.

(2) No openings to cargo tank shall be permitted other than stuffing boxes through which valve control rods or permanently installed gage tapes extend and openings for use of tank cleaning machines. Openings for tank cleaning machines, when not in use, shall be kept closed by means of gastight bolted plates and when in use shall be made essentially

gas and watertight by covers through which hose or pipe to the tank cleaning machines extend.

(3) The overhead in way of quarters shall be gastight.

(d) *Stowage spaces.* The spaces described in paragraph (c) of this section may be used for stowage purposes and for general cargo provided that adequate ventilation is furnished.

(e) *Openings.* Except as provided in paragraph (c) of this section, there shall be no manholes or other openings from cargo tanks to any other enclosed spaces. Any vents, sounding tubes, and similar piping passing through such tanks shall be run in a suitable trunk.

§ 32.60-15 Segregation of cargo; Grade E—TB/ALL.

(a) *General.* The galleys, living quarters, navigation spaces, general cargo spaces, boilerrooms, and enclosed spaces containing machinery, where sources of vapor ignition are normally present, shall be segregated from the cargo tanks by tight bulkheads and intervening spaces are not required.

(b) *Cargo tank spaces.* Cargo tank spaces can be terminated at any deck with hatches on the same deck, but the vent lines shall be extended to the weather deck. Butterworth openings and extension rods may be located on the tank top.

§ 32.60-20 Pumprooms on tank vessels carrying Grade A, B, C, D and/or E liquid cargo—TB/ALL.

(a) *Cargo pumps.* In tank vessels carrying Grade A, B, C, or D liquid cargo, cargo pumps shall be isolated from source of vapor ignition by gastight bulkheads. A gastight bulkhead between the pumproom and the pump engine room may be pierced for drive shaft and pump engine control rods provided such openings are fitted with stuffing boxes or other approved gland arrangement. A steam driven pump shall not be considered a source of vapor ignition provided the steam temperature does not exceed 500° F.

(b) *Ventilation for pumprooms on tank vessels the construction or conversion of which is started between July 1, 1951, and January 1, 1963.* (1) Pumprooms of all tank vessels, the construction or conversion of which is started between July 1, 1951, and January 1, 1963, shall be ventilated in such a way as to remove vapors from points near the floor level or bilges. Pumprooms on tankships handling Grades A, B, or C liquid cargo, with machinery located below the freeboard deck, shall be equipped with power ventilation. Pumprooms equipped with power ventilation shall have the ventilation outlets terminate more than six feet from any opening to the interior part of the vessel which normally contains sources of vapor ignition.

(2) For all tank vessels, the construction or conversion of which is started between October 1, 1959, and January 1, 1963, the power ventilation shall not produce a source of vapor ignition in either the pumproom or the ventilation systems associated with the pumproom.

The capacity of power ventilation units shall be sufficient to effect a complete change of air in not more than 3 minutes, based upon the volume of the pumproom and associated trunks up to the deck at which access from the weather is provided.

(c) *Ventilation for pumprooms on tank vessels the construction or conversion of which is started on or after January 1, 1963.* (1) For all tank vessels, the construction or conversion of which is started on or after January 1, 1963, the cargo pumprooms shall be fitted in accordance with paragraphs (a) and (d) of this section. Cargo pumprooms on these vessels shall be ventilated in such a way as to remove vapors from points near the floor level or bilges. Cargo pumprooms on tank vessels handling Grade A, B, or C liquid cargo, shall be equipped with power ventilation of the exhaust type having capacity sufficient to effect a complete change of air in not more than 3 minutes based upon the volume of the pumproom and associated trunks up to the deck at which access from the weather is provided.

(2) The power ventilation units shall not produce a source of vapor ignition in either the pumproom or the ventilation systems associated with the pumproom. Inlets to exhaust ducts shall be provided and located near the floor level at points where concentrations of vapors may be expected. Ventilation from the weather deck shall be provided. Power supply ventilation may be fitted in lieu of natural ventilation, but when fitted shall be arranged to avoid turbulence in the cargo pumproom. Cargo pumprooms equipped with power ventilation shall have the ventilation outlets terminate more than six feet from any opening to the interior part of the vessel which normally contains sources of vapor ignition, and shall be so located as to minimize the possibility of recirculating contaminated air through the pumproom.

(3) Cargo pumprooms handling Grade D and/or E liquid cargo only shall be fitted with at least two ducts extended to the weather deck, one of which shall be extended to a point near the floor level. This does not preclude installation of power ventilation, if desired.

(d) *Access.* The access to a cargo pumproom in a tank vessel carrying Grade A, B, C, or D liquid cargo shall be from the open deck.

§ 32.60-25 Living quarters—TB/ALL.

(a) For living quarters the partitions and sheathing shall be of an approved fire resistive construction. The specification for incombustible materials is in Subchapter Q (Specifications) of this chapter.

(b) See Subpart 32.57 for structural fire protection for tank vessels constructed for on or after January 1, 1963.

§ 32.60-30 Tank vessels with independent tanks—TB/ALL.

(a) Independent cargo tanks may be located in hold spaces or in other cargo tanks; however, a working space of at

least 15 inches shall be maintained around each independent tank, or else provisions shall be made for moving such tanks to furnish such working space, except that less than 15 inches around such tanks may be permitted if in the judgment of the Officer in Charge, Marine Inspection, having jurisdiction, a satisfactory inspection of the cargo tanks and hull structure can be made.

(b) When an independent cargo tank is located in an enclosed space other than a cargo tank, such enclosed space shall be considered as equivalent to a pumproom and shall be safeguarded as such as required by this subpart.

(c) Cargo tanks independent of the hull structure shall be supported in saddles or on foundations of steel or other suitable material and securely attached in place to preclude the cargo from being damaged or shifting as a result of collision. The arrangement shall be such as to permit longitudinal and circumferential, or athwartship and vertical, expansion of the cargo tanks. Each tank shall be supported so as to prevent the concentration of excessive loads on the supporting portion of the shell.

§ 32.60-35 Tank vessels carrying Grade A liquid cargo—TB/ALL.

Grade A liquids having a Reid vapor pressure in excess of 25 pounds per square inch shall be transported in cargo tanks which are independent of the hull.

§ 32.60-40 Construction and testing of cargo tanks and bulkheads—TB/ALL.

(a) All cargo tanks vented at gage pressure of 4 pounds per square inch or less shall be constructed and tested as required by standards established by the American Bureau of Shipping or other recognized classification society. The design of cargo tanks integral with the hull and vented at a gage pressure exceeding 4 pounds per square inch but not exceeding 10 pounds per square inch gage pressure will be given special consideration by the Commandant.

(b) Cargo tanks vented at a gage pressure exceeding 10 pounds per square inch are considered unfired pressure vessels and shall be of cylindrical or similar design and meet the requirements of Parts 52 through 61 of Subchapter F (Marine Engineering) of this chapter.

§ 32.60-45 Segregation of spaces containing the emergency source of electric power—TB/ALL.

(a) The provisions of this section shall apply to all vessels contracted for on or after October 1, 1958.

(b) When a compartment containing the emergency source of electric power, or vital components thereof, adjoins a space containing either the ship's service generators or machinery necessary for the operation of the ship's service generators, all common bulkheads and/or decks shall be protected by approved "structural insulation" or other approved material. This protection shall be such as to be capable of preventing an excessive temperature rise in the space

containing the emergency source of electric power, or vital components thereof, for a period of at least one hour in the event of fire in the adjoining space. Bulkheads or decks meeting Class A-60 requirements, as defined by § 72.05-10 of Subchapter H (Passenger Vessels) of this chapter, will be considered as meeting the requirements of this paragraph.

Subpart 32.63—Hull and Cargo Tank Requirements for Tank Barges Constructed or Converted on or After July 1, 1964, and Carrying Certain Dangerous Bulk Cargoes

§ 32.63-1 Application—B/ALL.

(a) The requirements of this subpart shall apply to all tank barges, the construction or conversion of which is started on or after July 1, 1964, and carrying bulk cargoes as follows:

(1) Flammable liquids having a Reid vapor pressure in excess of 25 pounds per square inch, absolute, in independent tanks (Part 32).

(2) Liquefied flammable gases (Part 38 of this subchapter).

(3) Flammable or combustible liquids having lethal characteristics (Class B or C poisons) (Part 39 of this subchapter).

(4) Certain flammable or combustible dangerous cargoes (Part 40 of this subchapter).

§ 32.63-5 Barge hull classifications—B/ALL.

(a) Each barge subject to the provision of this subpart shall be assigned a hull type number. The Commandant will designate the barge hull types to be used for carrying cargoes in order to insure that the vessel is designed consistent with the degree and nature of the hazard of the commodity carried.

(b) For this purpose the barge hull types shall be as follows:

(1) *Type I barge hull.* Barge hulls classed as Type I are those designed to carry products which require the maximum preventive measures to preclude the uncontrolled release of the cargo to the waterways and/or atmosphere.

(2) *Type II barge hull.* Barge hulls classed as Type II are those designed to carry products which require substantial preventive measures to preclude uncontrolled release to the atmosphere, but whose uncontrolled release to the waterways does not constitute a longlasting public or operating personnel hazard, though local and temporary pollution may occur.

(3) *Type III barge hull.* Barge hulls classed as Type III are those designed to carry products of sufficient hazard to require a moderate degree of control.

§ 32.63-8 Alternative arrangements—B/ALL.

(a) Alternative arrangements, differing from those specifically required by this subpart, may be considered and approved by the Commandant, if it is demonstrated to his satisfaction that a degree of safety is obtained which is consistent with the intent of this subpart.

§ 32.63-10 Rakes and coamings—B/ALL.

(a) Each barge hull shall be constructed with a suitable bow form (length, shape, and height of headlog) to protect against diving at the maximum speed at which the barge is designed to be towed. In any integrated tow, only the lead barge need comply with this requirement. In any case, the operator of the towing vessel shall be guided by appropriate speed limitations.

(b) All open hopper type barge hulls shall be provided with coamings around the hopper space and, additionally, a 36-inch minimum height plowshare breakwater on the forward rake. Coamings shall have a minimum height of 36 inches forward graduated to a minimum height of 24 inches at midlength and 18 inches thereafter.

§ 32.63-15 Subdivision and stability—B/ALL.

(a) *General.* In addition to complying with the requirements of § 31.10-30 of this subchapter as applicable, Types I and II barge hulls shall comply with the applicable provisions of this section.

(b) *Types I and II barge hulls.* (1) Types I and II barge hulls shall be constructed with a complete watertight deck, or if of "open hopper type", of such construction that positive buoyancy and stability will be maintained when the barge is fully loaded and the hopper space is flooded to the height of the main deck. Credit may be given for the buoyancy, if any, of the immersed portion of the full cargo tanks when an effective arrangement for securing the tanks is provided.

(2) (i) Type I barge hulls shall retain positive buoyancy and stability after holing the bottom or side shell plating anywhere on its girth, including the intersection of a transverse and a longitudinal watertight bulkhead.

(ii) Type I box barge hulls, specifically designed for operation in an integrated tow, shall retain positive buoyancy and stability after holing the bottom shell plating anywhere on its girth, except in way of a transverse watertight bulkhead, or after holing the side shell plating in way of a transverse watertight bulkhead.

(3) Type II barge hulls shall retain positive buoyancy and stability after holing the bottom or side shell plating anywhere on its girth except in way of a transverse watertight bulkhead.

§ 32.63-20 Hull structure—B/ALL.

(a) *General.* In addition to complying with the requirements of § 32.60-1, as applicable, barge hulls of Types I and II shall comply with the provisions of this section.

(b) *Types I and II barge hull.* Under an assumed grounding condition such that the forward rake bulkhead rests upon a pinnacle at the water surface, the maximum hull bending stress shall not exceed the following limits:

(1) Independent tanks may be installed in such a manner that they do not contribute to the strength and stiff-

ness of the barge. In such case, the hull stress shall not exceed either 50 percent of the minimum ultimate tensile strength of the material or 70 percent of the yield strength when specified, whichever is greater.

(2) The Commandant may consider a reduction in hull stress when independent tanks are installed in such a manner as to contribute to the strength and stiffness of the barge and this is accounted for in determining the effective section modulus of the barge. In such case, the hull stress shall not exceed the percentage stress values prescribed in subparagraph (1) of this paragraph multiplied by the quantity $(1.5 - \frac{SWT}{UTS})$, where SWT is the stress calculated without including the effect of the tanks, and UTS is the minimum ultimate tensile strength of the material. The value SWT, however, shall in no case be more than 75 percent of UTS.

§ 32.63-25 Cargo tanks and supports—B/ALL.

(a) *General.* Saddles and hold-down securing straps for independent cargo tanks shall be designed to prevent tank failure due to loads induced in the saddles or straps by barge deflection.

(b) *Collision protection.* (1) All independent cargo tanks installed on Type I and Type II barge hulls shall be protected with suitable collision chocks or collision straps to withstand a longitudinal collision load of one and one-half times the weight of the tank and cargo. All other independent cargo tanks shall be provided with suitable collision chocks or collision straps to withstand a longitudinal collision load equal to the weight of the tank and cargo.

(2) All cargo tanks shall be so located as to reduce the likelihood of their being damaged in the event of collision. This protection shall be obtained by locating the cargo tanks not less than 4 feet from the side shell and box-end for Type I hulls and 3 feet for Type II barge hulls, and not less than 25 feet from the headlog at the bow for both types.

(c) *Cargo tank design.*—(1) *Types I and II barge hulls.* (i) In addition to requirements provided for in applicable regulations for a specific commodity, cargoes subject to the provisions of this subpart shall be transported in cargo tanks meeting the requirements of this paragraph. Pressure vessel-type cargo tanks shall have sufficient additional strength so as to limit the maximum combined tank stress, including saddle horn and bending stresses, to 1.5 times the maximum allowable hoop stress in still water, and to the yield strength of the tank material or 70 percent of the minimum ultimate tensile strength of the tank material, if less, in the grounded condition as required by § 32.63-20(b).

(ii) Gravity type cargo tanks shall have sufficient additional strength to limit the maximum combined tank stress, including saddle horn and bending stresses, to the yield strength of the tank material or 70 percent of the minimum ultimate tensile strength of the tank ma-

terial, if less, in the grounded condition as required by § 32.63-20(b).

(2) *Type III barge hulls.* In addition to the requirements of this paragraph, pressure vessel-type cargo tanks shall have sufficient additional strength so as to limit the maximum combined stress, including saddle horn and bending stresses, to 1.5 times the maximum allowable hoop stress.

Subpart 32.65—Hull Requirements for Tank Vessels Constructed on or After November 10, 1936, and Prior to July 1, 1951

§ 32.65-1 Application—TB/ALL.

The requirements in this subpart apply to all tank vessels, the construction or conversion of which was started on or after November 10, 1936, and prior to July 1, 1951.

§ 32.65-5 Scantlings, material, and workmanship—TB/ALL.

The hull and deck houses shall be of steel or iron construction except that the pilothouse and decks over quarters may be constructed of wood. Scantlings, material, and workmanship, subdivision of cargo spaces, fitting of cofferdams, and testing of tanks shall be at least equivalent to the requirements of the American Bureau of Shipping or other recognized classification society.

§ 32.65-10 Subdivision of cargo space—TB/ALL.

The cargo space shall be divided into tight compartments as necessary to avoid excessive stresses and to provide stability.

§ 32.65-15 Cofferdams—TB/ALL.

Tank vessels equipped to carry Grade A, B, C, or D liquids shall have their galleys, living quarters, general cargo spaces, boiler rooms, and enclosed spaces containing propelling machinery or other machinery where sources of vapor ignition are normally present, segregated from their cargo tanks by cofferdams or equivalent pumprooms, tanks, or air spaces.

§ 32.65-20 Pumprooms—TB/ALL.

(a) Tank vessels handling Grade A, B, C, or D liquids shall have their cargo pumps isolated from all sources of vapor ignition by gastight bulkheads. Totally enclosed motors of the "explosion proof" type, motors ventilated on both the intake and exhaust by ducts to atmosphere, and engines driven by steam shall not be considered to be sources of vapor ignition. The gastight bulkhead between the pumproom and the pump-engine compartment may be pierced by fixed lights, drive shaft and pump-engine control rods, provided that the shafts and rods are fitted with stuffing boxes where they pass through the gastight bulkheads. The access to a cargo pumproom handling such liquids shall be from the open deck. (See § 32.60-20.)

§ 32.65-25 Living quarters—TB/ALL.

Partitions and sheathing shall be of approved fire-resistive construction.

§ 32.65-30 Tank vessels with independent tanks—TB/ALL.

Independent cargo tanks may be located in hold spaces or in other cargo tanks but in all cases a working space of at least 15 inches shall be provided around such independent tanks, or else provisions shall be made for moving them to secure such space. When independent cargo tanks are located in an enclosed space other than a cargo tank, such enclosed space shall be considered as equivalent to a pumproom, and shall be safeguarded as such, as required in the regulations in this subchapter.

§ 32.65-35 Tank vessels carrying Grade A liquids—TB/ALL.

Cargo tanks for Grade A liquids having a Reid vapor pressure in excess of 25 pounds shall be independent of the hull.

§ 32.65-40 Construction and testing of cargo tanks and bulkheads—TB/ALL.

(a) All cargo tanks to be vented at gage pressures of 4 pounds per square inch or less shall be constructed and tested as required by the requirements of the American Bureau of Shipping or other recognized classification society.

(b) All cargo tanks to be vented at gage pressures above 4 pounds per square inch shall be considered as unfired pressure vessels and shall meet the requirements for such vessels as to construction and testing, as set forth in Parts 52 to 57, inclusive, of Subchapter F (Marine Engineering) of this chapter.

(c) Gastight bulkheads shall be subjected to a thorough hose test.

Subpart 32.70—Hull Requirements for Steel Hull Tank Vessels Constructed Prior to November 10, 1936

§ 32.70-1 Application—TB/ALL.

All steel hull tank vessels, the construction or conversion of which was started prior to November 10, 1936, shall conform to the requirements in this subpart.

§ 32.70-5 Hull requirements; general—TB/ALL.

The scantlings, material, and workmanship, the subdivision of cargo spaces, the arrangement of cofferdams, the testing of tanks and cofferdams, shall be at least equivalent to the requirements of a recognized classification society for the particular service specified in the application for the certificate of inspection and permit for the transportation of liquid inflammable cargoes in bulk as of the date when the tank vessel was built or as of the date when the vessel was converted into a tank vessel. In the absence of such classification requirements, the Officer in Charge, Marine Inspection, shall satisfy himself that the vessel's structure as specified in this section is safe for the service to be specified in its certificate of inspection.

§ 32.70-10 Cofferdams—TB/ALL.

Tank vessels carrying Grade A, B, or C liquids shall be required to conform to

the construction requirements in regard to vertical cofferdams in § 32.65-15, except that a dry cargo compartment shall be considered to be equivalent to a cofferdam, and except as provided for in § 32.70-20.

§ 32.70-15 Pumprooms—TB/ALL.

Tank vessels handling Grade A, B, C or D liquid cargo shall meet the requirements for tank vessels in § 32.65-20 except that the electrical installation shall comply with the requirements of § 32.45-10(c).

§ 32.70-20 Pump-engine compartment—TB/ALL.

No cofferdam will be required between a cargo tank and a compartment containing pumping engines and their auxiliaries which are used exclusively during pumping operations, provided the pumping engine compartment contains no cargo valves and is well ventilated and provided further that internal combustion exhaust within the compartment are completely water jacketed or insulated and that gasoline engine intakes are fitted with effective flame arresters.

§ 32.70-25 Cargo tanks—TB/ALL.

Cargo tanks shall comply with the conditions specified in §§ 32.65-30 and 32.65-35, and shall pass the tests required in § 32.65-40: *Provided, however,* That less than 15 inches around such tanks may be accepted if in the judgment of the Officer in Charge, Marine Inspection, making the inspection, a satisfactory inspection of the cargo tanks and hull structure can be made.

Subpart 32.75—Hull Requirements for Wood Hull Tank Vessels Constructed Prior to November 10, 1936

§ 32.75-1 Application—TB/ALL.

All wood hull tank vessels, the construction or conversion of which was started prior to November 10, 1936, shall conform to the requirements in this subpart.

§ 32.75-5 Hull requirements; general—TB/ALL.

The scantlings, material, and workmanship, and the fitting and fastening of parts shall be at least equivalent to the requirements of a recognized classification society for the particular service specified in the application for certificate of inspection and permit for the transportation of liquid flammable cargoes in bulk as of the date when the tank vessel was built, or as of the date when the vessel was converted into a tank vessel. In the absence of such classification requirements, the Officer in Charge, Marine Inspection, shall satisfy himself that the vessel's structure as specified in this section is safe for the service to be specified in its certificate of inspection.

§ 32.75-10 Cargo tanks—TB/ALL.

Cargo tanks shall be independent of the wood hull, shall be made of steel or iron, and shall pass the tests required in § 32.65-40 (a), (b). Where cargo tanks in wood hulls are not arranged to provide

working space around them they shall be so constructed as to allow inspection of the hull, tanks, and bilges, and they shall be so installed that they can be moved to allow repairs to the hull structure and to themselves.

§ 32.75-15 Electric bonding and grounding for tanks—TB/ALL.

All independent cargo tanks in wood hull tank vessels shall be electrically bonded together with stranded copper cable of not less than No. 4 B and S gage and one end of this cable shall be grounded to a copper or brass plate of not less than 2 square feet in area and one-sixteenth inch in thickness and this plate shall be securely fastened to the hull, on the outside, at a point where it shall be covered by water when the tank vessel is unloaded.

§ 32.75-20 Hold spaces and bulkheads—TB/ALL.

In wood hull tank vessels containing independent cargo tanks for the transportation of Grade A, B, C, or D liquids, the hold spaces shall be considered as equivalent to a pumproom and shall be safeguarded and ventilated as such as required by § 32.65-20. Where the hold spaces contain equipment or operations which are sources of vapor ignition, such equipment or operations shall be isolated from other spaces by gastight bulkhead or, if it is impracticable to construct a gastight bulkhead, two structurally tight bulkheads without openings, separated by a well-ventilated air space 24 inches wide, where possible may be used.

Subpart 32.80—Tank Barges Constructed of Materials Other Than Steel or Iron

§ 32.80-1 General requirements—B/ALL.

All tank barges with hulls constructed of materials other than iron or steel, the construction or conversion of which was started prior to September 2, 1945, and to which certificates of inspection were issued prior to March 2, 1946, shall be considered the same as tank barges constructed prior to November 10, 1936.

Subpart 32.85—Lamp and Paint Rooms and Similar Compartments on Tankships

§ 32.85-1 Fireproofing of lamp, oil and paint rooms—T/ALL.

Lamp, oil and paint rooms shall be wholly and tightly lined with metal.

PART 33—LIFESAVING APPLIANCES

Subpart 33.01—General Lifesaving Requirements Sec.

- 33.01-1 Inspection of lifesaving appliances—TB/ALL.
- 33.01-5 Construction of lifesaving equipment—TB/ALL.
- 33.01-15 Responsibility of master regarding lifesaving equipment—TB/ALL.
- 33.01-20 Approval for repairs and alterations—TB/ALL.
- 33.01-25 Factory inspection of lifesaving equipment—TB/ALL.
- 33.01-27 Weight test of lifeboat installation—T/ALL.

- Sec. 33.01-30 Approval of lifesaving appliances—TB/ALL.
- 33.01-35 Magazine chests for pyrotechnic equipment—T/ALL.

Subpart 33.05—Lifeboats, Liferrafts, and Buoyant Apparatus Required

- 33.05-1 Lifeboats and liferafts for tankships; ocean and coastwise; construction or conversion of which was started prior to November 19, 1952—T/OC.
- 33.05-2 Lifeboats and liferafts for tankships; ocean and coastwise; construction or conversion of which was started on or after November 19, 1952, and prior to May 26, 1965—T/OC.
- 33.05-3 Lifeboats and liferafts for tankships; ocean and coastwise; construction or conversion of which started on or after May 26, 1965—T/OC.
- 33.05-5 Lifeboats for barges; ocean—B/O.
- 33.05-15 Lifeboats for barges; coastwise—B/O.
- 33.05-20 Lifeboats and liferafts for tank vessels; Great Lakes—TB/L.
- 33.05-25 Lifeboats, liferafts, or buoyant apparatus for tank vessels; bays, sounds, lakes other than Great Lakes, and rivers—TB/BR.
- 33.05-30 Equipment for tank vessels on short voyages beyond certificated waters—TB/LB.
- 33.05-35 Wooden lifeboats prohibited on tank vessels—TB/ALL.

Subpart 33.07—Substitution of Inflatable Liferrafts for Other Liferrafts, Lifeboats, and Buoyant Apparatus on Certain Vessels Not on an International Voyage

- 33.07-1 Inflatable liferafts on barges—B/ALL.
- 33.07-5 Inflatable liferafts for other liferafts, lifeboats, and buoyant apparatus—T/ALL.
- 33.07-10 Inflatable liferafts for lifeboats on tankships under 500 gross tons—T/ALL.
- 33.07-15 Inflatable liferafts for lifeboats on certain tankships of 500 to 1,600 gross tons—T/ALL.
- 33.07-20 Inflatable liferafts for lifeboats on certain tankships of 1,600 to 3,000 gross tons—T/ALL.
- 33.07-25 Inflatable liferafts for lifeboats on certain tankships of 3,000 gross tons and upward—T/ALL.

Subpart 33.10—Lifeboat Handling Equipment Requirements

- 33.10-1 Lifeboat davits—TB/ALL.
- 33.10-5 Lifeboat winches—TB/ALL.
- 33.10-10 Blocks and falls—TB/ALL.
- 33.10-15 Disengaging apparatus—T/OCL.
- 33.10-20 Disengaging apparatus—T/BR and B/ALL.

Subpart 33.15—Equipment for Lifeboats, Liferrafts, or Buoyant Apparatus

- 33.15-1 Lifeboat, liferaft or buoyant apparatus equipment; general—TB/ALL.
- 33.15-5 Required equipment for lifeboats—TB/ALL.
- 33.15-10 Description of equipment for lifeboats—TB/ALL.
- 33.15-15 Required equipment for rigid type liferafts and buoyant apparatus—TB/LBR.
- 33.15-16 Required equipment for inflatable liferafts—TB/ALL.
- 33.15-20 Description of equipment for liferafts and buoyant apparatus—TB/LBR.
- 33.15-25 Portable radiotelegraph apparatus—T/OC.

Sec.
33.15-90 Lifeboat, liferaft and buoyant apparatus equipment on tank vessels contracted for prior to May 26, 1965—TB/ALL.

Subpart 33.20—Stowage of Lifeboats, Liferrafts, and Buoyant Apparatus

33.20-1 Davits and launching devices—TB/ALL.
33.20-3 Embarkation aids into inflatable liferafts—T/ALL.
33.20-5 Lifeboat davit falls—T/ALL.
33.20-10 Lifeboats and liferafts kept clear for launching—TB/ALL.
33.20-15 Stowage of lifeboats and liferafts—TB/ALL.

Subpart 33.25—Markings, Care, and Inspection

33.25-5 Numbering and marking of lifeboats—TB/ALL.
33.25-10 Marking of liferafts—TB/ALL.
33.25-15 Overhaul—TB/ALL.
33.25-20 Maintenance—TB/ALL.

Subpart 33.30—Manning of Lifeboats and Liferrafts

33.30-1 Persons in charge of each lifeboat and liferaft—T/O.
33.30-3 Person in charge of each lifeboat or liferaft—T/CLB.
33.30-5 Manning of lifeboats and liferafts—TB/OCLB.

Subpart 33.35—Life Preservers

33.35-1 Number and type required—TB/ALL.
33.35-5 Distribution and stowage—TB/ALL.
33.35-10 Shipboard inspections—TB/ALL.
33.35-15 Requirements for life preservers—TB/ALL.

Subpart 33.40—Ring Life Buoys and Water Lights

33.40-1 Ring life buoys and water lights, general requirements—TB/ALL.
33.40-5 Number required on tankships—T/ALL.
33.40-10 Number required on tank barges—B/ALL.
33.40-15 Distribution and security—TB/ALL.

Subpart 33.45—Distress Signals

33.45-1 Distress signals—T/ALL and B/OC.
33.45-5 Parachute distress signals—T/OC.
33.45-10 Stowage of distress signals—TB/ALL.

Subpart 33.50—Signaling Lamp

33.50-1 Signaling lamp—T/O.

Subpart 33.55—Line-Throwing Appliances

33.55-1 Line-throwing appliances required—T/OC.
33.55-5 Accessibility—T/OC.
33.55-10 Equipment for line-throwing appliances—T/OC.
33.55-15 Service recommendations—T/OC.

AUTHORITY: The provisions of this Part 33 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply R.S. 4488, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 481, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-38, Oct. 26, 1959, 24 F.R. 8857, unless otherwise noted.

Subpart 33.01—General Lifesaving Requirements

§ 33.01-1 Inspection of lifesaving appliances—TB/ALL.

At each inspection for certification and at any other time as required by the

Officer in Charge, Marine Inspection, all lifesaving appliances on a tank vessel shall be inspected.

§ 33.01-5 Construction of lifesaving equipment—TB/ALL.

All tank vessels subject to the regulations in this subchapter shall have lifeboats, disengaging apparatus, liferafts, life preservers, and all other lifesaving apparatus constructed in accordance with the regulations contained in the applicable subparts of Subchapter Q (Specifications) of this chapter: *Provided, however,* That all lifesaving apparatus which is of the character that complied with the rules and regulations of the Commandant, on vessels in existence at the time that the regulations in this subchapter are promulgated and have been in use on such vessels, may be continued in use so long as such existing lifesaving equipment and apparatus are found to be in good and workable condition. Where lifesaving equipment and apparatus are not found to be in good and workable condition, they shall be repaired or else replaced by lifesaving equipment and apparatus of the latest approved type, as required by the regulations in this subchapter and Subchapter Q (Specifications) of this chapter. Where lifesaving equipment and apparatus are found to be in good and workable condition but deficient as to quantity or numbers, the additional quantity or numbers required by the regulations in this subchapter shall be of the latest approved type.

§ 33.01-15 Responsibility of master regarding lifesaving equipment—TB/ALL.

It shall be the duty of the master or person in charge to see that the lifeboats, liferafts, davits, falls, life preservers, and other lifesaving appliances are at all times ready for use, and that all equipment for his vessel required by the regulations in this subchapter are provided, maintained, and replaced as indicated.

§ 33.01-20 Approval for repairs and alterations—TB/ALL.

No extensive repairs or alterations, except in emergency, shall be made to any lifeboat, lifeboat disengaging apparatus, life preserver, liferaft, or other appliance subject to inspection, without advance notice to the Officer in Charge, Marine Inspection. Such repairs and alterations shall so far as is practicable be made with materials and tested in the manner specified in this subchapter and applicable requirements in Subchapter Q (Specifications) of this chapter for new construction. Emergency repairs or alterations shall be reported as soon as practicable to the Officer in Charge, Marine Inspection, where the vessel may call after such repairs are made; nor shall any lifeboat or liferaft be reconditioned or used on a tank vessel other than that for which it was built, without notice to and supervision by the Officer in Charge, Marine Inspection, where such reconditioning or repairs are to be made.

§ 33.01-25 Factory inspection of lifesaving equipment—TB/ALL.

The Coast Guard District Commander where lifesaving apparatus is built shall detail an inspector to any place where lifeboats, liferafts, or buoyant apparatus are being built, who will inspect and examine carefully their construction and he shall satisfy himself that such lifeboats, liferafts, or buoyant apparatus are constructed in accordance with the drawings, or blueprints, and specifications furnished by the builders to the Coast Guard. When the inspector approves the construction of the lifeboat, life raft, or buoyant apparatus, he will stamp his initials, together with the letters "U.S.C.G." on a blank space on the plate required to be affixed to the unit by the builder. The initials of the inspector shall be satisfactory evidence to all parties interested that the unit has been constructed in accordance with the drawings, or blueprints, and specifications on file with the Coast Guard.

§ 33.01-27 Weight test of lifeboat installation—T/ALL.

(a) The following test shall be made at least once in each two-year period. If practicable, it shall be made at the inspection for certification or at a reinspection.

(b) Each lifeboat shall be lowered to near the water and then be loaded with its allowed capacity, evenly distributed throughout the length, and then be lowered into the water until it is afloat, and be released from the falls. In making this test, persons or dead weight may be used. The total weight used shall be at least equal to the allowed capacity of the lifeboat considering persons to weigh 165 pounds each.

§ 33.01-30 Approval of lifesaving appliances—TB/ALL.

(a) Any type of lifeboat or liferaft approved by the Commandant shall be considered as equivalent to the standard lifeboat or liferaft.

(b) Lifeboats shall be of an approved type and constructed in accordance with Subpart 160.035 of Subchapter Q (Specifications) of this chapter.

(c) A Class 1 motor lifeboat is one that is fitted with a compression-ignition engine, is capable of being readily started in all conditions, and has sufficient fuel for 24 hours continuous operation. The speed ahead in smooth water when loaded with its full complement of persons and equipment shall be at least 6 knots.

(d) Rigid type liferafts shall be of an approved type and constructed in accordance with Subpart 160.018 of Subchapter Q (Specifications) of this chapter.

(e) Buoyant apparatus shall be of an approved type and constructed in accordance with Subpart 160.010 of Subchapter Q (Specifications) of this chapter.

(f) Inflatable liferafts shall be of an approved type constructed in accordance with Subpart 160.051 of Subchapter Q (Specifications) of this chapter. On tankships on an international voyage, each inflatable liferaft shall have a car-

rying capacity of not less than 6 nor more than 25 persons.

(g) In general, a suitable rescue boat shall be a small lightweight boat of rigid construction, with built-in buoyancy and capable of being readily launched and easily maneuvered. Also it shall be of adequate proportion to permit taking an unconscious person on board without capsizing. A rescue boat and its installation shall be acceptable to the Officer in Charge, Marine Inspection, as suitable for the rescue of persons accidentally falling over the side, or for similar emergency purposes. The size, shape, installation, and other factors of suitability will be determined with due consideration of the size, arrangement, intended service and crew requirements of the vessel on which it is to be installed.

(R.S. 4491, as amended; 46 U.S.C. 489)

§ 33.01-35 Magazine chests for pyrotechnic equipment—T/ALL.

Tank ships required to carry pyrotechnic distress signals or line-throwing appliances shall be provided with a portable magazine chest. (See Subpart 160.038, portable magazine chests, of Subchapter Q (Specifications) of this chapter.) Magazine chests shall be secured above the freeboard deck away from heat. Stowage in enclosed spaces or adjacent to cargo tanks is prohibited.

Subpart 33.05—Lifeboats, Liferrafts, and Buoyant Apparatus Required

§ 33.05-1 Lifeboats and liferafts for tankships; ocean and coastwise; construction or conversion of which was started prior to November 19, 1952—T/OC.

(a) All tankships shall carry a sufficient number of lifeboats on each side to accommodate all persons on board: *Provided*, That such tankships of 350 feet in length or over in ocean service, 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 amidship accommodations.

(b) No lifeboat shall be of less than 180 cubic feet measurement, except, in the case of coastwise vessels, if specifically approved by the Commandant.

(c) All tankships of 1,600 gross tons and over on an international voyage shall carry at least one Class 1 motor lifeboat on each side. The requirement of this paragraph shall not apply except for replacements, and then only if it can be done without change to existing davits, winches, and arrangements.

(d) Inflatable liferafts may be substituted for lifeboats on certain vessels not on an international voyage in accordance with Subpart 33.07.

(e) All tankships in ocean service, and all tankships of less than 1,600 gross tons on an international voyage shall carry inflatable liferafts of sufficient capacity to accommodate at least 50 percent of the persons on board. Those tankships having widely separated accommodation and/or working spaces shall have at least one liferaft in each such location.

§ 33.05-2 Lifeboats and liferafts for tankships; ocean and coastwise; construction or conversion of which was started on or after November 19, 1952 and prior to May 26, 1965—T/OC.

(a) All tankships shall carry a sufficient number of lifeboats on each side to accommodate all persons on board: *Provided*, That such tankships of 3,000 gross tons and over, having a 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 amidship accommodations.

(b) No lifeboat shall be less than 24 feet in length, except where owing to the size of the tankship, or for other reasons, the Commandant may permit smaller lifeboats, but in no case shall they be less than 16 feet in length.

(c) All tankships of 1,600 gross tons and over on an international voyage shall carry at least one Class 1 motor lifeboat on each side. The requirement of this paragraph shall not apply except for replacements, and then only if it can be done without change to existing davits, winches, and arrangements.

(d) Inflatable liferafts may be substituted for lifeboats on certain vessels not on an international voyage in accordance with Subpart 33.07.

(e) All tankships in ocean service, and all tankships of less than 1,600 gross tons on an international voyage shall carry inflatable liferafts of sufficient capacity to accommodate at least 50 percent of the persons on board. Those tankships having widely separated accommodation and/or working spaces shall have at least one liferaft in each such location.

§ 33.05-3 Lifeboats and liferafts for tankships; ocean and coastwise; construction or conversion of which started on or after May 26, 1965—T/OC.

(a) All ocean and coastwise tankships shall carry a sufficient number of lifeboats on each side to accommodate all persons on board.

(b) All tankships of 3,000 gross tons and over on an international voyage shall carry not less than four lifeboats. Two lifeboats shall be carried aft and two amidships except that in tankships which have no amidships superstructure all lifeboats shall be carried aft: *Provided*, That, if in the case of tankships with no amidships superstructure it is impracticable to carry four lifeboats aft, the Commandant may permit instead the carriage aft of one lifeboat on each side of the ship. In such cases:

(1) Each lifeboat shall not exceed 26 feet in length;

(2) Each lifeboat shall be stowed as far forward as practicable, but at least so far forward that the after end of the lifeboat is 1½ times the length of the lifeboat forward of the propeller; and

(3) Each lifeboat shall be stowed as near the sea level as is safe and practicable.

(c) No lifeboat shall be less than 24 feet in length, except where owing to the size of the tankship, or for other rea-

sons, the Commandant may permit smaller lifeboats, but in no case shall they be less than 16 feet in length.

(d) All tankships 1,600 gross tons and over on an international voyage shall carry on each side at least one Class 1 motor lifeboat.

(e) All tankships certificated for ocean service, and all tankships of less than 1,600 gross tons on an international voyage shall carry inflatable liferafts of sufficient capacity to accommodate at least 50 percent of the persons on board. Those tankships having widely separated accommodation and/or working spaces shall have at least one liferaft in each such location.

(f) Inflatable liferafts may be substituted for lifeboats on certain vessels not on an international voyage in accordance with Subpart 33.07.

§ 33.05-5 Lifeboats for barges; ocean—B/O.

(a) All tank barges which normally operate more than 20 miles offshore shall carry a sufficient number of lifeboats to accommodate all persons on board.

(b) No lifeboat shall be of less than 125 cubic feet measurement.

(c) Inflatable liferafts may be substituted for lifeboats on certain vessels in accordance with Subpart 33.07.

§ 33.05-15 Lifeboats for barges; coastwise—B/C.

(a) All tank barges which normally operate 20 miles or less offshore shall carry a sufficient number of lifeboats to accommodate all persons on board.

(b) No lifeboat on a tank barge of 100 gross tons or over shall be of less than 125 cubic feet measurement, except by approval of the Commandant. No lifeboat on a tank barge of less than 100 gross tons shall be of less than 90 cubic feet measurement, except by approval of the Commandant.

(c) Inflatable liferafts may be substituted for lifeboats on certain vessels in accordance with Subpart 33.07.

§ 33.05-20 Lifeboats and liferafts for tank vessels; Great Lakes—TB/L.

(a) All tank vessels operating on the waters of the Great Lakes shall carry a sufficient number of lifeboats to accommodate all persons on board.

(b) No lifeboat on a tank vessel of 100 gross tons or over shall be of less than 90 cubic feet measurement, except by approval of the Commandant. No lifeboat on a tank vessel of less than 100 gross tons shall be of less than 60 cubic feet measurement.

(c) All tankships of 300 gross tons and over, operating on the waters of the Great Lakes, shall carry in addition to their lifeboat equipment, one approved and fully equipped liferaft of suitable size, with one electric water light; the raft to be stowed in a manner to allow same to float clear in the event of sinking of the vessel: *Provided, however*, That all tankships of 300 gross tons or over operating on the waters of the Great Lakes which are equipped with lifeboats in accordance with § 33.05-1 or § 35.05-10 shall be exempt from this requirement. The electric water light need not be attached to the raft, but when the electric

water light is not attached to the raft, a snap hook shall be provided for this purpose.

(d) Inflatable liferafts may be substituted for lifeboats and liferafts on certain vessels in accordance with Subpart 33.07.

§ 33.05-25 Lifeboats, liferafts, or buoyant apparatus for tank vessels; bays, sounds, lakes other than Great Lakes, and rivers—TB/BR.

(a) All tank vessels, except those on an international voyage, operating exclusively on bays, sounds, lakes (other than the Great Lakes), rivers, harbors, or inland waters tributary to the Gulf of Mexico, shall carry lifeboats, liferafts, or buoyant apparatus of sufficient number to accommodate all persons on board.

(b) No lifeboat shall be of less than 60 cubic feet measurement.

(c) The minimum size of any piece of buoyant apparatus shall be such as to accommodate at least five persons.

(d) Inflatable liferafts may be substituted for lifeboats, liferafts and buoyant apparatus on certain vessels in accordance with Subpart 33.07.

(e) All tankships on an international voyage shall meet the applicable requirements of §§ 33.05-1 through 33.05-3.

§ 33.05-30 Equipment for tank vessels on short voyages beyond certificated waters—TB/LB.

(a) The Officer in Charge, Marine Inspection, may issue permits to tank vessels of less than 100 gross tons which are certificated for lake, bay, and sound routes, to engage on short voyages to points beyond such waters, but not more than 15 miles from port of refuge: *Provided*, That such vessels are equipped with a sufficient number of lifeboats, liferafts, or buoyant apparatus to accommodate all persons on board.

(b) No lifeboat shall be of less than 60 cubic feet measurement. The minimum size of any liferaft or piece of buoyant apparatus shall be such as to accommodate at least five persons.

(c) Inflatable liferafts may be substituted for lifeboats, liferafts and buoyant apparatus on certain vessels in accordance with Subpart 33.07.

§ 33.05-35 Wooden lifeboats prohibited on tank vessels—TB/ALL.

Lifeboats installed on tank vessels after September 1, 1943, shall be constructed of metal or other material approved by the Commandant. Internals, such as buoyancy tanks, water tanks, and provision and equipment lockers may be constructed of suitable materials other than metal which have been approved by the Commandant.

Subpart 33.07—Substitution of Inflatable Liferafts for Other Liferafts, Lifeboats, and Buoyant Apparatus on Certain Vessels Not On an International Voyage

§ 33.07-1 Inflatable liferafts on barges—B/ALL.

(a) On all tank barges inflatable liferafts may be substituted for lifeboats,

other types of liferafts, lifeboats, and buoyant apparatus wherever they may be required.

(b) The capacity of inflatable rafts carried in place of other liferafts, lifeboats, and buoyant apparatus shall be sufficient to accommodate all persons on board.

(c) The substitution of inflatable liferafts shall not be made without prior approval of the Officer in Charge, Marine Inspection.

§ 33.07-5 Inflatable liferafts for other liferafts, lifeboats and buoyant apparatus—T/ALL.

(a) On all tankships inflatable liferafts may be permitted as substitutes for other types of liferafts, lifeboats and buoyant apparatus required by this subpart.

(b) The capacity of inflatable liferafts carried in place of other type liferafts, lifeboats and buoyant apparatus shall be at least equivalent to that required of equipment for which substitution is made.

(c) The substitution of inflatable liferafts shall not be made without prior approval of the Officer in Charge, Marine Inspection.

§ 33.07-10 Inflatable liferafts for lifeboats on tankships under 500 gross tons—T/ALL.

(a) On all tankships under 500 gross tons, inflatable liferafts may be substituted for all required lifeboats.

(b) The total capacity of the inflatable liferafts shall be at least equal to the total number of persons that the lifeboats would have been required to accommodate. Partial substitution is permissible provided the aggregate lifeboat and inflatable liferaft capacity is sufficient to accommodate the required number of persons carried.

(c) Where substitution of inflatable liferafts is made, a suitable rescue boat shall be provided. In the case of partial substitution, a lifeboat may serve as the rescue boat.

(d) The substitution of inflatable liferafts for lifeboats shall not be made without prior approval of the Officer in Charge, Marine Inspection.

§ 33.07-15 Inflatable liferafts for lifeboats on certain tankships of 500 to 1,600 gross tons—T/ALL.

(a) On all tankships of 500 gross tons and upwards to 1,600 gross tons inflatable liferafts may be substituted for all required lifeboats provided one approved lifeboat of a size acceptable to the Officer in Charge, Marine Inspection, suitable for rescue purposes, is installed.

(b) The aggregate lifeboat and inflatable liferaft capacity shall be at least equal to the total number of persons that the lifeboats would have been required to accommodate.

(c) The launching arrangement and location of the lifeboat to be used as res-

cue boat shall be such that it can be readily launched and shall be to the satisfaction of the Officer in Charge, Marine Inspection.

(d) The substitution of inflatable liferafts for lifeboats shall not be made without prior approval of the Officer in Charge, Marine Inspection.

§ 33.07-20 Inflatable liferafts for lifeboats on certain tankships of 1,600 to 3,000 gross tons—T/ALL.

(a) On all tankships of 1,600 gross tons and upwards to 3,000 gross tons inflatable liferafts may be substituted for all except two of the required lifeboats. These lifeboats shall be of a size acceptable to the Officer in Charge, Marine Inspection, and shall be suitable for rescue purposes. In all cases, two approved lifeboats, one on each side, shall be provided.

(b) The aggregate lifeboat and inflatable liferaft capacity shall be at least equal to the total number of persons that the lifeboats, for which substitutions are made plus those remaining on board, would have been required to accommodate.

(c) The substitution of inflatable liferafts for lifeboats shall not be made without prior approval of the Officer in Charge, Marine Inspection.

§ 33.07-25 Inflatable liferafts for lifeboats on certain tankships of 3,000 gross tons and upward—T/ALL.

(a) The Commandant may give special consideration to the substitution of approved inflatable liferafts for required lifeboats on tankships of 3,000 gross tons and over.

Subpart 33.10—Lifeboat Handling Equipment Requirements

§ 33.10-1 Lifeboat davits—TB/ALL.

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

(b) On any tank vessel the keel of which was laid after September 1, 1941, davits for lifeboats weighing in excess of 5,000 pounds when fully equipped (but without persons) shall be of the gravity type.

(c) On tank vessels of 1,600 gross tons and over on an international voyage, contracted for on or after May 26, 1965, all davits shall be of the gravity type.

(d) No davit arm or frame comprising mechanical or gravity davits shall be placed on board any vessel until all the requirements of this section and Subpart 160.032 of Subchapter Q (Specifications) of this chapter have been met.

(e) Whenever mechanical or gravity davits or parts of davits, such as davit arms, or frames, are installed on vessels, to take the place of davits, davit arms, or frames which have been damaged or broken, such davits or frames shall have the manufacturer's nameplate affixed thereto.

§ 33.10-5 Lifeboat winches—TB/ALL.

(a) When lifeboat winches are installed on tank vessels, wire falls shall be provided for each set of davits.

(b) On tankships of 500 gross tons and over in ocean or coastwise service, construction or conversion of which is started on or after November 19, 1952, lifeboat winches shall be provided for all lifeboats, where the deck on which the lifeboats are carried exceeds 20 feet from the lightest seagoing draft.

(c) Lifeboat winches proposed for use in new installations shall be of an approved type and constructed in accordance with Subpart 160.015 of Subchapter Q (Specifications) of this chapter.

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

(e) Installation: Lifeboat winches shall be so located that the operator can observe the movement of the lifeboat during the lowering operation. The lead of the falls to the lifeboat winch shall be in accordance with § 33.10-10 (g).

(f) Tests: Upon completion of the installation of all lifeboat winches, and before the vessel is certificated for service, the following tests and examinations shall be made in the presence of an inspector:

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

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

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

(iii) The lifeboat winch shall be capable of controlling the speed of lowering of the fully equipped lifeboat with its complement of persons on board to not more than 120 feet per minute. In addition, the speed of lowering of the fully equipped lifeboat without its complement of persons shall be not less than 40 feet per minute.

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

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

(vi) Mechanical davits shall swing to extreme outboard position without slackening the lifeboat winch brake.

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

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

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

§ 33.10-10 Blocks and falls for lifeboats—TB/ALL.

Blocks and falls installed after May 1, 1942, shall conform to the following requirements:

(a) All blocks, falls, fairleads, pad-eyes, fastenings, etc., used in connection with lifeboat gear shall be designed with a minimum factor of safety of six, based on the maximum working load.

(b) Where lifeboat winches are installed, not more than two-part wire falls shall be used, except in specific cases where three-part wire falls may be accepted. Where lifeboat winches are not used, the falls shall be of manila rope or equivalent but wire rope may not be used.

(c) Wire rope falls of 6 x 19 regular lay filler wire construction prelubricated at the factory with suitable neutral wire rope lubricant shall be accepted as standard. Any other type of wire superior or equally as good as the minimum standard specified may be used.

(d) Falls shall be of such length that the lifeboat may be lowered to the water with the vessel at the lightest seagoing draft, listed 15 degrees either way.

(e) All ocean and coastwise vessels and all other vessels of over 1,000 gross tons, not fitted with lifeboat winches, shall be provided with covered tubs, boxes, or reels for stowage of falls and with suitable lowering bits in easily accessible positions; except that all ocean and coastwise, self-propelled vessels of over 1,000 gross tons, not fitted with lifeboat winches for which contracts for construction are let on or after September 2, 1945, shall be fitted with cruciform bits in such position as will render lowering practicable.

(f) Where more than one lifeboat is served by the same set of davits, if the falls are of manila rope, separate falls shall be provided to serve each lifeboat.

(g) Such blocks as are necessary to allow the falls to lead fair in all positions of the davit shall be fitted. Sheaves for wire rope shall have a diameter at the base of the groove at least equal to 12 times the diameter of the rope.

(h) There shall be ample clearance between the cheeks of blocks in which manila rope is used. The width between the cheeks shall be half an inch greater than the diameter of new ropes when those ropes are $3\frac{3}{4}$ inches in circumference or greater; blocks for smaller ropes shall be designed with clearance in the same proportion.

(i) Means for lubrication shall be provided for all moving parts of blocks.

(j) Where lifeboat winches are provided on tank vessels, construction or conversion of which was started prior to November 19, 1952, there shall be at least 8 feet between the center of the drum and the center of the nearest sheave.

(k) Where lifeboat winches are provided on tank vessels, construction or conversion of which is started on or after November 19, 1952, the lead sheaves to the drums shall be so located as to provide fleet angles of not more than 8 degrees for grooved drums and not more than 4 degrees for nongrooved drums. By fleet angle is meant the angle included between an imaginary line from the lead sheave perpendicular to the axis of the drum and the line formed by the wire rope when led from the lead sheave to either extremity of the drum.

§ 33.10-15 Disengaging apparatus—T/OCL.

(a) *Type required.* (1) Lifeboats on all ocean, coastwise and Great Lakes tankships of over 3,000 gross tons, the construction or conversion of which is started on or after January 1, 1961, shall be fitted with mechanical disengaging apparatus of an approved type constructed in accordance with Subpart 160.033 of Subchapter Q (Specifications) of this chapter. Such disengaging apparatus shall be so arranged as to make it possible for the lifeboats to be launched while such vessels are under way or stopped, and for both ends of the lifeboat to be released simultaneously, under tension, by one person. The gears shall be capable of being released from one position in the lifeboat while the boat is fully loaded with allowed persons and equipment. Simultaneous release shall be effected by partially rotating a shaft which shall be continuous and extend from one point of contact with the hooks.

(2) Lifeboats on all ocean, coastwise and Great Lakes tankships of not over 3,000 gross tons shall be fitted with suitable disengaging apparatus. Mechanical disengaging apparatus, if fitted, shall be of approved type constructed in accordance with Subpart 160.033 of Subchapter Q (Specifications) of this chapter.

(3) Lifeboats on all ocean, coastwise and Great Lakes tankships of over 3,000 gross tons, the construction or conversion of which is started before January 1, 1961, shall be fitted with suitable disengaging apparatus. Mechanical disengaging apparatus, if fitted, shall be as follows:

(i) On all such tankships mechanical disengaging apparatus shall be of a type approved by the Commandant.

(ii) On all such ocean and coastwise tankships, the construction or conversion of which was started on or after July 1, 1961, the arrangement shall be as described in subparagraph (1) of this paragraph.

(b) *Replacement of lifeboats on vessels of over 3,000 gross tons.* (1) Re-

placement of lifeboats on ocean, coastwise and Great Lakes tankships of over 3,000 gross tons shall be in accordance with the following:

(1) All replacement lifeboats shall be fitted with approved mechanical disengaging apparatus constructed and arranged as described in paragraph (a) (1) of this section.

(2) Replacement of lifeboats in accordance with the provisions of this paragraph may be made on an individual lifeboat basis.

§ 33.10-20 Disengaging apparatus—T/BR and B/ALL.

(a) Lifeboats shall be fitted with suitable disengaging apparatus. Mechanical disengaging apparatus shall be of a type approved by the Commandant.

(b) Not more than one type of releasing gear shall be fitted in the lifeboats of a particular vessel unless otherwise approved by the Commandant.

Subpart 33.15—Equipment for Lifeboats, Liferrafts, or Buoyant Apparatus

§ 33.15-1 Lifeboat, liferaft or buoyant apparatus equipment; general—TB/ALL.

(a) The provisions of this subpart with the exception of § 33.15-90 shall apply to all vessels contracted for on or after May 26, 1965. Vessels contracted for prior to May 26, 1965 shall meet the requirements of § 33.15-90.

(b) Equipment for lifeboats, liferafts, and buoyant apparatus shall be of good quality, efficient for the purpose they are intended to serve, and kept in good condition.

(c) Lifeboats, liferafts and buoyant apparatus shall be fully equipped before the vessel is navigated and the equipment shall remain in such lifesaving appliances throughout the voyage except as provided by § 33.25-15.

(d) It shall be unlawful to stow in any lifeboat, liferaft, or buoyant apparatus any article not required by this subpart unless such articles can be properly stowed so as not to reduce the seating capacity or space available to the occupants and so as not to adversely affect the seaworthiness of such appliances or, in the case of lifeboats, overload the davits or winches.

(e) Loose equipment, except boat-hooks in lifeboats, shall be securely attached to the lifesaving appliance to which it belongs.

§ 33.15-5 Required equipment for lifeboats—TB/ALL.

(a) The lifeboats for all tank vessels shall be equipped in accordance with Table 33.15-5 (a). For a description of the items contained in this table, and the units comprising the items, see the applicable paragraphs of § 33.15-10. The letter identification prefixing the item in the table corresponds to the paragraph designations in § 33.15-10.

TABLE 33.15-5(a)

Letter identification	Item	Tankship			Tank barge—all waters
		Ocean and coastwise	Great Lakes	Lakes, bays, sounds, and rivers	
a	Bailer	1	1	None	None
b	Bilge pump	1	None	None	None
c	Boathooks	2	1	1	1 ²
d	Bucket	2	1	1	1
e	Compass and mounting	1	None	None	None
f	Ditty bag	1	None	None	None
g	Drinking cup	1	None	None	None
h	Fire extinguisher (motor-propelled lifeboats only)	2	2	2	2
i	First-aid kit	1	None	None	None
j	Flashlight	1	1	None	None
k	Hatchet	2	2	1	None
l	Heaving line	2	None	None	None
m	Jackknife	1	None	None	1 ¹
n	Ladder, lifeboat, gunwale	1	None	None	None
o	Lantern	1	1	1	1
p	Lifeline	1	1	1	1
q	Life preservers	2	2	2	2
r	Locker	1	1	None	None
s	Mast and sail (oar-propelled lifeboats only)	1	None	None	None
t	Matches (boxes)	2	1	1	1 ²
u	Milk, condensed (pounds per person)	1	None	None	None
v	Mirror, signaling	2	None	None	None
w	Oars (units)	1	1 ¹	1 ¹	1 ¹
x	Oil, illuminating (quarts)	1	1	None	None
y	Oil, storm (gallons)	1	1	None	None
z	Painter	2	2	1	1
aa	Plug	1	1	1	1
bb	Provisions (pounds per person)	2	None	None	None
cc	Rowlocks (units)	1	1 ¹	1 ¹	1 ¹
dd	Rudder and tiller	1	1	None	1 ¹
ee	Sea anchor	1	1	None	None
ff	Signals, distress, floating orange smoke	2	None	None	None
gg	Signals, distress, red hand flare (units)	1	1 ¹ unit	None	None
hh	Signals, distress, red parachute flare (units)	1	1 ¹ unit	None	None
ii	Tool kit (motor-propelled lifeboats only)	1	1	1 ¹	1 ¹
jj	Water (quarts per person)	3	None	None	1 ¹
kk	Whistle, signaling	1	None	None	None
ll	Fishing kit	1	None	None	None
mm	Cover, protecting	1	None	None	None
nn	Signals, lifesaving	1	None	None	None
oo	Desalting kit	1	None	None	None

- ¹ Only 1 required on other than seagoing barges.
- ² Seagoing barges only.
- ³ For description of unit see § 33.15-10.
- ⁴ Lifeboats on barges need only carry 4 rowlocks.
- ⁵ Vessels in coastwise service need only carry 1 unit for each 5 lifeboats or fraction thereof.
- ⁶ Optional equipment. See § 33.15-10(j), water.

§ 33.15-10 Description of equipment for lifeboats—TB/ALL.

(a) *Bailer*. The bailer shall have a lanyard attached and shall be of sufficient size and suitable for bailing.

(b) *Bilge pump*. Bilge pumps shall be of an approved type, constructed in accordance with Subpart 160.044 of Subchapter Q (Specifications) of this chapter. They shall be of the size given in Table 33.15-10 (b) depending upon the capacity of the lifeboat as determined by the six-tenths rule as described in § 160.035-9(b).

TABLE 33.15-10 (b)

Capacity of lifeboat, cubic feet		Bilge pump size
Over—	Not over—	
330	700	1
700	-----	2
-----	-----	3

(c) *Boathooks*. Boathooks shall be of the single hook ballpoint type. Boathook handles shall be of clear grained white ash, or equivalent, and of a length and diameter as given in Table 33.15-10 (c).

TABLE 33.15-10 (c)

Length of lifeboat (feet)		Boathook handles	
Over—	Not over—	Diameter (inches)	Length (feet)
23	29	1 1/4	8
29	-----	1 3/4	10
-----	-----	2	12

(d) *Bucket*. The bucket shall be of heavy gage galvanized iron, or other suitable corrosion-resistant metal, of not less than 2 gallon capacity, and shall have a 6-foot lanyard of 12-thread manila attached.

(e) *Compass and mounting*. The compass and mounting shall be of an approved type, constructed in accordance with U. S. Coast Guard Specification dated December 14, 1944.

(f) *Ditty bag*. The ditty bag shall consist of a canvas bag and shall contain a sailmaker's palm, needles, sail twine, marline and marlinspike.

(g) *Drinking cups*. Drinking cups shall be enamel coated or plastic, graduated in ounces, and be provided with lanyards 3 feet in length.

(h) **Fire extinguisher.** Fire extinguishers shall be of an approved type (4 pounds CO₂ or 2 pounds dry chemical). One shall be attached to each end of the lifeboat.

(i) **First-aid kit.** The first-aid kit shall be of an approved type, constructed and fitted in accordance with Subpart 160.041 of Subchapter Q (Specifications) of this chapter.

(j) **Flashlight.** The flashlight shall be of an approved Type I, Size No. 3, constructed in accordance with Subpart 161.008 of Subchapter Q (Specifications) of this chapter. Three spare cells (or one 3-cell battery) and two spare bulbs, stowed in a watertight container, shall be provided with each flashlight. Batteries shall be replaced yearly during the annual stripping, cleaning, and overhaul of the lifeboat.

(k) **Hatchet.** Hatchets shall be of an approved type, constructed in accordance with Subpart 160.013 of Subchapter Q (Specifications) of this chapter. They shall be attached to the lifeboat by individual lanyards and be readily available for use, one at each end of the lifeboat.

(l) **Heaving line.** The heaving line shall be of adequate strength, 10 fathoms in length, and one inch in circumference. It shall be of such quality as to be buoyant after 24 hours submergence.

(m) **Jackknife.** The jackknife (with can opener) shall be of an approved type, constructed in accordance with Subpart 160.043 of Subchapter Q (Specifications) of this chapter.

(n) **Ladder, lifeboat gunwale.** The lifeboat gunwale ladder shall consist of 3 flat wood steps cut out for handholds. The steps shall be spaced 12 inches apart and fastened with 5/8 inch diameter manila rope. Each rope end shall be tied inside the lifeboat at about amidships with the ladder stowed on top of the side benches and ready for immediate use. Other suitable devices may be specifically approved.

(o) **Lantern.** The lantern shall contain sufficient oil to burn for at least 9 hours, and shall be ready for immediate use.

(p) **Lifeline.** The lifeline shall be properly secured to both sides of the lifeboat along its entire length, festooned in bights not longer than 3 feet, with a seine float in each bight, which float may be omitted if the line is of an inherently buoyant material and absorbs little or no water. The lifeline shall be of a size and strength not less than 3/8-inch diameter manila. The bights shall hang to within 12 inches of the water when the lifeboat is light.

(q) **Life preservers.** Life preservers shall be of an approved type, constructed in accordance with the applicable subparts of Subchapter Q (Specifications) of this chapter.

(r) **Locker.** The locker shall be suitable for the storage and preservation of the small items of equipment.

(s) **Mast and sail.** A unit, consisting of a standing lug sail together with the necessary spars and rigging, shall be provided in general agreement with Table 33.15-10 (s). The sails shall be of good quality canvas, colored Indian

TABLE 33.15-10 (s)

Length of lifeboat (feet)		Standing lug sail							Mast ¹		Yard ¹	
Over—	Not over—	Area (square feet)	Luff and head lengths	Leach length	Foot length	Clew to throat	Ounces per square	Commercial designation No.	Length	Diameter (inches)	Length	Diameter (inches)
			<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>			<i>Ft. In.</i>		<i>Ft. In.</i>	
17	19	58	5 11	12 1	8 10	10 10	14.35	10	11 2	3	6 11	2
19	21	74	6 8	13 8	10 0	12 2	14.35	10	12 6	3	7 8	2
21	23	93	7 5	15 1	11 2	13 8	14.35	10	13 10	3 1/2	8 5	2 1/2
23	25	113	8 3	16 11	12 4	15 1	14.35	10	15 2	3 1/2	9 3	2 1/2
25	27	136	9 0	18 6	13 6	16 6	14.35	10	16 6	4	10 0	3
27	29	158	9 9	20 0	14 7	17 10	17.50	8	17 10	4	10 0	3
29	31	203	11 0	22 8	16 6	20 3	20.74	6	19 2	4 1/2	11 8	3 1/2
31	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	20 6	(²)	12 0	(²)

¹ Mast lengths measured from heel to center of upper halyard sheave. Mast diameters measured at thwart. Mast and yard shall be of clear-grained spruce, fir, or equivalent.
² Subject to special consideration.

Orange (Cable No. 70072, Standard Color Card of America). Rigging shall consist of galvanized wire rope not less than 3/16 inch in diameter. The mast and sail shall be protected by a suitable canvas cover.

(t) **Matches.** A box of safety matches in a watertight container stowed in an equipment locker or secured to the underside of the stern thwart if no locker is fitted.

(u) **Milk, condensed.** One pound of condensed milk shall be provided for such person the lifeboat is certified to carry, to be stowed in lockers or other compartments, providing suitable protection.

(v) **Mirrors, signaling.** Signaling mirrors shall be of an approved type.

(w) **Oars.** A unit, consisting of a complement of rowing oars and steering oar, shall be provided for each lifeboat in accordance with Table 33.15-10(w), except that motor-propelled and hand-propelled lifeboats need only be equipped with 4 rowing oars and steering oar. All oars shall be buoyant.

TABLE 33.15-10 (w)

Length of lifeboat (feet)		Number of oars		Length of oars (feet)	
Over—	Not over—	Rowing	Steering	Rowing	Steering
15	15	4	1	8	9
19	19	6	1	10	11
21	21	6	1	11	12
23	23	6	1	12	13
25	25	8	1	13	14
27	27	8	1	14	15
29	29	8	1	15	16

(x) **Oil, illuminating.** One quart of illuminating oil shall be provided in a metal container.

(y) **Oil, storm.** One gallon of vegetable, fish, or animal oil shall be provided in a suitable metal container so constructed as to permit a controlled distribution of oil on the water, and so arranged that it can be attached to the sea anchor.

(z) **Painter.** Painters shall be of manila rope not less than 2 3/4 inches in circumference, or equivalent, and of a length not less than 3 times the distance between the deck on which the lifeboat is stowed and the light draft of the vessel.

For lifeboats on vessels in ocean, coastwise or Great Lakes service one of the painters shall have a long eye splice and be attached to the thwart with a toggle. The other painter shall be attached to the stem.

(aa) **Plug.** The automatic drain required in the lifeboat shall be provided with a cap or plug attached to the lifeboat by a suitable chain.

(bb) **Provisions.** Two pounds of hard bread or its approved equivalent shall be provided for each person the lifeboat is certified to carry. The provisions shall be packaged in hermetically sealed cans of an approved type. The cans shall be stowed in lockers or other compartments providing suitable protection.

(cc) **Rowlocks.** A unit, consisting of sufficient rowlocks and rowlock sockets for each oar required by Table 33.15-10 (w) plus 2 additional rowlocks. The rowlocks shall be attached to the lifeboat by separate chains so as to be available for immediate use, except that the two additional spare rowlocks shall be carried in the equipment locker or stowed near the stern if no locker is fitted. The rowlocks and rowlock sockets shall be distributed so as to provide the maximum amount of single banked oars practicable.

(dd) **Rudder and tiller.** The rudder and tiller shall be constructed in accordance with § 160.035-3(t) in Subpart 160.035 of Subchapter Q (Specifications) of this chapter.

(ee) **Sea anchor.** The sea anchor shall be of an approved type.

(ff) **Signals, distress, floating orange smoke.** Two approved floating orange smoke distress signals, constructed in accordance with Subpart 160.022 of Subchapter Q (Specifications) of this chapter. The service use of this equipment shall be limited to three years from date of manufacture, and replacement shall be made no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

(gg) **Signals, distress, red hand flare.** A unit, consisting of twelve approved hand red flare distress signals, in a watertight container, constructed in accordance with Subpart 160.021 or 160.023 of Subchapter Q (Specifications) of this chapter. The service use of this equipment shall be limited to three years from date of manufacture, and replace-

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ment shall be made no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

(hh) *Signals, distress, red parachute flare.* A unit, consisting of twelve approved parachute red flare distress signals, with an approved means of projecting them, all contained in a portable watertight container; or twelve approved hand-held rocket-propelled parachute red flare distress signals contained in a portable watertight container. Construction shall be in accordance with Subparts 160.024 and 160.028 or 160.036 of Subchapter Q (Specifications) of this chapter. The service use of this equipment shall be limited to three years from date of manufacture, and replacement shall be made no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

(ii) *Tool kit.* The tool kit shall consist of at least the following tools contained in a suitable container:

- (1) One 12-ounce ball peen hammer.
- (2) One screwdriver with 6-inch blade.
- (3) One pair 8-inch slip joint pliers.
- (4) One 8-inch adjustable end wrench.

(jj) *Water.* (1) For each person the lifeboat is certified to carry, there shall be provided three quarts of drinking water consisting of nine approved hermetically sealed containers per person constructed and filled in accordance with Subpart 160.026 of Subchapter Q (Specifications) of this chapter. The service life of this equipment shall be limited to 5 years from date of packing, and replacement shall be made no later than the first annual stripping, cleaning, and overhaul of the lifeboat after date of expiration. Approved desalting kits capable of producing an equal amount of drinking water may be substituted for not more than one-third of the drinking water required to be carried.

(2) The drinking water containers shall be stowed in drinking water tanks, lockers, or other compartments providing suitable protection.

(kk) *Whistle, signaling.* The whistle shall be of the ball-type, of corrosion-resistant construction, with a 36-inch lanyard attached, and in good working order.

(ll) *Fishing kit.* The fishing kit shall be of approved type constructed in accordance with Subpart 160.061 of Subchapter Q (Specifications) of this chapter.

(mm) *Cover, protecting.* The protecting cover shall be of a highly visible color, and capable of protecting the occupants against injury by exposure.

(nn) *Table of lifesaving signals.* The table of lifesaving signals shall be in accordance with the provisions of Chapter V, Regulation 16, of the International Convention for Safety of Life at Sea, 1960, and shall be printed on water resistant paper.

(oo) *Desalting kit.* One or more approved desalting kits may be used as a substitute for one-third of the required amount of drinking water per person, and shall be constructed in accordance

with Subpart 160.058 of Subchapter Q (Specifications) of this chapter.

§ 33.15-15 Required equipment for rigid type liferafts and buoyant apparatus—TB/LBR.

(a) The rigid type liferafts and buoyant apparatus for all vessels shall be equipped in accordance with Table 33.15-15 (a). For a description of the items contained in this table and the units comprising the items, see the applicable paragraphs of § 33.15-20. The letter identification prefixing the item in the table corresponds to the paragraph designation in § 33.15-20.

TABLE 33.15-15 (a)

Letter identification	Item	Liferaft		Buoyant apparatus—All waters
		Great Lakes	Lakes, bays, sounds, rivers,	
a.....	Boathook.....	1	1	None
b.....	Lifeline.....	1	1	1
c.....	Matches (boxes).....	1	None	None
d.....	Oars (units).....	1	1	None
e.....	Oil, storm (gallons).....	1	None	None
f.....	Painter.....	1	1	1
g.....	Rowlocks (units).....	1	1	None
h.....	Sea anchor.....	1	None	None
i.....	Signals, distress (units).....	1	None	None
j.....	Water light.....	1	None	1

¹ Not required on Type A liferafts.

² For description of unit see § 33.15-20.

³ Need only be 2 inches in diameter and of a length equal to the distance between the deck where stowed to the vessel's light draft plus 6 feet.

⁴ Not required on buoyant apparatus for less than 25 persons.

⁵ Applies to ocean, coastwise and Great Lakes routes.

§ 33.15-16 Required equipment for inflatable liferafts—TB/ALL.

(a) Inflatable liferafts shall be equipped with ocean service equipment for vessels on ocean and coastwise routes and with limited service equipment for vessels on Great Lakes, lakes, bays, sounds, and river routes in accordance with Subpart 160.051 of Subchapter Q (Specifications) of this chapter.

NOTE: Subpart 160.051 of this chapter requires the servicing of inflatable liferafts at approved servicing facilities. Included in the servicing at an approved facility is a complete inspection of the required equipment by a marine inspector.

§ 33.15-20 Description of equipment for liferafts and buoyant apparatus—TB/LBR.

(a) *Boathook.* Boathooks shall be of the single hook ball point type. Boathook handles shall be of clear grained white ash, or equivalent, not less than 8 feet long and 1½ inches in diameter.

(b) *Lifeline.* The lifeline shall be properly secured around the sides and ends of the liferaft, or buoyant apparatus, festooned in bights not longer than 3 feet, with a seine float in each bight, which float may be omitted if the line is of an inherently buoyant material and absorbs little or no water. The lifeline shall be of a size and strength not less than ¾-inch diameter manila.

(c) *Matches.* A box of safety matches in a watertight container.

(d) *Oars.* A unit, consisting of 4 rowing oars and one steering oar not less than 8 feet in length, shall be provided for liferafts for 7 persons or more. For liferafts for 6 persons or less, a unit shall consist of 2 paddles not less than 5 feet in length.

(e) *Oil, storm.* One gallon of vegetable, fish, or animal oil shall be provided in a suitable metal container so constructed as to permit a controlled distribution of oil on the water, and so arranged that it can be attached to the sea anchor.

(f) *Painter.* Painters shall be of manila rope not less than 2¾ inches in circumference and of a length not less than 3 times the distance between the deck on which the liferafts are stowed and the light draft of the vessel.

(g) *Rowlocks.* A unit, consisting of 5 rowlocks attached to the liferaft by separate chains and ready for immediate use, together with proper rowlock sockets so arranged as to provide 4 rowing positions and 1 steering position with the liferaft floating either side up. Rowlocks and rowlock sockets are not required on liferafts for 6 persons or less.

(h) *Sea anchor.* The sea anchor shall be constructed of good quality canvas or other satisfactory material, and shall be not less than 2 feet in diameter.

(i) *Signals, distress.* (1) A unit, consisting of equipment as specified in subparagraph (2) or (3) of this paragraph. The service use of this equipment shall be limited to 3 years from date of manufacture, and replacement shall be made no later than the first inspection (biennial or reinspection) after the date of expiration.

(2) Twelve parachute red flare distress signals with an approved means of projecting them, all contained in a portable watertight container. Construction shall be in accordance with Subparts 160.024 and 160.028 or 160.036 of Subchapter Q (Specifications) of this chapter.

(3) Six approved hand red flare distress signals and 6 parachute red flare distress signals with an approved means of projecting them, all contained in a portable watertight container. Construction shall be in accordance with Subparts 160.021, 160.024 and 160.028 or 160.036 of Subchapter Q (Specifications) of this chapter.

(j) *Water light.* The water light shall be of an approved automatic electric type, constructed in accordance with Subpart 161.001 of Subchapter Q (Specifications) of this chapter. The water light shall be attached to the liferaft or buoyant apparatus by a 12-thread manila lanyard 3 fathoms in length.

§ 33.15-25 Portable radiotelegraph apparatus—T/OC.

(a) All tankships on an international voyage shall be provided with a portable radio apparatus complying with the requirements of the Federal Communications Commission unless at least one lifeboat on each side of the vessel is fitted with a fixed radio installation. Such

portable radio shall be kept in the radio room, chartroom, or other suitable location ready to be moved to one or other of the lifeboats in the event of an emergency; however, in tankships of 3,000 gross tons and over in which lifeboats are fitted amidships and aft, such equipment shall be kept in a suitable place in the vicinity of those lifeboats which are furthest removed from the ship's main transmitter.

§ 33.15-90 Lifeboat, liferaft and buoyant apparatus equipment on tank vessels contracted for prior to May 26, 1965—TB/ALL.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 33.15-5 through 33.15-25 shall be complied with insofar as the number of items of equipment and the method of stowage of the equipment is concerned.

(2) Existing items of equipment previously approved, but not meeting the applicable specifications or requirements set forth in §§ 33.15-5 through 33.15-25 may be continued in service so long as they are maintained in a good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(3) Lifeboats previously approved without automatic drain plugs shall have two plugs or caps attached to the lifeboat by separate chains.

(4) On tank vessels certificated for ocean or coastwise service, and contracted for prior to November 19, 1952, unless other approved means are provided to achieve the same purpose, three ½-inch diameter manila grablines shall be fitted extending from gunwale to gunwale under the keel to enable persons to cling or to climb upon the upturned lifeboat. The ends of each grabline shall be securely attached to the side benches or other permanent part of the lifeboat and each grabline shall be made up with figure eight knots spaced approximately 18 inches apart in order to provide hand grips. Means shall be provided for taking up any slack in the grablines.

(5) All new installations shall meet the applicable specifications or requirements of this part.

Subpart 33.20—Stowage of Lifeboats, Liferrafts, and Buoyant Apparatus

§ 33.20-1 Davits and launching devices—TB/ALL.

(a) Tankships of 100 gross tons or more shall be equipped with separate davits for each lifeboat carried.

(b) Tankships of less than 100 gross tons and tank barges where lifeboats are carried shall provide means for the launching of such lifeboats by davits or crane or, where the freeboard is less than 6 feet when the vessel has no cargo aboard, by slide.

(c) On all tankships of 500 gross tons and over in ocean and coastwise service, the conditions set forth in subparagraphs (1) to (5), inclusive, of this paragraph shall apply. Tankships of 500 gross tons and over in Great Lakes service shall

comply with the conditions set forth in subparagraphs (1) and (3) of this paragraph.

(1) An approved ladder, constructed in accordance with Subpart 160.017 of Subchapter Q (Specifications) of this chapter shall be provided at each set of davits to afford access to the lifeboats when waterborne.

(2) All davit installations shall have at least 2 lifelines fitted to a davit span. The lifelines shall be of such length as to reach the water at the lightest draft with the vessel listed 15 degrees either way.

(3) Suitable means shall be provided on vessels engaged on international voyages for illuminating the launching gear and the lifeboats during the process of launching the lifeboats from the stowed position until they are waterborne. Similar provisions shall be made on such vessels for the illumination of any liferaft stowage areas. For detailed requirements of such illumination for tank vessels contracted for on or after November 19, 1955, see Part 111 of Subchapter J (Electrical Engineering) of this chapter.

(4) On tankships the construction or conversion of which was started on or after November 19, 1952, where applicable, means shall be provided outside the machinery space to prevent the discharge of water into the lifeboats while they are being lowered. This shall consist of baffles to deflect the water down the vessel's side, reach rods or other means to close the discharge openings, or a remote means for stopping the pumps.

(5) Lifeboats on tankships contracted for on or after May 26, 1965, shall be fitted with skates or other suitable means to facilitate launching against an adverse list of up to 15 degrees. However, skates may be dispensed with if, in the opinion of the Commandant, the arrangements are such as to insure that the lifeboats can be satisfactorily launched without skates. For vessels contracted for prior to May 26, 1965, the foregoing shall apply unless in the opinion of the Officer in Charge, Marine Inspection, it is unreasonable or impracticable or the arrangement or construction of the vessel make their use unnecessary.

(d) Lifeboats shall not be placed in the bows of tankships. They shall be stowed in such positions as to insure safe launching.

(e) Suitable access to the lifeboats shall be provided to enable the crew to prepare the lifeboats for launching.

(f) Means shall be provided for bringing the lifeboats against the ship's side and holding them there so that persons may be safely embarked.

(g) On a tankship on which inflatable liferafts have been substituted for lifeboats, a launching device for each lifeboat to be used for rescue purposes shall be installed. Radial type davits or other means may be used in sheltered waters if acceptable to the Officer in Charge, Marine Inspection.

§ 33.20-3 Embarkation aids into inflatable liferafts—T/ALL.

(a) Where inflatable liferafts are substituted for lifeboats, unless freeboard at embarkation point is such that embarkation

devices are not necessary, suitable arrangements shall be made for embarkation which shall include sufficient ladders or other suitable devices to facilitate embarkation into the inflatable liferafts when waterborne.

§ 33.20-5 Lifeboat davit falls—T/ALL.

All tankships over 1,000 gross tons shall be provided with covered tubs, boxes, or reels, in which to stow the running part of the lifeboat davit falls. Lifeboat falls shall not be painted.

§ 33.20-10 Lifeboats and liferafts kept clear for launching—TB/ALL.

The decks on which lifeboats or liferafts are carried shall be kept clear of freight or any other obstruction that would interfere with the immediate launching of the lifeboats or liferafts.

§ 33.20-15 Stowage of lifeboats and liferafts—TB/ALL.

(a) All the lifeboats and liferafts shall be stowed in such a way that they can be launched in the shortest possible time, and that, even under unfavorable conditions of list and trim from the point of view of the handling of the lifeboats and liferafts, it may be possible to embark in them as large a number of persons as possible.

(b) For tankships, arrangements shall be such that it may be possible to launch on either side of the vessel as large a number of lifeboats and liferafts as possible.

(c) Where practicable, lifeboat chocks shall be so fitted that the lifeboats they serve shall not require lifting before launching.

(d) Inflatable liferafts shall be stowed in such a manner that they will float free in the event of the vessel sinking. Stowage and launching arrangements shall be to the satisfaction of the Officer in Charge, Marine Inspection.

Subpart 33.25—Markings, Care and Inspection

§ 33.25-5 Numbering and marking of lifeboats—TB/ALL.

(a) The number of each lifeboat shall be plainly marked or painted on each side of the bow in figures 3 inches high; and, where lifeboats are carried on both sides of a vessel, the odd-numbered boats shall be stowed on the starboard side, and the even-numbered boats on the port side; i.e., lifeboat No. 1 shall be forward on the starboard side, and lifeboat No. 3 next abaft lifeboat No. 1; lifeboat No. 2 shall be forward on the port side and lifeboat No. 4 next abaft lifeboat No. 2, etc.

(b) The cubical contents and number of persons allowed to be carried on each lifeboat shall be plainly marked or painted on each side of the bow in letters and numbers 1½ inches high. For vessels on an international voyage, the vessel's port of registry shall be added in similar type letters. In addition, the number of persons allowed shall be plainly marked or painted on the top of at least two of the thwarts in letters and numbers 3 inches high.

(c) Such letters and numbers shall be dark on a light ground or light on a dark ground.

(d) The top of thwarts, side benches and footings of lifeboats shall be painted or otherwise colored international orange. The area in way of the red mechanical disengaging gear control lever, from the keel to the side bench, shall be painted or otherwise colored white, to provide a contrasting background for the lever. This band of white should be approximately 12 inches wide depending on the internal arrangements of the lifeboat.

(e) Where mechanical disengaging apparatus is used, the control effecting the release of the lifeboat shall be painted bright red and shall have thereon in raised letters either the words—"Danger—Lever Drops Boat," or the words—"Danger—Lever Releases Hooks."

§ 33.25-10 Marking of liferafts—TB/ALL.

(a) There shall be stenciled in a conspicuous place on each rigid type liferaft the number of persons the liferaft can carry.

(b) There shall be stenciled in a conspicuous place in the immediate vicinity of each inflatable liferaft the following:

INFLATABLE LIFERAFT NO. -----
----- PERSONS CAPACITY

These markings shall not be placed on the inflatable liferaft containers.

NOTE: § 160.051-8(a) of Subchapter Q (Specifications) of this chapter requires permanently attached nameplates on each inflatable liferaft and carrying case. The nameplate contains the following information: The name of manufacturer, approval number, manufacturer's model number, serial number and lot number, and the number of persons for which the inflatable liferaft is approved. In addition, the carrying case shall be marked "Ocean Service Equipment" or "Limited Service Equipment" as applicable, together with the marine inspector's initials, the date, and the letters "USCG."

§ 33.25-15 Overhaul—TB/ALL.

(a) All lifeboats, rescue boats, and rigid type liferafts shall be stripped, cleaned and thoroughly overhauled at least once in every year.

(b) Tank vessels in ocean or coastwise service having a sufficient number of lifeboats on each side to accommodate all persons on board may care for their lifeboats at sea: *Provided*, That a number of lifeboats sufficient to accommodate all persons on board are fully equipped and ready for use at all times.

(c) The lifeboat davits and falls shall be overhauled at least once in every year.

(d) Inflatable liferafts shall be serviced at an approved servicing facility in accordance with the provisions of Subpart 160.051 of Subchapter Q (Specifications) of this chapter. Inflatable liferafts shall be serviced at an approved servicing facility every 12 months or not later than the next vessel inspection for certification provided the total time since date of last servicing does not exceed 15

months. The period for servicing is computed from date of last servicing. Except in emergencies no servicing should be done aboard vessels. If at any time external damage is found to the container or straps or if the seal is broken, the Officer in Charge, Marine Inspection, shall be notified and the raft shall be serviced by an approved servicing facility.

NOTE: After the raft has been satisfactorily serviced in the presence of a marine inspector at an approved servicing facility, the raft is repacked and sealed and the carrying case stamped "PASSED" together with the date, port, and the marine inspector's initials.

§ 33.25-20 Maintenance—TB/ALL.

(a) Every lifeboat, liferaft, or piece of buoyant apparatus together with its equipment shall be kept in every respect in good condition and ready for immediate use.

(b) The material that may support the platform of a liferaft or buoyant apparatus shall be examined to determine that its strength is maintained.

(c) Air tanks shall be examined to see that they are in good condition but pressure need not be applied unless the inspector so desires to assure himself as to their condition.

(d) Disengaging apparatus, blocks and falls, if used, shall be determined to be in good condition.

(e) Disengaging apparatus, if used, shall be shown on the inspector's report, and if the inspector is unable to identify it by name, he shall take the matter up with the Coast Guard District Commander in order that such apparatus may be traced for identification and approval record.

Subpart 33.30—Manning of Lifeboats and Liferafts

§ 33.30-1 Persons in charge of each lifeboat and liferaft—T/O.

A licensed deck officer, an able seaman, or a certificated lifeboatman shall be placed in charge of each lifeboat or liferaft. He shall have a list of its lifeboatmen and other members of its crew which shall be sufficient for her safe management, and shall see that the men placed under his orders are acquainted with their several duties and stations. A second in command shall also be appointed which person shall be either a licensed deck officer, an able seaman or a certificated lifeboatman.

§ 33.30-3 Person in charge of each lifeboat or liferaft—T/CLB.

(a) A licensed deck officer, an able seaman, or a certificated lifeboatman shall be placed in charge of each lifeboat or liferaft.

(b) The person in charge shall have a list of its lifeboatmen and other members of its crew, which shall be sufficient for her safe management, and shall see that the men placed under his orders are acquainted with their several duties and stations.

§ 33.30-5 Manning of lifeboats and liferafts—TB/OCLB.

(a) There shall be for each lifeboat or liferaft a number of lifeboatmen at least equal to that specified as follows, provided, that vessels required to carry sufficient lifeboats on each side to accommodate all persons on board need only carry the lifeboatmen required for the lifeboats on one side:

(1) If the lifeboat or liferaft carries 25 persons or less, the minimum number of certificated lifeboatmen shall be 1;

(2) If the lifeboat or liferaft carries 26 persons and less than 41 persons the minimum number of certificated lifeboatmen shall be 2;

(3) If the lifeboat or liferaft carries 41 persons and less than 61 persons the minimum number of certificated lifeboatmen shall be 3.

(b) The allocation of the certificated lifeboatmen to each lifeboat and liferaft remains within the discretion of the master, according to the circumstances.

Subpart 33.35—Life Preservers

§ 33.35-1 Number and type required—TB/ALL.

(a) All tank vessels shall be provided with one approved life preserver for each person carried. An additional number of life preservers shall be provided for personnel on watch in the engine room and pilothouse.

(b) In addition to the life preservers required by paragraph (a) of this section, all tankships on an international voyage shall be provided with approved type life preservers for 5 percent of the persons carried. The additional number of life preservers required for personnel on watch in the engine room and pilothouse may be counted toward meeting this requirement.

(c) All life preservers on tankships of 500 gross tons and over on an international voyage shall be provided with a whistle of the ball-type, of corrosion-resistant construction, with a 3-foot lanyard attached, and in good working order. It shall be attached to the life preserver by the lanyard alone without hooks, snaps, clips, etc., and shall extend not less than 15 inches from the life preserver body. While stowed on the life preserver, the whistle lanyard shall be coiled and stopped-off.

(R.S. 4491, as amended; 46 U.S.C. 489)

§ 33.35-5 Distribution and stowage—TB/ALL.

Life preservers shall be distributed throughout the cabins, staterooms, berths, and other places convenient for each person on such tank vessels. The stowage of the additional number of life preservers shall be such that they are readily accessible to personnel on watch in the engine room and pilothouse.

§ 33.35-10 Shipboard inspections—TB/ALL.

At each inspection for certification, or oftener if deemed necessary, the life preserver shall be examined by an inspector

TABLE 33.40-5(a)

Length of tankship (feet)	Ocean		All services other than ocean	
	Minimum number of ring life buoys	Minimum number of ring life buoys in column 2 which shall have water lights attached	Minimum number of ring life buoys	Minimum number of ring life buoys in column 4 which shall have water lights attached
Column 1	Column 2	Column 3	Column 4	Column 5
Under 100.....	8	6	2	1
100 and under 200..	8	6	4	2
200 and under 300..	8	6	6	2
300 and under 400..	12	6	12	4
400 and under 600..	18	9	18	9
600 and under 800..	24	12	24	12
800 and over.....	30	15	30	15

to determine serviceability. When life preservers are found to be in accordance with the requirements, the inspector shall stamp them with the word "Passed," his initials, port, and date. Life preservers found not to be in a serviceable condition shall be removed from the vessel's equipment and, if beyond repair, shall be destroyed in the presence of the inspector.

§ 33.35-15 Requirements for life preservers—TB/ALL.

(a) The specifications regarding life preservers are in Subparts 160.001, 160.002, 160.005, 160.006, and 160.055 of Subchapter Q (Specifications) of this chapter.

(b) Cork and balsa wood life preservers, constructed in accordance with the applicable provisions of Subpart 160.003 or 160.004 and manufactured as approved life preservers prior to July 1, 1965, may be accepted as new or replacement equipment required by this subchapter if such life preservers are serviceable and in good condition to the satisfaction of the Officer in Charge, Marine Inspection: *Provided, however*, That such life preservers bearing basic Approval No. 160.003 or 160.004 shall not be considered as approved equipment meeting the requirements for those tankships on an international voyage, constructed or contracted for on or after May 26, 1965.

(c) All kapok and fibrous glass life preservers which do not have plastic-covered pad inserts, as required by Subparts 160.002 and 160.005 of Subchapter Q (Specifications) of this chapter, shall be removed from service.

Subpart 33.40—Ring Life Buoys and Water Lights

§ 33.40-1 Ring life buoys and water lights, general requirements—TB/ALL.

(a) All ring life buoys shall be of an approved type, constructed in accordance with Subpart 160.009 or 160.050 of Subchapter Q (Specifications) of this chapter.

(b) All water lights shall be of an approved automatic electric type, constructed in accordance with Subpart 161.001 of Subchapter Q (Specifications) of this chapter.

(c) All self-activated smoke signals shall be of an approved type, constructed in accordance with the requirements of Subpart 160.057 of Subchapter Q (Specifications) of this chapter, which shall be capable of producing smoke of a highly visible color for at least 15 minutes.

(R.S. 4491, as amended; 46 U.S.C. 489)

§ 33.40-5 Number required on tankships—T/ALL.

(a) The minimum number of approved 30-inch ring life buoys, and the minimum number of which shall have water lights attached, shall be in accordance with Table 33.40-5(a).

(b) One of the ring life buoys on each side of the vessel shall have secured to it a line at least 15 fathoms in length. On tankships on an international voyage, the line shall be of the buoyant type.

(c) On tankships on an international voyage, at least two of the ring life buoys with waterlights attached as required by Table 33.40-5(a), shall also be provided with an approved self-activated smoke signal and shall be capable of quick release from the bridge.

(d) On tankships on an international voyage, the ring life buoys required by this section shall be orange in color.

§ 33.40-10 Number required on tank barges—B/ALL.

All tank barges regardless of size, shall have at least two approved 30 inch ring life buoys on board: *Provided*, That unmanned barges are exempt from this section.

§ 33.40-15 Distribution and security—TB/ALL.

(a) All ring life buoys shall be placed so as to be readily accessible to the persons on board, and their positions plainly indicated so as to be known to all persons concerned.

(b) The ring life buoys shall always be capable of being cast loose, and shall not be permanently secured in any way.

Subpart 33.45—Distress Signals

§ 33.45-1 Distress signals—T/ALL and B/OC.

On every manned tank vessel of 150 gross tons and over there shall be carried twelve approved hand red flare distress signals 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, and replacement of out-dated items shall be made at the first port of arrival in the United States where such distress signals are available, except that replacement shall

be made in all cases within twelve months after the date of expiration. Distress signals not bearing date of manufacture shall not be carried. For specifications for these signals, see Subparts 160.021 and 160.023 of Subchapter Q (Specifications) of this chapter.

(R.S. 4491, as amended; 46 U.S.C. 489)

§ 33.45-5 Parachute distress signals—T/OC.

In addition to the equipment required by § 33.45-1, all tankships of 500 gross tons and over shall be provided with 12 approved hand-held rocket-propelled parachute red flare distress signals, contained in a portable watertight container, constructed in accordance with Subpart 160.036 of Subchapter Q (Specifications) of this chapter. Service use of the distress signals shall be limited to a period of three years from date of manufacture, and replacement of out-dated items shall be made at the first port of arrival in the United States where such distress signals are available, except that replacement shall be made in all cases within 12 months after the date of expiration.

§ 33.45-10 Stowage of distress signals—TB/ALL.

All tank vessels required to carry pyrotechnic distress signals shall carry such signals in watertight containers near the pilothouse, on the navigator's bridge, or in some other suitable, readily accessible location other than in the lifeboats. In no case shall pyrotechnics be permitted to be carried in enclosed spaces, adjacent to cargo tanks or near sources of heat. Tank vessels required to carry a magazine chest may carry the distress signals in the magazine chest.

Subpart 33.50—Signaling Lamp

§ 33.50-1 Signaling lamp—T/O.

Tankships of over 150 gross tons engaged on international voyages shall be equipped with an efficient daylight signaling lamp. For detailed requirements see Subpart 113.60 of Subchapter J (Electrical Engineering) of this chapter.

Subpart 33.55—Line-Throwing Appliances

§ 33.55-1 Line-throwing appliances required—T/OC.

(a) All ocean and coastwise tankships of 150 gross tons and over shall be equipped with an approved line-throwing appliance and equipment auxiliary thereto, as specified in this subpart.

(b) Tankships of 500 gross tons or more shall be equipped with an approved line-throwing appliance and equipment auxiliary thereto, of the impulse-projected rocket type, the requirements for which are set forth in Subpart 160.040 of Subchapter Q (Specifications) of this chapter. Lyle gun type line-throwing appliances in service on or before July 1, 1951, may be continued in use so long as in good and serviceable condition: *Provided*, That any replacements shall

be made with a line-throwing appliance of the impulse-projected rocket type.

(c) Tankships of 150 gross tons and over and less than 500 gross tons shall be equipped with an approved line-throwing appliance and equipment auxiliary thereto, of the shoulder gun type or the impulse-projected rocket type, the requirements for which are set forth in Subparts 160.031 and 160.040, respectively, of Subchapter Q (Specifications) of this chapter. Lyle gun type line-throwing appliances in service on or before July 1, 1951, may be continued in use so long as in good and serviceable condition: *Provided*, That any replacements shall be made with a line-throwing appliance of the shoulder gun type or the impulse-projected rocket type.

(d) Service use of rockets shall be limited to a period of 4 years from date of manufacture, and replacement of outdated items shall be made at the first port of arrival in the United States where such rockets are available, except that replacement shall be made in all cases within 12 months after the date of expiration.

(R.S. 4491, as amended; 46 U.S.C. 489)

§ 33.55-5 Accessibility—T/OC.

The line-throwing appliance and its equipment shall be kept always easily and immediately accessible and read for use. No part of this equipment shall be used for any other purpose.

§ 33.55-10 Equipment for line-throwing appliances—T/OC.

The equipment enumerated below is required to be carried with the various types of line-throwing appliances:

(a) *Impulse-projected rocket type.* Four rockets (2 of which shall be of the buoyant type), 4 primer-ejector cartridges, 4 service lines (each of a length not less than that specified in the approval of the appliance carried, of $\frac{1}{2}$ -inch to $\frac{3}{32}$ -inch diameter, of flax or manila, and having a breaking strength of at least 500 pounds, to be kept in faking boxes or on reels), 1 auxiliary line (1,500 feet of 3-inch circumference manila), 1 can of oil, 1 cleaning brush, 12 wiping patches, and 1 set of instructions furnished by the manufacturer, all in a suitable case or box with the appliance, except that the service lines and the auxiliary line may be stowed in an accessible location nearby.

(b) *Shoulder gun type.* Ten (10) service projectiles, 4 service lines (each not less than 400 feet in length of $\frac{3}{8}$ -inch circumference flax or cotton and having not less than 250 pounds breaking strength, or each not less than 600 feet in length of $\frac{1}{16}$ -inch or more diameter woven or braided nylon, very flexible, having a breaking strength not less than 140 pounds, or equivalent, to be kept in faking boxes or reels), 25 cartridges, 1 cleaning rod with brush, 1 can of oil, 12 wiping patches and 1 set of instructions, all in a suitable case or box with the gun, with an auxiliary line (500 feet of 3-inch circumference manila) accessible for use.

(c) *Lyle gun type on existing tank vessels.* Six (6) service projectiles, 4 service

lines (each 1,700 feet of $\frac{3}{32}$ -inch to $\frac{1}{2}$ -inch diameter flax or manila, having not less than 500 pounds breaking strength, in faking boxes or reels), 1 auxiliary line (1,500 feet of 3-inch circumference manila), 1 approved firing attachment (with accessories consisting of lanyard, wrench, washer to fit between barrel and shoulder of firing attachment, blank plug for screwing into gun when firing attachment is not in place, cartridge extractor, and 25 primers in watertight metal box), 18 bags (2½ ounces each) of black powder marked "One-half normal charge for Lyle gun, 2½ ounces black powder" in nonferrous metal screw top container, 25 paper wads, 1 ram rod, 1 wire brush, 1 can light petrolatum, 12 wiping patches, 1 tapered wooden plug for muzzle of gun when not in use, and 1 set of instructions furnished by the manufacturer of the gun, all in a suitable box or chest with the gun.

§ 33.55-15 Service recommendations—T/OC.

The following precautions and procedure are recommended for the use of line-throwing appliances and equipment:

(a) *Impulse-projected rocket type.* Follow the operating instructions and safety precautions furnished by the manufacturer.

(b) *Shoulder gun type.* Follow the operating instructions and safety precautions furnished by the manufacturer.

(c) *Lyle gun type on existing tank vessels.* (1) Service powder charge should be about 5 ounces of black powder, and the powder bags should be furnished to the vessel containing 2½ ounces of black powder and marked "one-half normal charge." Under extraordinary circumstances, 7½ ounces (three 2½-ounce bags) of black powder may be used.

(2) In making the line fast to the shank, pass it through the eye and take three or more half-hitches around its own part, leaving a loop of about 10 to 12 inches and taking the hitches about 6 inches apart. This will allow the line to slip slightly through the eye of the shank before the hitches fetch up, thus easing the strain on the line at the loop during the initial acceleration.

(3) A considerable bight led over the side is recommended wherever possible, as it will tend to lessen the jerk on the line at initial acceleration.

(4) At least a fathom of the line from the shank should be thoroughly wet before using to prevent burning.

(5) The faking box or reel should always be faced in the direction of the line of fire and placed abreast of the gun and as close to ship's side as possible. It is not advisable to place the line too close to the muzzle of the gun, as the concussion may lift several layers or coils from the top, causing a snarl which in turn may cause the line to part.

(6) Care should be taken in placing the equipment to prevent fouling of the line in rigging, ridge ropes, etc., which have a tendency to rise or jump up when the gun is fired.

(7) Having made the gun and equipment ready for use, the following procedure in firing is recommended: select

a place where the gun may recoil without striking anything, or where it may be securely lashed down. Note the position of the vessel to be relieved, and the direction and approximate force of the wind, and then place the gun in position, making allowance for the drift of the line. Place the line on the windward side of the gun and about 3 feet from it. Make the line fast in the eye of the shank and insert the powder charge, projectile, and primer. In loading, make sure that the projectile is seated against the wad.

(8) After using, the line should be thoroughly dried before rewinding or faking.

PART 34—FIREFIGHTING EQUIPMENT

Subpart 34.01—Application

- Sec.
34.01-1 General—TB/ALL.
34.01-5 Equipment installed but not required—TB/ALL.
34.01-10 Protection for unusual arrangements or special products—TB/ALL.

Subpart 34.05—Firefighting Equipment, Where Required

- 34.05-1 Fire main system—T/ALL.
34.05-5 Fire-extinguishing systems—T/ALL.
34.05-10 Portable and semiportable extinguishers—TB/ALL.
34.05-15 Sand—TB/ALL.
34.05-20 Fire axes—T/ALL.

Subpart 34.10—Fire Main System, Details

- 34.10-1 Application—TB/ALL.
34.10-5 Fire pumps—T/ALL.
34.10-10 Fire station hydrants, hose and nozzles—T/ALL.
34.10-15 Piping—T/ALL.
34.10-90 Installations contracted for prior to May 26, 1965—T/ALL.

Subpart 34.13—Steam Smothering System, Details

- 34.13-1 Application—T/ALL.
34.13-90 Installations contracted for prior to January 1, 1962—T/ALL.

Subpart 34.15—Carbon Dioxide Extinguishing Systems, Details

- 34.15-1 Application—T/ALL.
34.15-5 Quantity, pipe sizes, and discharge rates—T/ALL.
34.15-10 Controls—T/ALL.
34.15-15 Piping—T/ALL.
34.15-20 Carbon dioxide storage—T/ALL.
34.15-25 Discharge outlets—T/ALL.
34.15-30 Alarms—T/ALL.
34.15-35 Enclosure openings—T/ALL.
34.15-40 Pressure relief—T/ALL.
34.15-90 Installations contracted for prior to January 1, 1962—T/ALL.

Subpart 34.17—Fixed Foam Extinguishing Systems, Details

- 34.17-1 Application—T/ALL.
34.17-5 Quantity of foam required—T/ALL.
34.17-10 Controls—T/ALL.
34.17-15 Piping—T/ALL.
34.17-20 Discharge outlets—T/ALL.
34.17-25 Additional protection required—T/ALL.
34.17-90 Installations contracted for prior to January 1, 1962—T/ALL.

Subpart 34.20—Deck Foam System, Details

- 34.20-1 Application—T/ALL.
34.20-3 Cargo area definition—T/ALL.
34.20-5 Quantity of foam required—T/ALL.

Sec.
34.20-10 Controls—T/ALL.
34.20-15 Piping—T/ALL.
34.20-20 Discharge outlets—T/ALL.
34.20-90 Installations contracted for prior to January 1, 1962—T/ALL.

Subpart 34.25—Water Spray Extinguishing Systems, Details

34.25-1 Application—T/ALL.
34.25-5 Capacity and arrangement—T/ALL.
34.25-10 Controls—T/ALL.
34.25-15 Piping—T/ALL.
34.25-20 Spray nozzles—T/ALL.
34.25-90 Installations contracted for prior to January 1, 1964—T/ALL.

Subpart 34.50—Portable and Semiportable Extinguishers

34.50-1 Application—TB/ALL.
34.50-5 Classification—TB/ALL.
34.50-10 Location—TB/ALL.
34.50-15 Spare charges—TB/ALL.
34.50-90 Vessels contracted for prior to January 1, 1962—TB/ALL.

Subpart 34.55—Sand

34.55-1 Application—TB/ALL.
34.55-5 Amount required—TB/ALL.
34.55-10 Substitute—TB/ALL.

Subpart 34.60—Fire Axes

34.60-1 Application—T/ALL.
34.60-5 Number required—T/ALL.
34.60-10 Location—T/ALL.

AUTHORITY: The provisions of this Part 34 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply R.S. 4488, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 481, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-38, Oct. 26, 1959, 24 F.R. 8857.

Subpart 34.01—Application

§ 34.01-1 General—TB/ALL.

(a) The provisions of this part shall apply to all tank vessels except as otherwise noted in this part.

§ 34.01-5 Equipment installed but not required—TB/ALL.

(a) Where firefighting equipment is not required, but is installed, the equipment and its installation shall be of an approved type.

§ 34.01-10 Protection for unusual arrangements or special products—TB/ALL.

(a) The provisions of this part contemplate fire protection for tank vessels of conventional design carrying the usual liquid petroleum products in internal tanks. Whenever unusual arrangements exist or special cargoes are carried upon which the vessel's normal firefighting equipment will be ineffective, additional suitable firefighting equipment of approved type shall be carried.

Subpart 34.05—Firefighting Equipment, Where Required

§ 34.05-1 Fire main system—T/ALL.

(a) Fire pumps, piping, hydrants, hose and nozzles shall be installed on all tankships.

(b) The arrangements and details of the fire main system shall be as set forth in Subpart 34.10.

§ 34.05-5 Fire-extinguishing systems—T/ALL.

(a) Approved fire-extinguishing systems shall be installed on all tank ships in the following locations:

(1) *Dry cargo compartments.* A carbon dioxide or water spray system shall be installed for the protection of all dry cargo compartments. On vessels contracted for prior to January 1, 1962, a steam smothering system may be used in lieu thereof. In any case, where such dry cargo compartments are readily accessible by means of doors such spaces need be protected only by the fire main system.

(2) *Cargo tanks.* A deck foam system shall be installed for the protection of all cargo tank spaces. Where a deck foam system is installed, an approved inert gas, steam or other system may also be installed for purposes of fire prevention or inerting of cargo tanks. For vessels under 100 feet in length, the semiportable equipment required by footnote 1 of Table 34.10-5(a) will be considered as meeting the requirements of this subparagraph. On vessels contracted for prior to January 1, 1962, a steam smothering, inert gas, fixed foam or carbon dioxide system may be used in lieu of the deck foam system for the protection of the cargo tank spaces.

(3) *Lamp and paint lockers and similar spaces.* A carbon dioxide or water spray system shall be installed in all lamp and paint lockers, oil rooms, and similar spaces. Vessels contracted for prior to January 1, 1962, shall have a carbon dioxide, water spray, or steam smothering system. Vessels contracted for prior to November 19, 1952, shall have a carbon dioxide water spray, steam smothering, or foam system.

(4) *Pumprooms.* A carbon dioxide, inert gas, foam or water spray system shall be installed for the protection of all pumprooms. Vessels contracted for prior to January 1, 1962, and after July 1, 1951, shall have the same protection or a steam smothering system. For vessels contracted for prior to July 1, 1951, such systems are not required but if installed shall meet the requirements of this section.

(5) *Boilerrooms.* On tankships contracted for on or after November 19, 1952, a carbon dioxide or foam system shall be installed for the protection of all spaces containing oil fired boilers, either main or auxiliary, their fuel oil service pumps and/or such fuel oil units as the heaters, strainers, valves, manifolds, etc., that are subject to the discharge pressure of the fuel oil service pumps.

(6) *Machinery spaces.* A carbon dioxide system shall be installed for the protection of machinery spaces containing internal combustion propelling engines using fuel having a flashpoint of less than 110 degrees F.

(7) *Internal combustion installations.* If a fire-extinguishing system is installed to protect an internal combustion installation, the system shall be of the carbon dioxide type.

(8) *Enclosed ventilating system.* On tankships contracted for on or after January 1, 1962, where an enclosed ven-

tilating system is installed for electric propulsion motors or generators, a carbon dioxide extinguishing system shall be installed in such system.

(b) The arrangements and details of the fire-extinguishing systems shall be as set forth in Subparts 34.10 through 34.20.

§ 34.05-10 Portable and semiportable extinguishers—TB/ALL.

(a) Approved portable and semiportable extinguishers shall be provided for all tank vessels.

(b) The type, size, location and arrangement of portable and semiportable extinguishers shall be as set forth in Subpart 34.50.

§ 34.05-15 Sand—TB/ALL.

(a) All spaces containing oil fired boilers shall have available in such spaces sand or an acceptable substitute.

(b) The arrangement and details of the carriage of the sand shall be as set forth in Subpart 34.55.

§ 34.05-20 Fire axes—T/ALL.

(a) Fire axes shall be provided on all tankships.

(b) The location and arrangement of fire axes shall be as set forth in Subpart 34.60.

Subpart 34.10—Fire Main System, Details

§ 34.10-1 Application—TB/ALL.

(a) On all tankships the provisions of this subpart, with the exception of § 34.10-90, shall apply to all fire main installations contracted for on or after May 26, 1965. Installations contracted for prior to May 26, 1965, shall meet the requirements of § 34.10-90.

(b) If a fire main system is installed on a tank barge, the system shall meet the intent of this subpart insofar as reasonable and practicable.

§ 34.10-5 Fire pumps—T/ALL.

(a) Tankships shall be equipped with independently driven fire pumps in accordance with Table 34.10-5(a).

TABLE 34.10-5(a)—FIRE PUMPS

Size vessel, L.O.A.		Minimum number of pumps	Powerful streams of water per pump	Minimum hydrant and hose size	
Over—	Not over—			Exterior stations	Interior stations
(Feet)	(Feet)	(1)		(Inches)	(Inches)
100	100	1	2	1½	1½
250	250	2	2	1½	1½
400	400	2	2	1½	1½
400	650	2	2	2½	1½
650	650	2	3	4½	1½

¹ Vessels of 65 feet and not over 100 feet shall be equipped with 2 B-V extinguishers. (Refer to Table 34.50-5(c).) Vessels under 65 feet shall be equipped with 1 B-V extinguisher. (Refer to Table 34.50-5(c).)

² Vessels of 1,000 gross tons and over on an international voyage shall have at least 2 fire pumps.

³ From hydrants having greatest pressure drop between fire-pump(s) and nozzles.

⁴ Where 2½-inch hydrant size is required, two 1½-inch outlets may be substituted therefor with two 1½-inch hoses.

(b) Each pump shall be capable of delivering simultaneously the number of streams of water required by Table

34.10-5(a) from the outlets having the greatest pressure drop between fire pump(s) and nozzles at a Pitot tube pressure of approximately 75 p.s.i. Where 1½-inch hose is permitted in lieu of 2½-inch hose by footnote 3 of Table 34.10-5(a), the pump capacity shall be determined on the basis that both hoses are used.

(c) On tankships of 1,000 gross tons and over on an international voyage, each required fire pump, while delivering water through the fire main system at a pressure corresponding to that required by § 34.10-15(e), shall have a minimum capacity of at least two-thirds of that required for an independent bilge pump if no length correction is taken for the cargo tank space. However, in no case shall the capacity of each fire pump be less than that otherwise required by this section.

(d) Fire pumps shall be fitted on the discharge side with relief valves set to relieve at 25 p.s.i. in excess of the pressure necessary to maintain the requirements of paragraph (b) of this section.

(e) Fire pumps shall be fitted with a pressure gage on the discharge side of the pumps.

(f) Fire pumps may be used for other purposes provided at least one of the required pumps is kept available for use on the fire system at all times. Unless specifically approved by the Commandant no branch lines shall be connected to the fire mains for other than fire, deck wash or tank cleaning purposes. Other discharge lines shall lead from a discharge manifold near the fire pump. In no case shall a pump having connection to an oil line be used as a fire pump.

(g) On all vessels where two fire pumps are required, they shall be located in separate spaces, and the arrangement of pumps, sea connections, and sources of power shall be such as to insure that a fire in any one space will not put all of the fire pumps out of operation. However, where it is shown to the satisfaction of the Commandant that it is unreasonable or impracticable to meet this requirement due to the size, or arrangement of the vessel, or for other reasons, the installation of a total flooding carbon dioxide system may be accepted as an alternate method of extinguishing any fire which would affect the powering and operation of at least one of the required fire pumps.

§ 34.10-10 Fire station hydrants, hose and nozzles—T/ALL.

(a) The size of fire station hydrants and hose required shall be as noted in Table 34.10-5(a).

(b) Fire hydrants shall be of sufficient number and so located that any part of living quarters, storerooms, working spaces and weather decks accessible to crew while at sea may be reached with two effective spray patterns of water, one of which shall be from a single 50-foot length of hose. In main machinery spaces all portions of such spaces shall be capable of being reached by at least 2 effective spray patterns of water, each of which shall be from a single 50-foot length of hose from separate outlets.

(c) The outlets at the fire station hydrant shall be limited to any position from the horizontal to the vertical pointing downward so that hose will lead horizontally or downward to minimize possibility of kinking.

(d) All fire station hydrants shall be equipped with spanners suitable for use on the hose at that station.

(e) Each fire station hydrant shall be provided with at least one length of hose with approved combination nozzle attached. A suitable hose rack or other device shall be provided. Hose racks on weather decks shall be located so as to afford protection from heavy seas. The hose shall be stored in the open or so as to be readily visible.

(f) The pipes and fire station hydrants shall be so placed that the fire hose may be easily coupled to them. All hydrants shall be so located as to be readily accessible. If deck cargo is carried, it shall not interfere with access to the fire station hydrants, and the pipes shall be arranged as far as practicable to avoid risk of damage by such cargo.

(g) Each fire station hydrant or "y" branch shall be equipped with a valve so that the hose may be removed while there is pressure on the fire main.

(h) Fire station hydrant connections shall be brass, bronze, or other equivalent metal. National Standard fire hose coupling threads shall be used for the 1½-inch and 2½-inch sizes, i.e., 9 threads per inch for 1½-inch hose and 7½ threads per inch for 2½-inch hose.

(i) Fire hose shall be 50 feet in length except on weather decks the hose shall be increased in length if necessary to enable a single length to be goose-necked over each side of the vessel. If two fire mains are installed on the weather decks, the length of hose shall be such that it may be goose-necked over the side from the nearest fire main.

(j) Fire hose when part of the fire equipment shall not be used for any other purpose than fire extinguishing, fire drills, and testing.

(k) Fire hose shall be connected to outlets at all times. However, in heavy weather on open decks where no protection is afforded the hose may be removed temporarily from the hydrant and stowed in an accessible location nearby. While in port, fire hose in way of cargo area shall be kept ready for immediate use. The fire hose may be temporarily removed when it will interfere with the handling of cargo.

(l) All lined and unlined hose installed after January 1, 1961, shall be of fire hose quality, in conformance with Underwriters' Laboratories, Inc., Standard 18 or 19, or Federal Specification JJ-H-571 or ZZ-H-451a. Hose which bears the label of Underwriters' Laboratories, Inc., will be accepted as conforming to this requirement.

(m) Coupling shall conform to the requirements of paragraph (h) of this section.

(n) All fire hose, including those in the engine and boiler spaces, shall be fitted with approved combination nozzles, each having a solid stream orifice of not less than ⅝-inch diameter for

the 2½-inch size and not less than ⅝-inch diameter for the 1½-inch size. The nozzle shall be capable of producing a solid stream or a high velocity spray and of being shut off.

(o) There shall be approved low velocity spray applicators conveniently located for use as required by Table 34.10-10(o). Each shall have the proper connection for mating its adjacent combination nozzle.

TABLE 34.10-10(o)—LOW VELOCITY SPRAY APPLICATORS

Location	Number	Length
Living spaces.....	1	4 or 6 feet.
Weather decks.....	4	10 or 12 feet.
Machinery spaces.....	2	4 or 6 feet.

§ 34.10-15 Piping—T/ALL.

(a) All piping, valves and fittings shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) An adequate number of valves shall be installed to isolate damaged sections of piping.

(c) All distribution valves shall be marked as required by § 35.40-10 of this subchapter.

(d) Tankships of 1,000 gross tons and over on an international voyage shall be provided with at least one international shore connection. Facilities shall be available enabling such a connection to be used on either side of the vessel. The international shore connection shall be in accordance with specification Subpart 162.034 of Subchapter Q (Specifications) of this chapter.

(e) For tankships on an international voyage, the diameter of the fire main shall be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously. This requirement is in addition to § 34.10-5(b). The discharge of this quantity of water through hoses and nozzles at a sufficient number of adjacent hydrants shall be at a minimum Pitot tube pressure of approximately 50 pounds per square inch.

§ 34.10-90 Installations contracted for prior to May 26, 1965—T/ALL.

(a) Installations contracted for prior to January 1, 1962, shall meet the following requirements:

(1) Existing arrangements, materials and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) Except as further modified by this paragraph, the details of the systems shall be in general agreement with §§ 34.10-5 through 34.10-15 insofar as is reasonable and practicable.

(3) Tankships of less than 500 gross tons shall be equipped with an efficient hand pump capable of delivering 50 gallons per minute or a power-driven pump of equivalent capacity. However, on

tankships of 20 gross tons or under where it is impracticable to install a hand or power-operated fire pump, or on tankships with only one man in the crew, at least one additional B-II fire extinguisher may be accepted in lieu of a fire pump.

(4) Tankships of 500 gross tons and over but not over 1,000 gross tons shall be provided with one independently power-driven pump.

(5) Tankships of over 1,000 gross tons shall be provided with two independently power-driven pumps.

(6) On tankships of 500 gross tons and over, the capacity of the combined fire pump installation shall be one-fifth gallon per minute per gross ton of the ship. The maximum total fire pump capacity required for any tankship shall be 800 gallons per minute.

(7) Fire pumps on tankships of 500 gross tons and over shall be capable of delivering two powerful jets of water simultaneously from the highest outlets on the fire main at a Pitot tube pressure of approximately 50 pounds per square inch through nozzles, each having an orifice of not less than 3/8-inch diameter where the internal diameter of the hose exceeds 1 1/2 inches, and not less than 1/2-inch diameter where the internal diameter of the hose does not exceed 1 1/2 inches.

(8) On oil-burning tankships, provided with two fire pumps, where the engine and fire rooms are not entirely separated by iron or steel bulkheads, or if fuel can drain from fireroom bilges into the engine room, one of the fire pumps shall be located in an accessible space separate from the machinery compartment. On all tankships contracted for on or after November 19, 1952, the requirements of paragraph (f) of § 34.10-5 shall be met.

(9) Fire hydrant outlets shall have a minimum diameter of 1 1/2 inches.

(10) On all tankships of 1,000 gross tons and over contracted for on or after July 1, 1951, but prior to January 1, 1962, the nozzles used on at least 2 hose lines in the boiler and machinery spaces shall be approved combination nozzles. In addition, an approved applicator equipped with a low velocity water spray tip, which is capable of being attached directly to the nozzle or the hose, shall be provided for each nozzle. Unless a self-cleaning strainer is contained within the nozzle itself and within the applicator where the applicator is attached directly to the hose, there shall be a self-cleaning strainer attached to the fire hydrant either directly or by means of a short length of hose, except where high and low velocity spray heads have large orifice openings.

(11) Fire hose lines in boiler and machinery spaces of vessels of 1,000 gross tons and over, contracted for prior to July 1, 1951, shall be provided with at least 2 suitable nozzles of an approved type which are capable of effectively extinguishing oil fires. Approved combination nozzles together with the applicator and low velocity spray head, will be acceptable for this purpose. The

self-cleaning strainer may be fitted, but will not be required.

(12) At least 25 percent of the hydrants, exclusive of those in the boiler and machinery spaces, shall be fitted with approved combination nozzles, applicators with low velocity spray heads, and self-cleaning strainers as described in subparagraph (10) of this paragraph. Such nozzles shall be strategically located throughout the tankship.

(13) Where approved combination nozzles are used with fire lines other than required in subparagraphs (10) through (12) of this paragraph, the applicators, low velocity spray heads, and self-cleaning strainers may be fitted, but will not be required.

(14) Vessels contracted for on or after July 1, 1954, shall meet the requirements of § 34.10-10 (h).

(b) Installations contracted for on or after January 1, 1962, but prior to May 26, 1965, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory as long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 34.10-5 through 34.10-15 insofar as is reasonable and practicable.

Subpart 34.13—Steam Smothering System, Details

§ 34.13-1 Application—T/ALL.

(a) In accordance with § 34.05-5, steam smothering systems are not permitted on vessels contracted for on or after January 1, 1962, except as provided for under § 34.05-5 (a) (2).

(b) Where a steam smothering system is already installed on a vessel contracted for prior to that date, the provisions of this subpart shall apply.

(c) This does not preclude the introduction of steam into such confined spaces as boiler casings or into tanks for steaming out purposes. Such installations are not to be considered as part of any required fire extinguishing system.

§ 34.13-90 Installations contracted for prior to January 1, 1962—T/ALL.

(a) Installations contracted for prior to January 1, 1962, shall meet the following requirements:

(1) Existing arrangements, materials and facilities previously approved will be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original installation.

(2) Steam shall be available from the main or auxiliary boilers, or from a shore source. The capacity of the steam supply shall be at least equal to one pound of steam per hour for each 12

cubic feet of the largest cargo compartment in the case of installations contracted for on or after November 19, 1952, and one pound of steam per hour for each 50 cubic feet of the largest cargo compartment in the case of installations contracted for prior to November 19, 1952.

(3) Where reasonable and practicable, the steam pressure shall be at least 100 p.s.i.

(4) The piping system shall meet the general requirements of this subparagraph insofar as is reasonable and practicable.

(i) All piping, valves, and fittings shall meet the applicable requirements of subchapter F (Marine Engineering) of this chapter. All valves and manifolds shall be marked as required by § 35.40-10.

(ii) The supply may be taken from any steam line having adequate capacity.

(iii) The distribution line to each compartment shall be fitted with a shut-off valve.

(iv) Provisions shall be made for draining the manifold and distribution lines to prevent them from freezing.

(v) The minimum size and number of branches to the various spaces shall be as given in Table 34.13-90(a)(4)(v). The distribution piping from the manifold to the branch lines shall have an area approximately equal to the combined areas of the branch lines served.

TABLE 34.13-90(a)(4)(v)

Volume of space in cubic feet		Number of branches to space	Pipe size of each branch, inches
Over—	Not over—		
-----	500	1	3/4
500	5,000	1	1
5,000	15,000	1	1 1/4
15,000	and over	1	1 1/2

(vi) The steam supply line to any distribution manifold shall be of sufficient size to supply all the branch lines to the largest compartment.

(vii) All controls and valves for the operation of the system shall be outside the space protected and shall not be located in any space that might be cut off or made inaccessible in the event of fire in any places protected.

(5) For the purpose of this paragraph, the term "largest cargo compartment" shall be considered as the cargo space, either liquid or dry, having the greatest volumetric measurement. In the case of liquid cargo tanks, the gross volume of the largest tank and all adjoining tanks shall be used for installations contracted for on or after November 19, 1952; for installations contracted for prior to November 19, 1952, the gross volume of the individual tanks shall be used. In the case of dry-cargo compartments, the gross volume shall be taken between adjacent watertight or firescreen bulkheads, and from tank top or lowest deck to the deckhead of the uppermost deck on which cargo may be carried, and if a trunk extends beyond such deckhead, the volume of the trunk shall be included.

(6) The valves to the tanks shall be left open at all times so that, in case of fire, it will be necessary only to open the master valve to insure a flow of steam into each tank, after which, the valves to the tanks which are not on fire may be closed; however, where the opening of such branch lines may cause contamination of cargo or cause the passage of gases or vapors between tanks or compartments, they may be kept closed.

(7) Piping for dry-cargo spaces, pump rooms, paint and lamp lockers, and similar spaces shall be run independent of the extinguishing system for the bulk cargo tanks. If this should be impracticable, valves shall be installed between the main bulk tank extinguishing system and other compartments served, such valves to be marked: "This valve to be kept closed except in case of fire."

(8) The master valve control shall be located above the uppermost complete deck having permanent means of closing all openings in the weather portions of the deck.

(9) Control valves for pumproom extinguishment systems shall be located adjacent to the pumproom exit.

(10) In pumprooms the outlets shall terminate just above the floor plates.

Subpart 34.15—Carbon Dioxide Extinguishing Systems, Details

§ 34.15-1 Application—T/ALL.

(a) Where a carbon dioxide extinguishing system is installed, the provisions of this subpart, with the exception of § 34.15-90, shall apply to all installations contracted for on or after January 1, 1962. Installations contracted for prior to January 1, 1962, shall meet the requirements of § 34.15-90.

(b) The requirements of this subpart are based on a "high pressure system," i.e., one in which the carbon dioxide is stored in liquid form at atmospheric temperature. Details for "low pressure systems," i.e., those in which the carbon dioxide is stored in liquid form at a continuously controlled low temperature, may be specifically approved by the Commandant where it is demonstrated that a comparable degree of safety and fire extinguishing ability is achieved.

§ 34.15-5 Quantity, pipe sizes, and discharge rates—T/ALL.

(a) *General.* (1) The amount of carbon dioxide required for each space shall be as determined by paragraphs (b) through (e) of this section.

(b) *Total available supply.* (1) A separate supply of carbon dioxide need not be provided for each space protected. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(c) *Dry cargo spaces.* (1) The number of pounds of carbon dioxide required for each space shall be equal to the gross volume of the space in cubic feet divided by 30.

(2) Although separate piping shall be led to each cargo hold and 'tween deck, for the purpose of determining the amount of carbon dioxide required, a cargo compartment will be considered as

the space between watertight or fire-screen bulkheads and from the tank top or lowest deck to the deck head of the uppermost space on which cargo may be carried. If a trunk extends beyond such deck, the trunk volume shall be included. Tonnage openings shall be considered as sealed for this purpose.

(3) Branch lines to the various cargo holds and 'tween decks shall not be less than ¾-inch standard pipe size.

(4) No specific discharge rate need be applied to such systems.

(d) *Enclosed ventilation systems for rotating electrical propulsion equipment.*

(1) The number of pounds of carbon dioxide required for the initial charge shall be equal to the gross volume of the system divided by 10 for systems having a volume of less than 2,000 cubic feet, and divided by 12 for systems having a volume of 2,000 cubic feet or more.

(2) The piping for the initial charge shall be in accordance with Table 34.15-5(e) (4), and the discharge of the required amount shall be completed within 2 minutes.

(3) In addition to the above there shall be sufficient carbon dioxide available to permit delayed discharges of such quantity as to maintain at least a 25 percent concentration until the equipment can be stopped. If the initial discharge is such as to achieve this concentration until the equipment is stopped, no delayed discharge need be provided.

(4) The piping for the delayed discharge shall not be less than ½-inch standard pipe, and no specific discharge rate need be applied to such systems. On small systems, this pipe may be incorporated with the initial discharge piping.

(e) *Machinery spaces, pumprooms, paint lockers, and similar spaces.* (1) Except as provided in subparagraph (4) of this paragraph, the number of pounds of carbon dioxide required for each space shall be equal to the gross volume of the space divided by the appropriate factor noted in Table 34.15-5(e) (1). If fuel can drain from the compartment being protected to an adjacent compartment, or if the compartments are not entirely separate, the requirements for both compartments shall be used to determine the amount of carbon dioxide to be provided. The carbon dioxide shall be arranged to discharge into both such compartments simultaneously.

TABLE 34.15-5(e)(1)

Gross volume of compartment, cubic feet		Factor
Over—	Not Over—	
-----	500	15
500	1,600	16
1,600	4,500	18
4,500	50,000	20
50,000	-----	22

(2) For the purpose of the above requirement of this paragraph, the volume of a machinery space shall be taken as exclusive of the normal machinery casing unless the boiler, internal combustion propelling machinery, or fuel oil installa-

tions subject to the discharge pressure of the fuel oil service pump extend into such space, in which case the volume shall be taken to the top of the casing or the next material reduction in casing area whichever is lower. The terms "normal machinery casing" and "material reduction in casing area" shall be defined as follows:

(i) By "normal machinery casing" shall be meant a casing the area of which is not more than 40 percent of the maximum area of the machinery space.

(ii) By "material reduction in casing area" shall be meant a reduction to at least 40 percent of the casing area.

(3) For the purpose of the above requirements of this paragraph, the volume of a pumproom shall include the pumproom and all associated trunks up to the deck at which access from the weather is provided.

(4) For tankships on an international voyage contracted for on or after May 26, 1965, the amount of carbon dioxide required for a space containing propulsion boilers or internal combustion propulsion machinery shall be as given by subparagraphs (1) and (2) of this paragraph or by dividing the entire volume, including the casing, by a factor of 25, whichever is the larger.

(5) Branch lines in the various spaces shall be as noted in Table 34.15-5(e) (5).

TABLE 34.15-5(e)(5)

Maximum quantity of carbon dioxide required, pounds	Minimum pipe size, inches	Maximum quantity of carbon dioxide required, pounds	Minimum pipe size, inches
100	½	2,500	2½
225	¾	4,450	3
300	1	7,100	3½
600	1¼	10,450	4
1,000	1½	15,000	4½
2,450	2	-----	-----

(6) Distribution piping within the space shall be proportioned from the supply line to give proper distribution to the outlets without throttling.

(7) The number, type and location of discharge outlets shall be such as to give a uniform distribution throughout the space.

(8) The total area of all discharge outlets shall not exceed 85 percent nor be less than 35 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square inches shall be determined by multiplying the factor 0.0022 by the number of pounds of carbon dioxide required, except that in no case shall this outlet area be less than 0.110 square inches.

(9) The discharge of at least 85 percent of the required amount of carbon dioxide shall be complete within 2 minutes.

§ 34.15-10 Controls—T/ALL.

(a) Except as noted in § 34.15-20(b), all controls and valves for the operation of the system shall be outside the space protected, and shall not be located in any space that might be cut off or made inaccessible in the event of fire in any of the spaces protected.

(b) If the same cylinders are used to protect more than one space, a manifold with normally closed stop valves shall be used to direct the carbon dioxide into the proper space. If cylinders are used to protect only one space, a normally closed stop valve shall be installed between the cylinders and the space except for systems of the type indicated in § 34.15-5(e) which contain not more than 300 pounds of carbon dioxide.

(c) Distribution piping to the dry cargo spaces shall be controlled from not more than two stations. One of the stations controlling the system for the main machinery space shall be located as convenient as practicable to one of the main escapes from the space. All control stations and the individual valves and controls shall be marked as required by § 35.40-10 of the subchapter.

(d) Systems of the type indicated in § 34.15-5(e) shall be actuated at each station by one control operating the valve to the space and a separate control releasing at least the required amount of carbon dioxide. These two controls shall be located in a box or other enclosure clearly identified for the particular space. Systems installed without a stop valve shall be operated by one control releasing at least the required amount of carbon dioxide.

(e) Where provisions are made for the simultaneous release of a given amount of carbon dioxide by operation of a remote control, provisions shall also be made for manual control at the cylinders. Where gas pressure from pilot cylinders is used as a means for releasing the remaining cylinders, not less than two pilot cylinders shall be used for systems consisting of more than two cylinders. Each of the pilot cylinders shall be capable of manual control at the cylinder, but the remaining cylinders need not be capable of individual manual control.

(f) Systems of the type indicated in § 34.15-5(e), which are of more than 300 pounds of carbon dioxide shall be fitted with an approved delayed discharge so arranged that the alarm will be sounded for at least 20 seconds before the carbon dioxide is released into the space. Such systems of not more than 300 pounds of carbon dioxide shall also have a similar delayed discharge, except for spaces which have a suitable horizontal escape.

(g) All distribution valves and controls shall be of an approved type. All controls shall be suitably protected.

(h) Complete but simple instructions for the operation of the system shall be located in a conspicuous place at or near the releasing control device.

(i) If the space or enclosure containing the carbon dioxide supply or controls is to be locked, a key to the space or enclosure shall be in a break-glass-type box conspicuously located adjacent to the opening.

§ 34.15-15 Piping—T/ALL.

(a) The piping, valves, and fittings shall have a bursting pressure of not less than 6,000 pounds p.s.i.

(b) All piping, in nominal sizes not over ¾-inch shall be at least Schedule 40 (standard weight) and in nominal

sizes over ¾-inch, shall be at least Schedule 80 (extra heavy).

(c) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved otherwise by the Commandant.

(d) A pressure relief valve or equivalent set to relieve between 2,400 and 2,800 pounds p.s.i. shall be installed in the distributing manifold or such other location as to protect the piping in the event that all branch line shutoff valves are closed.

(e) All deadend lines shall extend at least 2 inches beyond the last orifice and shall be closed with cap or plug.

(f) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(g) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture. Drains and dirt traps shall be located in accessible locations where possible.

(h) Piping shall be used for no other purpose except that it may be incorporated with the fire-detecting system.

(i) Piping passing through living quarters shall not be fitted with drains or other openings within such spaces.

(j) Installation test requirements are:
(1) Upon completion of the piping installation, and before the cylinders are connected, a pressure test shall be applied as set forth in this paragraph. Only carbon dioxide or other inert gas shall be used for this test.

(2) The piping from the cylinders to the stop valves in the manifold shall be subjected to a pressure of 1,000 pounds p.s.i. with no additional gas being introduced to the system, it shall be demonstrated that the leakage of the system is such as not to permit a pressure drop of more than 150 pounds per square inch per minute for 2-minute period.

(3) The individual branch lines to the various spaces protected shall be subjected to a test similar to that described in the preceding sub-paragraph with the exception that the pressure used shall be 600 pounds p.s.i. in lieu of 1,000 pounds p.s.i. For the purpose of this test, the distribution piping shall be capped within the space protected at the first joint ahead of the nozzles.

(4) In lieu of the tests prescribed in the preceding subparagraphs in this paragraph, small independent systems protecting spaces such as emergency generator rooms, lamp lockers, etc., may be tested by blowing out the piping with the air at a pressure of at least 100 pounds p.s.i.

§ 34.15-20 Carbon dioxide storage—T/ALL.

(a) Except as provided in paragraph (b) of this section, the cylinders shall be located outside the spaces protected, and shall not be located in any space that might be cut off or made inaccessible in the event of a fire in any of the spaces protected.

(b) Systems of the type indicated in § 34.15-5 (e), consisting of not more than 300 pounds of carbon dioxide, may have the cylinders located within the space

protected. If the cylinder stowage is within the space protected, the system shall be arranged in an approved manner to be automatically operated by a heat actuator within the space in addition to the regular remote and local controls.

(c) The space containing the cylinders shall be properly ventilated and designed to preclude an anticipated ambient temperature in excess of 130 degrees F.

(d) Cylinders shall be securely fastened and supported, and where necessary, protected against injury.

(e) Cylinders shall be so mounted as to be readily accessible and capable of easy removal for recharging and inspection. Provisions shall be available for weighing the cylinders.

(f) Where subject to moisture, cylinders shall be so installed as to provide a space of at least 2 inches between the flooring and the bottom of the cylinders.

(g) Cylinders shall be mounted in an upright position or inclined not more than 30 degrees from the vertical. However, cylinders which are fitted with flexible or bent siphon tubes may be inclined not more than 80 degrees from the vertical.

(h) Where check valves are not fitted on each independent cylinder discharge, plugs or caps shall be provided for closing outlets when cylinders are removed for inspection or refilling.

(i) All cylinders used for storing carbon dioxide shall be fabricated, tested, and marked in accordance with the regulations of the Interstate Commerce Commission as noted in § 147.04-1 of Subchapter N (Dangerous Cargoes) of this chapter.

§ 34.15-25 Discharge outlets—T/ALL.

(a) Discharge outlets shall be of an approved type.

§ 34.15-30 Alarms—T/ALL.

(a) Spaces required to have a delayed discharge by § 34.15-10(f) which are protected by a carbon dioxide extinguishing system and are normally accessible to persons on board while the vessel is being navigated, other than paint and lamp lockers and similar small spaces, shall be fitted with an approved audible alarm in such spaces which will be automatically sounded before the carbon dioxide is admitted to the space. The alarm shall be conspicuously and centrally located and shall be marked as required by § 35.40-7 of this subchapter. Such alarms shall be so arranged as to sound during the 20-second delay period prior to the discharge of carbon dioxide into the space, and the alarm shall depend on no source of power other than the carbon dioxide.

§ 34.15-35 Enclosure openings—T/ALL.

(a) Except for cargo spaces, the operation of the carbon dioxide system shall automatically shut down any mechanical ventilation to that space. This will not be required where the carbon dioxide system is a secondary system in addition to another approved primary system protecting the space.

(b) Where natural ventilation is provided for spaces protected by a carbon

dioxide extinguishing system, provisions shall be made for easily and effectively closing off the ventilation.

(c) Means shall be provided for closing all other openings to the space protected from outside such space. In this respect, relatively tight doors, shutters, or dampers shall be provided for openings in the lower portion of the space. The construction shall be such that openings in the upper portion of the space can be closed off either by permanently installed means or by the use of canvas or other material which is normally carried by the vessel.

§ 34.15-40 Pressure relief—T/ALL.

(a) Where necessary, relatively tight compartments such as refrigeration spaces, paint lockers, etc., shall be provided with suitable means for relieving excessive pressure accumulating within the compartment when the carbon dioxide is injected.

§ 34.15-90 Installations contracted for prior to January 1, 1962—T/ALL.

(a) Installations contracted for prior to November 19, 1952, shall meet the requirements of this paragraph.

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 34.15-5 through 34.15-40 insofar as is reasonable and practicable, with the exception of § 34.15-5 (e)(1) through (3) covering spaces other than cargo spaces, which systems may be installed in accordance with subparagraphs (4) through (7) of this paragraph.

(3) For cargo tanks at least one pound of carbon dioxide shall be available for each 30 cubic feet of the largest cargo tank. The discharge of the required amount of carbon dioxide shall be complete within 5 minutes.

(4) In boilerrooms, the bilges shall be protected by a system discharging principally below the floor plates. Perforated pipe may be used in lieu of discharge nozzles for such systems. The number of pounds of carbon dioxide shall be equal to the gross volume of the boiler room taken to the top of the boilers divided by 36. In the event of an elevated boilerroom which drains to the machinery space, the system shall be installed in the engineroom bilge and the gross volume shall be taken to the flat on which the boilers are installed.

(5) In machinery spaces where main propulsion internal combustion machinery is installed, the number of pounds of carbon dioxide required shall be equal to the gross volume of the space taken to the underside of the deck forming the hatch opening divided by 22.

(6) In miscellaneous spaces other than cargo or main machinery spaces the number of pounds of carbon dioxide re-

quired shall be equal to the gross volume of the space divided by 22.

(7) Branch lines to the various spaces other than cargo and similar spaces shall be noted in Table 34.15-90(a) (7). This table is based on cylinders having discharge outlets and siphon tubes of 3/8-inch diameter.

TABLE 34.15-90(a)(7)

Number of cylinders		Nominal pipe size, inches
Over—	Not over—	
2	2	1/2-standard.
4	4	3/4-standard.
6	6	1-extra heavy.
12	12	1 1/4-extra heavy.
16	16	1 1/2-extra heavy.
27	27	2-extra heavy.
39	39	2 1/2-extra heavy.
60	60	3-extra heavy.
80	104	4-extra heavy.
104	165	5-extra heavy.

(b) Installations contracted for on or after November 19, 1952, but prior to January 1, 1962, shall meet the requirements of this paragraph.

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 34.15-5 through 34.15-40 insofar as is reasonable and practicable with the exception that delayed discharges need not be provided for installations made prior to July 1, 1957.

Subpart 34.17—Fixed Foam Extinguishing Systems, Details

§ 34.17-1 Application—T/ALL.

(a) Where a fixed foam extinguishing system is installed, the provisions of this Subpart with the exception of § 34.17-90, shall apply to all installations contracted for on or after January 1, 1962.

(b) Installations contracted for prior to January 1, 1962, shall meet the requirements of § 34.17-90.

§ 34.17-5 Quantity of foam required—T/ALL.

(a) *Area protected.* (1) For machinery spaces and pumprooms, the system shall be so designed and arranged as to spread a blanket of foam over the entire tank top or bilge of the space protected. The arrangement of piping shall be such as to give a relatively uniform distribution over the entire area protected.

(2) Where an installation is made to protect an oil-fired boiler installation on a flat which is open to or can drain to the lower engineroom or other space, both the flat and the lower space shall be protected simultaneously. The flat shall be fitted with suitable coamings on all openings other than deck drains

to properly restrain the oil and foam at that level. Other installations of a similar nature will be considered in a like manner.

(b) *Rate of application.* (1) The rate of discharge to foam outlets protecting the hazard shall be at least as set forth in this paragraph.

(2) For chemical foam systems with stored "A" and "B" solutions, a total of at least 1.6 gallons per minute of the two solutions shall be discharged for each 10 square feet of area protected.

(3) For other types of foam systems, the water rate to the dry-powder generators or air foam production equipment shall be at least 1.6 gallons per minute for each 10 square feet of area protected.

(c) *Supply of foam-producing material.* (1) There shall be provided a quantity of foam-producing material sufficient to operate the equipment at the minimum discharge rate specified in paragraph (b) of this section for a period of at least 3 minutes.

(d) *Separate supply of foam-producing material.* (1) A separate supply of foam-producing material need not be provided for each space protected. This includes a deck foam system. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(e) *Water supply for required pumps.* (1) The water supply shall be from outside and completely independent of the space protected.

§ 34.17-10 Controls—T/ALL.

(a) The foam agent, its container, measuring devices, and other items peculiar to the system shall be of an approved type.

(b) The foam-producing material container and all controls and valves for the operation of the system shall be outside the space protected and shall not be located in such space as might be cut off or made inaccessible in the event of fire in any of the spaces protected. The control space shall be as convenient as practicable to one of the main escapes from the spaces protected, and shall be marked as required by § 35.40-10 of this subchapter. Where pumps are required, it shall not be necessary that they be started from the control space.

(c) Complete, but simple instructions for the operation of the system shall be located in a conspicuous place at or near the controls.

(d) The valves to the various spaces served shall be marked as required by § 35.40-10 of this subchapter.

§ 34.17-15 Piping—T/ALL.

(a) All piping, valves, and fittings shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved otherwise by the Commandant.

(c) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(d) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture.

(e) Piping shall not be used for any other purpose than firefighting, drills and testing.

§ 34.17-20 Discharge outlets—T/ALL.

(a) Discharge outlets shall be of an approved type.

§ 34.17-25 Additional protection required—T/ALL.

(a) In order that any residual fires above the floor plates may be extinguished when a foam system is installed for the protection of machinery spaces, at least 2 fire hydrants, in addition to those required for the machinery space by Subpart 34.10, shall be installed outside of the machinery space entrance. Such hydrants shall be fitted with sufficient hose so that any part of the machinery space may be reached with at least 2 streams of water, and each hose shall be equipped with an approved combination nozzle and applicator.

§ 34.17-90 Installations contracted for prior to January 1, 1962—T/ALL.

(a) Installations contracted for prior to January 1, 1962, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 34.17-5 through 34.17-20, insofar as is reasonable and practicable. Installations contracted for prior to November 19, 1952, need not comply with paragraph (a) (2) of § 34.17-5 and § 34.17-25. A 6-inch blanket of foam in 3 minutes for machinery spaces and pumprooms will be considered as meeting the requirements of § 34.17-5.

(3) Where a system is installed to protect a tank, it shall be so designed and arranged as to spread a blanket of foam over the entire liquid surface of the tank within the range of usual trim. The arrangement of piping shall be such as to give a relatively uniform distribution over the entire area protected.

(4) For tanks, the rate of discharge to foam outlets protecting the hazard shall be as set forth in § 34.17-5(b), except that the value of 1 gallon per minute shall be substituted in both cases for the value of 1.6 gallons per minute. The quantity of foam provided shall be sufficient to operate the equipment for 5 minutes.

(5) On installations installed prior to November 19, 1952, a semiportable foam generator using a dry-chemical mixture

or mechanical foam in conjunction with the fire lines may be substituted for the fixed system subject to the following conditions:

(i) There shall be at least one fire pump of suitable capacity available which can be operated and controlled from outside the space protected.

(ii) Stop valves shall be installed in the line so that if any portion of the fire main is ruptured, the foam generator may still be operated. Connections for at least two fire hoses shall be provided between the pump and the stop valve.

(iii) If the foam system is of the portable or semiportable type, the apparatus and chemicals shall be stored in a readily accessible place protected from the weather.

Subpart 34.20—Deck Foam System, Details

§ 34.20-1 Application—T/ALL.

(a) Where a deck foam system is installed, the provisions of this subpart, with the exception of § 34.20-90, shall apply to all installations contracted for on or after January 1, 1962.

(b) Installations contracted for prior to January 1, 1962, shall meet the requirements of § 34.20-90.

§ 34.20-3 Cargo area definition—T/ALL.

(a) For the purpose of this subpart, the term "cargo area" is defined as the maximum beam of the vessel times the total longitudinal extent of the cargo tank spaces.

§ 34.20-5 Quantity of foam required—T/ALL.

(a) *Area protected.* Systems of this type are designed to give primary protection to the spaces over the cargo tanks.

(b) *Rate of application.* The water rate of the foam production equipment shall be at least 0.016 gallons per minute for each square foot of cargo area.

(c) *Supply of foam-producing material.* There shall be provided a supply of foam-producing material sufficient to operate the equipment at the required rate of application for a period of at least 15 minutes without recharging. If this equipment operates in excess of the required rate, the supply of foam-producing material shall be increased accordingly.

(d) *Separate supply of foam-producing material.* Where the same foam-producing material may be used for this system as well as a fixed foam system, separate supplies need not be provided for each space protected. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(e) *Water supply.* Suitable pumps shall be provided capable of producing the required water rate. The fire pumps required by Subpart 34.10 may be used for this purpose; however, the operation

of the deck foam system shall not interfere with the simultaneous use of the fire main system.

§ 34.20-10 Controls—T/ALL.

(a) The foam agent, its container, measuring devices, and other items peculiar to this system shall be of an approved type.

(b) The foam agent container and the main controls for operating the system shall be located in a protected space not likely to be made inaccessible in the event of a fire in any portion of the cargo area.

(c) Complete, but simple instructions for the operation of the system shall be located in a conspicuous place at or near the controls.

(d) All valves shall be marked as required by § 35.40-17.

§ 34.20-15 Piping—T/ALL.

(a) All piping, valves, and fittings shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved otherwise by the Commandant.

(c) Piping and outlet arrangements shall be such as to permit the required rate of application to any portion of the open deck of the cargo area using the mounted and/or hand-held appliances provided. For enclosed spaces application of at least 1.6 gallons per minute water rate for each 10 square feet of the enclosed area for 5 minutes will be acceptable. For the purpose of this paragraph, it shall be assumed that all piping is damaged in way of the fire and an adequate number of valves shall be fitted for isolating damaged sections of piping.

(d) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(e) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture.

(f) Piping shall not be used for any other purpose than firefighting, drills, and testing.

§ 34.20-20 Discharge outlets—T/ALL.

(a) Discharge outlets shall be of an approved type.

(b) Mounted and/or hand held foam appliances shall be connected to the required outlets at all times except on open decks, where the location of the outlets is such that no protection is afforded for the equipment in heavy weather.

§ 34.20-90 Installations contracted for prior to January 1, 1962—T/ALL.

(a) Installations contracted for prior to January 1, 1962, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall

be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) For installations contracted for prior to November 19, 1952, see § 34.17-90(a) (5).

(3) Installations contracted for on or after November 4, 1957, but prior to January 1, 1962, shall meet the requirements of §§ 34.20-5 through 34.20-20 insofar as is reasonable and practicable.

Subpart 34.25—Water Spray Extinguishing Systems, Details

§ 34.25-1 Application—T/ALL.

(a) Where a water spray extinguishing system is installed, the provisions of this subpart, with the exception of § 34.25-90, shall apply to all installations contracted for on or after January 1, 1964. Installations contracted for prior to January 1, 1964, shall meet the requirements of § 34.25-90.

§ 34.25-5 Capacity and arrangement—T/ALL.

(a) The capacity and arrangement shall be such as to effectively blanket the entire area of the space protected. The rate of discharge and the arrangement of piping and spray nozzles shall be such as to give a uniform distribution over the entire area protected.

(b) The spacing of the spray nozzles shall be on the basis of the spray pattern provided by the lowest pressure at any spray nozzle in the system. In no instance shall a system be designed for any spray nozzle to be operated at a pressure less than that for which it was approved. The maximum permissible height of the spray nozzle above the protected area shall not exceed that specified in its approval. Whenever there are obstructions to coverage by the spray patterns, additional spray nozzles shall be installed to provide full coverage.

(c) The water supply shall be from outside the space protected and shall in no way be dependent upon power from the space protected. The pump supplying water for the system shall either be reserved exclusively for the system or it may be one of the fire pumps, provided the capacity of the fire pump as set forth in Subpart 34.10 is increased by the required capacity of the system, so that this system may be operated simultaneously with the fire main system.

§ 34.25-10 Controls—T/ALL.

(a) There shall be one control valve for the operation of the system located in an accessible position outside the space protected. The control shall be located as convenient as practicable to one of the main escapes from the space protected, and shall be marked as re-

quired by § 35.40-18 of this subchapter. It shall not be necessary to start the pumps from the control space.

(b) Complete, but simple instructions for the operation of the system shall be located in a conspicuous place at or near the controls.

(c) The valve to the space protected shall be marked as required by § 35.40-18 of this subchapter.

§ 34.25-15 Piping—T/ALL.

(a) All piping, valves and fittings shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) Distribution piping shall be of materials resistant to corrosion, except that steel or iron pipe may be used if inside corrosion resistant coatings which will not flake off and clog the nozzles are applied. Materials readily rendered ineffective by heat of a fire shall not be used. The piping shall be subject to approval for each installation.

(c) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(d) Drains, strainers, and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture.

(e) Threaded joints shall be metal to metal, with no thread compound used.

(f) Distribution piping shall be used for no other purpose.

(g) All piping shall be thoroughly cleaned and flushed before installation of the water spray nozzles.

§ 34.25-20 Spray nozzles—T/ALL.

(a) Spray nozzles shall be of an approved type.

§ 34.25-90 Installations contracted for prior to January 1, 1964—T/ALL.

(a) Installations contracted for prior to January 1, 1964, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 34.25-5 through 34.25-20 insofar as is reasonable and practicable.

Subpart 34.50—Portable and Semiportable Extinguishers

§ 34.50-1 Application—TB/ALL.

(a) The provisions of this subpart, with the exception of § 34.50-90, shall apply to all vessels contracted for on or after January 1, 1962.

(b) All vessels contracted for prior to January 1, 1962, shall meet the requirements of § 34.50-90.

§ 34.50-5 Classification—TB/ALL.

(a) Portable and semiportable extinguishers shall be classified by a combination letter and number symbol. The letter indicating the type of fire which the unit could be expected to extinguish, and the number indicating the relative size of the unit.

(b) The types of fire will be designated as follows:

(1) "A" for fires in ordinary combustible materials such as mattresses, piles of wood, shavings, canvas, etc., where the quenching and cooling effects of quantities of water, or solutions containing large percentages of water, are of first importance.

(2) "B" for fires in combustible or flammable liquids such as gasoline, lubricating oil, diesel oil, greases, etc., where a blanketing or smothering effect is essential.

(3) "C" for fires in electrical equipment where the use of non-conducting extinguishing agent is of first importance so that electrical shock is not experienced by the firefighter.

(c) The number designations for size will start with "1" for the smallest to "V" for the largest. Extinguishers which have a gross weight of 55 pounds or less when fully charged are considered portable. Extinguishers which have a gross weight of more than 55 pounds when fully charged are considered semiportable and shall be fitted with suitable hose and nozzle or other practicable means so that all portions of the space concerned may be reached. Examples of size graduations for some of the typical portable and semiportable extinguishers are set forth in Table 34.50-5(c).

TABLE 34.50-5(c)

Classification type (Size)	Soda-acid and water (Gallons)	Foam (Gallons)	Carbon dioxide (Pounds)	Dry chemical (Pounds)
A-II	2½	2¼	—	—
B-I	1½	1½	4	2
B-II	—	2½	15	10
B-III	—	12	35	20
B-IV	—	20	50	30
B-V	—	40	100	50
C-I	—	—	4	2
C-II	—	—	15	10

¹ For outside use, double the amount shall be carried.

§ 34.50-10 Location—TB/ALL.

(a) Approved portable and semiportable extinguishers shall be installed in accordance with Table 34.50-10(a). The location of the equipment shall be such as in the opinion of the Officer in Charge, Marine Inspection, will be most convenient in case of emergency. Where special circumstances exist, not covered by Table 34.50-10(a), the Officer in Charge, Marine Inspection, may require such additional equipment as he deems necessary for the proper protection of the vessel.

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TABLE 34.50-10(a)—PORTABLE AND SEMI-PORTABLE EXTINGUISHERS

Tank ships		Area	Tank barges	
Quantity and location	Classification (see § 34.50-5)		Classification (see § 34.50-5)	Quantity and location
<i>Safety Areas</i>				
1 required.....	C-II.....	Wheelhouse and chartroom area.		None required.
1 required in vicinity of exit.	C-II ¹	Radio room.....		None required.
<i>Accommodation Areas</i>				
1 required in each main passageway on each deck, conveniently located, and so that no room is more than 75 feet from an extinguisher.	A-II or B-II.....	Staterooms, toilet spaces, public spaces, offices, etc., and associated lockers, storerooms, and pantries.	A-II or B-II.....	1 required in vicinity of exit.
<i>Service Areas</i>				
1 required for each 2,500 square feet or fraction thereof, suitable for hazard involved.	B-II or C-II.....	Galleys.....	B-II or C-II.....	1 required, suitable for hazard involved.
1 required for each 2,500 square feet or fraction thereof, suitable for hazard involved.	A-II or B-II.....	Stores areas, including paint and lamp rooms.		None required.
<i>Machinery Area²</i>				
2 required ³	B-II..... and	Spaces containing oil fired boilers, either main or auxiliary, or any fuel oil units subject to the discharge pressure of the fuel oil service pump.	B-II.....	1 required.
1 required.....	B-V ⁴		B-II.....	None required.
1 required for each 1,000 B.H.P., but not less than 2 nor more than 5. ⁵	B-II..... and	Spaces containing internal combustion or gas turbine propulsion machinery.	B-II.....	None required.
1 required ^{6,7}	B-III.....		B-II.....	1 required in vicinity of exit. ⁸
1 required in vicinity of exit. ⁷	B-II.....	Auxiliary spaces containing internal combustion or gas turbine units.	B-II.....	1 required in vicinity of exit. ⁸
1 required in vicinity of exit ⁹	C-II.....	Auxiliary spaces containing emergency generators.		None required.
<i>Cargo Areas</i>				
1 required in lower pumproom.	B-II.....	Pumprooms.....	B-II.....	1 required in vicinity of exit. ¹⁰
None required.....		Cargo tank area.....	B-II..... and B-V.....	2 required. ¹⁰ 1 required. ¹¹

¹ Vessels not on an international voyage may substitute 2 C-I.
² A C-II shall be immediately available to the service generator and main switchboard areas, and further, a C-II shall be conveniently located not more than 50 feet walking distance from any point in all main machinery operating spaces. These extinguishers need not be in addition to other required extinguishers.
³ Vessels of less than 1,000 gross tons require 1.
⁴ Vessels of less than 1,000 gross tons may substitute 1 B-IV.

⁵ Only 1 required for vessels under 65 feet in length.
⁶ If oil burning donkey boiler fitted in space, the B-V previously required for the protection of the boiler may be substituted. Not required where a fixed carbon dioxide system is installed.
⁷ Not required on vessels of less than 300 gross tons if fuel has a flashpoint higher than 110° F.
⁸ Not required on vessels of less than 300 gross tons.
⁹ Not required if fixed system installed.
¹⁰ If no cargo pump on barge, only one B-II required.
¹¹ Manned barges of 100 gross tons and over only.

(b) For additional portable extinguishers as a substitute for sand, see § 34.55-10.

(c) Semiportable extinguishers shall be located in the open so as to be readily seen.

(d) If portable extinguishers are not located in the open or behind glass so that they may be readily seen they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by § 35.40-25 of this subchapter.

(e) Portable extinguishers and their stations shall be numbered in accordance with § 35.40-25 of this subchapter.

(f) Hand portable or semiportable extinguishers which are required on their nameplates to be protected from freezing shall not be located where freezing temperatures may be expected.

§ 34.50-15 Spare charges—TB/ALL.

(a) Spare charges shall be carried on all vessels for at least 50 percent of each size and each variety, i.e. foam, soda-acid, carbon dioxide, etc., of portable extinguisher required by § 34.50-10(a). However, if the unit is of such variety that it cannot be readily recharged by the vessel's personnel, one spare unit of the same classification shall be carried

in lieu of spare charges for all such units of the same size and variety. This section does not apply to unmanned barges.

(b) Spare charges shall be so packaged as to minimize the hazards to personnel while recharging the units.

§ 34.50-90 Vessels contracted for prior to January 1, 1962—TB/ALL.

(a) Vessels contracted for prior to January 1, 1962, shall meet the following requirements:

(1) The provisions of §§ 34.50-5 through 34.50-15 shall be met with the exception that existing installations may be maintained if in the opinion of the Officer in Charge, Marine Inspection, they are in general agreement with the degree of safety prescribed by Table 34.50-10(a). In such cases, minor modifications may be made to the same standard as the original installation: *Provided*, That in no case will a greater departure from the standards of Table 34.50-10(a) be permitted than presently exists.

Subpart 34.55—Sand

§ 34.55-1 Application—TB/ALL.

(a) The provisions of this part shall apply to all vessels having oil fired boilers, either main or auxiliary.

§ 34.55-5 Amount required—TB/ALL.

(a) On vessels of over 1,000 gross tons there shall be in each space containing oil fired boilers a metal receptacle containing not less than 10 cubic feet of sand, sawdust impregnated with soda, or other approved dry materials, together with a scoop or shaker for distributing the same. On vessels of 1,000 gross tons or less, at least 5 cubic feet of such materials shall be similarly carried.

§ 34.55-10 Substitute—TB/ALL.

(a) An additional B-II portable extinguisher may be carried in lieu of the sand required by this part.

Subpart 34.60—Fire Axes

§ 34.60-1 Application—T/ALL.

(a) The provisions of this subpart shall apply to all tankships.

§ 34.60-5 Number required—T/ALL.

(a) All tankships shall carry at least the minimum number of fire axes as set forth in Table 34.60-5(a). Nothing in this paragraph shall be construed as limiting the Officer in Charge, Marine

TABLE 34.60-5(a)

Gross tons		Number of axes
Over—	Not over—	
-----	50	1
50	200	2
200	500	3
500	1,000	4
1,000	-----	5

Inspection, from requiring such additional fire axes as he deems necessary for the proper protection of the tankship.

§ 34.60-10 Location—T/ALL.

(a) Fire axes shall be distributed throughout the spaces so as to be most readily available in the event of emergency.

(b) If fire axes are not located in the open, or behind glass, so that they may readily be seen, they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by § 35.40-15 of this subchapter.

PART 35—OPERATIONS

Subpart 35.01—Special Operating Requirements Sec.

- 35.01-1 Inspection and testing required when making alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions—TB/ALL.
- 35.01-5 Sanitary condition and crew quarters—T/ALL.
- 35.01-10 Shipping papers—TB/ALL.
- 35.01-15 Carriage of persons other than crew—TB/ALL.
- 35.01-20 Pilot ladders—T/OC.
- 35.01-25 Aluminum and/or magnesium sacrificial anode installations—TB/ALL.
- 35.01-30 Reckless or negligent operation prohibited by law—TB/ALL.
- 35.01-35 Repairs and alterations to fire-fighting equipment—TB/ALL.
- 35.01-40 Prevention of oil pollution—TB/ALL.
- 35.01-45 Open hopper type barges—B/ALL.
- 35.01-50 Special operating requirements for tank barges carrying certain dangerous bulk cargoes—B/ALL.
- 35.01-55 Warning signs and information cards for those barges carrying bulk cargoes having dangerous characteristics in addition to flammability or combustibility—B/ALL.
- Subpart 35.03—Work Vests
- 35.03-1 Application—TB/ALL.
- 35.03-5 Approved unicellular plastic foam work vests—TB/ALL.
- 35.03-10 Use—TB/ALL.
- 35.03-15 Shipboard stowage—TB/ALL.
- 35.03-20 Shipboard inspections—TB/ALL.

Subpart 35.05—Officers and Crews

- 35.05-1 Licensed officers and crews of tankships—T/ALL.
- 35.05-5 Master required on tankships—T/ALL.
- 35.05-10 Pilot required on tankships—T/LBR.
- 35.05-15 Watchman for a tank vessel—TB/ALL.
- 35.05-20 Physical condition of crew—TB/ALL.
- 35.05-25 Illness, alcohol, drugs—TB/ALL.

Subpart 35.07—Logbook Entries

- 35.07-1 Application—TB/ALL.
- 35.07-5 Logbooks and records—TB/ALL.
- 35.07-10 Actions required to be logged—TB/ALL.
- 35.07-15 Official log entries—TB/OC.

Subpart 35.10—Fire and Emergency Requirements

- 35.10-1 Station bills, muster lists, and line-throwing appliance drills—T/ALL.
- 35.10-5 Emergency signals; fire and lifeboat drills—T/ALL.
- 35.10-7 Electric power-operated lifeboat winches—T/ALL.
- 35.10-9 Posting placards containing instructions for launching and inflating inflatable liferafts—TB/ALL.

- Sec. 35.10-15 Emergency lighting and power systems—T/ALL.
- 35.10-20 Radio apparatus for lifeboats—T/OC.

Subpart 35.12—Placard of Lifesaving Signals and Breeches Buoy Instructions

- 35.12-1 Application—T/OC/LB.
- 35.12-5 Availability—T/OC/LB.

Subpart 35.15—Casualty or Accident Reports

- 35.15-1 Notice of casualty and voyage records—TB/ALL.
- 35.15-5 Reports by engineers of accidents involving boilers or machinery—T/ALL.
- 35.15-10 Reports when a state of war exists—T/ALL.

Subpart 35.20—Navigation

- 35.20-1 Notice to mariners; aids to navigation—T/OC/LB.
- 35.20-5 Draft of tank ships—T/OC.
- 35.20-10 Steering gear test—T/ALL.
- 35.20-15 Steering orders—TB/ALL.
- 35.20-20 Master's and officer's responsibility—TB/ALL.
- 35.20-25 Unauthorized lights—T/ALL.
- 35.20-30 Flashing the rays of a searchlight or other blinding light—T/ALL.
- 35.20-35 Whistling—T/ALL.

Subpart 35.25—Engine Department

- 35.25-1 Examination of boilers and machinery by engineer—T/ALL.
- 35.25-5 Repairs of boilers and unfired pressure vessels and reports of repairs or accidents by chief engineer—TB/ALL.
- 35.25-10 Requirements for fuel oil—T/ALL.
- 35.25-15 Carrying of excess steam—TB/ALL.
- 35.25-20 Breaking of safety valve seal—TB/ALL.

Subpart 35.30—General Safety Rules

- 35.30-1 Warning signals and signs—TB/ALL.
- 35.30-5 Fires, matches, and smoking—TB/ALL.
- 35.30-10 Cargo tank hatches, ullage holes, and Butterworth plates—TB/ALL.
- 35.30-15 Combustible gas indicator—TB/ALL.
- 35.30-20 Emergency equipment—TB/ALL.
- 35.30-25 Explosives—TB/ALL.
- 35.30-30 Portable electrical equipment—TB/ALL.
- 35.30-35 Spark producing devices—TB/ALL.
- 35.30-40 Flammable liquid and gas fuels as ship's stores—TB/ALL.
- 35.30-45 Motion picture film—TB/ALL.

Subpart 35.35—Cargo Handling

- 35.35-1 Men on duty—TB/ALL.
- 35.35-5 Electric bonding—T/ALL.
- 35.35-10 Closing of scuppers and sea valves—TB/ALL.
- 35.35-15 Connecting for cargo transfer—TB/ALL.
- 35.35-20 Inspection prior to transfer of cargo—TB/ALL.
- 35.35-25 Approval to start transfer of cargo—TB/ALL.
- 35.35-30 "Declaration of Inspection" for tank ships—T/ALL.
- 35.35-35 Duties of senior deck officer during transfer operations—TB/ALL.
- 35.35-40 Conditions under which transfer operations shall not be commenced or if started shall be discontinued—TB/ALL.
- 35.35-42 Restrictions on vessel coming alongside a tank vessel while loading Grade A, B, or C cargo—TB/ALL.
- 35.35-45 Auxiliary steam, air, or electric current—B/ALL.

- Sec. 35.35-50 Termination of transfer operations—TB/ALL.

- 35.35-55 Transfer of other cargo or stores on tank vessels—TB/ALL.
- 35.35-60 Transportation of other cargo or stores on tank barges—B/ALL.
- 35.35-70 Maintenance of cargo handling equipment—TB/ALL.
- 35.35-75 Emergencies—TB/ALL.

Subpart 35.40—Marking of Fire and Emergency Equipment

- 35.40-1 General alarm contact maker—TB/ALL.
- 35.40-5 General alarm bells—TB/ALL.
- 35.40-6 Emergency lights—TB/ALL.
- 35.40-7 Carbon dioxide alarm—T/ALL.
- 35.40-10 Steam, foam, or CO₂ fire smothering apparatus—TB/ALL.
- 35.40-15 Fire hose stations—TB/ALL.
- 35.40-17 Foam hose/monitor stations—T/ALL.
- 35.40-18 Water spray systems—TB/ALL.
- 35.40-20 Emergency equipment—TB/ALL.
- 35.40-25 Fire extinguishers—TB/ALL.
- 35.40-30 Instructions for changing steering gear—TB/ALL.
- 35.40-35 Rudder orders—TB/ALL.
- 35.40-40 Vessel's name on equipment—TB/ALL.

Subpart 35.70—Power-Operated Industrial Trucks

- 35.70-1 Application—TB/ALL.
- 35.70-3 Alternates—TB/ALL.
- 35.70-5 Definitions of terms used in subpart—TB/ALL.
- 35.70-7 Approved power-operated industrial trucks—TB/ALL.
- 35.70-10 Permissible areas of use—TB/ALL.
- 35.70-15 Types of cargo permitted to be handled by trucks—TB/ALL.
- 35.70-20 Special operating conditions—TB/ALL.
- 35.70-25 Refueling—TB/ALL.
- 35.70-30 Charging or replacing batteries—TB/ALL.
- 35.70-35 Stowage of trucks aboard a vessel—TB/ALL.

AUTHORITY: The provisions of this Part 35 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply R.S. 4472, as amended, 4488, as amended, 4491, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 170, 481, 489, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8028; 167-38, Oct. 26, 1959, 24 F.R. 8857, unless otherwise noted.

Subpart 35.01—Special Operating Requirements

- § 35.01-1 Inspection and testing required when making alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions—TB/ALL.

(a) The provisions of "Standard for the Control of Gas Hazards on Vessels to be Repaired," NFPA No. 306, published by National Fire Protection Association, 60 Batterymarch Street, Boston, Mass., 02110, shall be used as a guide in conducting the inspections and issuance of certificates required by this section.

(b) Until an inspection has been made to determine that such operation can be undertaken with safety, no alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions shall be made:

(1) Within or on the boundaries of cargo tanks which have been used to carry flammable or combustible liquid or chemicals in bulk, or within spaces adjacent to such cargo tanks; or,

(2) Within or on the boundaries of fuel tanks; or,

(3) To pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(c) Such inspections shall be made and evidenced as follows:

(1) In ports or places in the United States or its territories and possessions, the inspection shall be made by a marine chemist certificated by the National Fire Protection Association; however, if the services of such certified marine chemist are not reasonably available, the Officer in Charge, Marine Inspection, upon the recommendation of the vessel owner and his contractor or their representative, shall select a person who, in the case of an individual vessel, shall be authorized to make such inspection. If the inspection indicates that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, shall be issued by the certified marine chemist or the authorized person before the work is started. Such qualifications shall include any requirements as may be deemed necessary to maintain, insofar as can reasonably be done, the safe conditions in the spaces certified, throughout the operation and shall include such additional tests and certifications as considered required. Such qualifications and requirements shall include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

(2) When not in such a port or place, and a marine chemist or such person authorized by the Officer in Charge, Marine Inspection, is not reasonably available, the inspection shall be made by the senior officer present and a proper entry shall be made in the vessel's logbook.

(d) It shall be the responsibility of the senior officer present to secure copies of certificates issued by the certified marine chemist or such person authorized by the Officer in Charge, Marine Inspection. It shall be the responsibility of the senior officer present, insofar as the persons under his control are concerned, to maintain a safe condition on the vessel by full observance of all qualifications and requirements listed by the marine chemist in the certificate.

§ 35.01-5 Sanitary condition and crew quarters—T/ALL.

(a) It shall be the duty of the master and chief engineer of every tankship to see that such vessel and crew's quarters are kept in a sanitary condition.

(b) Crew quarters shall be kept in sanitary condition by daily cleaning and removal of rubbish, and by painting at regular intervals as needed. Floors shall be maintained in good condition to facilitate cleaning. Lighting, heating, and ventilation in quarters shall be maintained in satisfactory condition: *Provided, however,* That forced ventilation when installed may be closed down during transfer of cargo.

(c) Before making any important repairs to or changes in the electrical installation, an inspection shall be made as required by § 111.05-10(f) of Subchapter J (Electrical Engineering) of this chapter, and such changes or repairs shall (1) comply with the requirements of this Subchapter J and (2) have the approval of the chief engineer. Miscellaneous electrical appliances intended to provide additional artificial lighting, entertainment, and for personal use, etc., shall also be subject to the approval of the chief engineer.

§ 35.01-10 Shipping papers—TB/ALL.

Each loaded tank vessel shall have on board a bill of lading, manifest, or shipping document giving the name of the consignee and the location of the delivery point, the kind, grades, and approximate quantity of each kind and grade of cargo, and for whose account the cargo is being handled. The tank vessel shall not be delayed in order to secure exact quantities of cargo. Such manifests or bills of lading may be made out by the master, master of the towing vessel, owner, or agent of the owner: *Provided, however,* That in the case of unmanned barges where shipping papers are not available, an entry in the logbook of the towing vessel giving the name of the shipper and location of shipping point, the name of the consignee and location of delivery point, the approximate kind, grade, and quantity of cargo in each barge of the tow, and for whose account the cargo is being handled, shall be considered as complying with the requirements of this section.

§ 35.01-15 Carriage of persons other than crew—TB/ALL.

No person not connected with the operation of a tank ship or tank barge or not having legitimate business with said vessel, shall be permitted aboard while vessel is under way unless specifically allowed by its certificate.

§ 35.01-20 Pilot ladders—T/OC.

(a) On and after May 26, 1965, every tankship which normally employs a pilot shall have an approved type ladder for the use of the pilot in addition to the ladders required by § 33.20-1(c) of this subchapter. Pilot ladder installations shall be in accordance with the following:

(1) All pilot ladders shall be approved Type I (rope suspension) or Type II (chain suspension) ladders constructed in accordance with Subpart 160.017 of Subchapter Q (Specifications) of this chapter.

(2) Suitable spreaders, a man rope, and a safety line shall be kept readily available for use in conjunction with the pilot ladder whenever circumstances may so require.

(3) When used, the ladder shall be secured in a position so that each step rests firmly against the ship's side, and so the pilot can gain safe and convenient access to the ship after climbing not more than 30 feet. Whenever the distance from sea level is more than 30 feet, access from the pilot ladder to the ship shall be by

means of an accommodation ladder or other equally safe and convenient means.

(4) Arrangements shall be such that the rigging of the ladder and the embarkation and debarkation of the pilot is supervised by a responsible officer of the ship, and that handholds are provided to assist the pilot to pass safely and conveniently from the head of the ladder into the ship or onto the ship's deck.

(5) At night a light shining over the side shall be available for use, and the deck at the position where the pilot boards the ship shall be adequately lighted.

(b) Tankships contracted for prior to May 26, 1965, shall meet the requirements of this section, except as follows:

(1) Existing pilot ladders not meeting the requirements of paragraph (a) (1) of this section may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. All new or replacement ladders shall meet the applicable requirements.

§ 35.01-25 Aluminum and/or magnesium sacrificial anode installations—TB/ALL.

(a) The installation of aluminum and/or magnesium sacrificial anodes in cargo tanks utilized for the carriage of flammable or combustible liquids in bulk is prohibited.

(b) All existing installations of aluminum and/or magnesium sacrificial anodes in cargo tanks utilized for the carriage of flammable or combustible liquids in bulk shall be removed at the first available opportunity but not later than October 1, 1964.

§ 35.01-30 Reckless or negligent operation prohibited by law—TB/ALL.

(a) Subsection 13 (a) of the Act of April 25, 1940, as amended (46 U.S.C. 5261), reads as follows:

No person 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. To "operate" means to navigate or otherwise use a motorboat or a vessel. (Interpret or apply sec. 17, 54 Stat. 166, as amended; 46 U.S.C. 526p)

§ 35.01-35 Repairs and alterations to firefighting equipment—TB/ALL.

(a) No extensive repairs or alterations, except in emergency, shall be made to any fire-extinguishing apparatus, or other appliance subject to inspection, without advance notice to the Officer in Charge, Marine Inspection. Such repairs or alterations shall so far as is practicable be made with materials and tested in the manner specified within the regulations in this subchapter and Subchapter Q (Specifications) of this chapter for new construction.

(b) Emergency repairs or alterations shall be reported as soon as practicable to the Officer in Charge, Marine Inspection, where the vessel may call after such repairs are made.

§ 35.01-40 Prevention of oil pollution—TB/ALL.

(a) All tank vessels shall be so operated as to meet the requirements of the Oil Pollution Act, 1924 (33 U.S.C. 431-

437). In addition, all tank ships shall be so operated as to avoid discharging any oil, oily ballast, or tank washings which may foul the surface of the sea, within any of the prohibited zones set forth in the Oil Pollution Act, 1961 (33 U.S.C. 1001-1015).

(Sec. 8, 75 Stat. 403; 33 U.S.C. 1007. Treasury Department Order 167-46, Nov. 6, 1961, 26 F.R. 10609)

**§ 35.01-45 Open hopper type barges—
B/ALL.**

(a) With the exception of those open hopper type barges constructed or modified in conformance with the requirements of Subpart 32.63 of this subchapter, the special operating conditions in this section apply to all other open hopper type barges carrying bulk cargoes as follows:

(1) Flammable liquids having a Reid vapor pressure in excess of 25 pounds per square inch, absolute, in independent tanks (Part 32 of this subchapter).

(2) Liquefied flammable gases (Part 38 of this subchapter).

(3) Flammable or combustible liquids having lethal characteristics (Class B or C poisons) (Part 39 of this subchapter).

(b) All open hopper type barges, while carrying in bulk any of the cargoes described in paragraph (a) of this section, shall be operated in conformance with the provisions in this section. However, the provisions in this section are not applicable to such barges when empty (not necessarily cleaned or gas-freed).

(c) (1) Except as otherwise provided in this section, no such open hopper type barge shall be placed as a lead barge in any tow. Such barges shall be placed in protected positions within the tow so that the danger from diving or swamping will be minimized. Where, due to operating conditions, compliance with this subparagraph is impossible, the provisions of subparagraph (3) of this paragraph apply. The person in charge of the towing vessel shall be responsible for compliance with this subparagraph.

(2) No such open hopper type barge shall be moved from a loading facility unless all void spaces and bilges are substantially free of water. Periodic inspections and necessary pumping shall be carried out to insure the maintenance of such water-free conditions, in order to minimize the free surface effect in both the longitudinal and transverse directions. Except when otherwise considered necessary for inspection or pumping, all hatch covers and other hull closure devices for void spaces and hull compartments shall be closed and secured at all times. In the case of unmanned barges, the person in charge of the towing vessel shall be deemed to be in charge of the barge, and all requirements to be carried out on the barge shall be carried out by or under the direction of such person.

(3) When an open hopper type barge is in an exposed position, such that protection from swamping provided by adjoining barges cannot be obtained from location within the tow alone, it shall be the responsibility of the person in charge of the towing vessel to control speed so

as to insure protection against diving and swamping of the barge, having due regard to its design and freeboard, and to the operating conditions.

(d) To show that special operating requirements apply to a specific open hopper type barge, additional placards or signs shall be displayed in at least four different locations on the barge when the cargoes described in paragraph (a) of this section are carried in any form in the cargo tanks. The placards or signs shall be posted on the barge approximately amidships on each side and near the centerline of each end, facing outboard. Racks, or other suitable means, for mounting such placards or signs shall be so arranged as to provide clear visibility and shall be protected from becoming readily damaged or obscured. The placards or signs shall be at least equal in dimensions to the ICC standard tank car "Dangerous" placard (10¾ inches square or larger), and shall display a circle (10 inches in diameter or larger) with alternating quadrants of white and red, and so mounted that the red quadrants are centered on the verticle axis. The shipper and/or owner of the barge shall be responsible for the installation of the required placards or signs, including maintenance of them while such barge is in temporary storage with cargo aboard. The person in charge of the towing vessel shall be responsible for the continued maintenance of the placards or signs while such barge is in transit.

**§ 35.01-50 Special operating requirements for tank barges carrying certain dangerous bulk cargoes—
B/ALL.**

(a) The requirements of this section shall apply to all tank barges carrying bulk cargoes as follows:

(1) Flammable liquids having a Reid vapor pressure in excess of 25 pounds per square inch, absolute, in independent tanks (Part 32 of this subchapter).

(2) Liquefied flammable gases (Part 38 of this subchapter).

(3) Flammable or combustible liquids having lethal characteristics (Class B or C poisons) (Part 39 of this subchapter).

(4) Certain flammable or combustible dangerous cargoes (Part 40 of this subchapter).

(b) All tank barges constructed or modified in conformance with the requirements of Subpart 32.63 of this subchapter are exempt from the provisions of § 35.01-45.

(c) When it is necessary to operate box or square-end barges as lead barges of tows, the person in charge of the towing vessel shall control the speed to insure protection against diving and swamping of such barges, having due regard to their design and freeboard, and to the operating conditions.

(d) All barges, while carrying in bulk any of the cargoes described in paragraph (a) of this section, shall be operated in conformance with the provisions of this section. However, the provisions of this section are not applicable to such barges when empty and gas-freed.

(e) Barges shall not be moved from a loading facility unless all bilges and void spaces (except those used for ballasting) are substantially free of water. Periodic inspections and necessary pumping shall be carried out to insure maintenance of such water-free condition in order to minimize the free surface effects, both in the longitudinal and transverse directions. Except when otherwise considered necessary for inspection or pumping, all hatch covers and other hull closure devices for void spaces and hull compartments other than cargo spaces shall be closed and secured at all times.

(f) During the time the cargo tanks contain dangerous cargoes described in paragraph (a) of this section in any amount, in the liquid or gaseous state, the barge shall be under constant surveillance.

(1) A strict watch of each unmanned barge in tow shall be maintained from the towing vessel while underway.

(2) A towing vessel engaged in transporting such unmanned barges shall not leave them unattended. When a barge is moored, but not gas free, it shall be under the observation of a watchman who may be a member of the complement of the towing vessel, or a terminal employee, or other person. Such person shall be responsible for the security of the barge and for keeping unauthorized persons off the barge. Such person shall be provided with, read, and have in his possession for ready reference the information cards required by § 35.01-55.

(g) The owner, operator, master, or person in charge of any barge carrying dangerous cargoes described in paragraph (a) of this section shall insure that, while the barge is being towed and during cargo transfer operations, the persons as required by § 31.15-5 of this subchapter and § 35.35-1 and information cards as required by § 35.01-55 are provided.

§ 35.01-55 Warning signs and information cards for those barges carrying bulk cargoes having dangerous characteristics in addition to flammability or combustibility—B/ALL.

(a) The requirements of this section shall apply to all tank barges carrying bulk cargoes as follows:

(1) Liquefied flammable gases having significant hazards other than flammability (Part 38 of this subchapter).

(2) Flammable or combustible liquids having lethal characteristics (Class B or C poisons) (Part 39 of this subchapter).

(3) Certain flammable or combustible dangerous cargoes (Part 40 of this subchapter).

(b) Warning signs shall be displayed on the vessel, port and starboard, facing outboard without obstructions, at all times except when the vessel is gas free. The warning sign shall be rectangular and a minimum of three feet wide and two feet high. It shall be of sufficient size to accommodate the required alerting information, which shall be in black block style letters and numerals (characters) at least three inches high on a white background. The minimum spac-

ing between adjacent words and lines of characters shall be two inches. The minimum spacing between adjacent characters shall be one-half inch. All characters shall have a minimum stroke width of one-half inch and shall be a minimum of two inches wide, except for the letters "M" and "W" which shall be a minimum of three inches wide, and except for the letter "I" and the numeral "1", which may be one-half inch wide. The signs shall have a two-inch minimum white border clear of characters. The signs shall be maintained legible. The alerting information shall include the following:

- (1) Danger.
- (2) Categories of hazards: (This shall be as listed in the classification column in § 146.04-5 in Subchapter N (Dangerous Cargoes) of this chapter, and additional descriptive terms, as applicable).
- (3) Cargo identification by name: (This name shall be as listed in § 146.04-5 in Subchapter N (Dangerous Cargoes) of this chapter. If not specifically listed by name, the common chemical name as shown on the information card shall be used).

(4) Prohibitions: (Necessary prohibitions, such as "No Smoking," etc.).

(c) An information card for each cargo being transported shall be carried on the bridge or in the pilothouse of the towing vessel readily available for use by the person in charge of the watch. Such information card shall also be carried aboard the barge when it is not gas free. The minimum card size shall be 7" by 9½". The card shall have legible printing on one side only. The following data shall be listed:

(1) *Cargo identification characteristics.* Identification of the cargo as listed in § 146.04-5 in Subchapter N (Dangerous Cargoes) of this chapter and its common chemical name if the chemical name is not so specifically listed, its appearance and odor. A statement of the hazards involved and instructions for the safe handling of the cargo and, as applicable, the need for special cargo environments.

(2) *Emergency procedures.* Precautions to be observed in the event of spills, leaks, or equipment or machinery breakdown and/or uncontrolled release of the cargo into the waterway or atmosphere. Precautions to be observed in the event of exposure of personnel to toxic cargoes.

(3) *Firefighting procedures.* Precautions to be observed in the event of a fire occurring on or in the vicinity of the barge, and an enumeration of firefighting media suitable for use in case of a cargo fire.

(d) In the event that a barge is or has been loaded with two or more dangerous cargoes described in paragraph (a) of this section and until the tanks containing such cargoes have been gas-freed, the following additional requirements shall be met:

(1) A warning sign, meeting the requirements of paragraph (b) of this section and setting forth the alerting information required by paragraphs (b) (1) and (4) of this section, shall be located amidships.

(2) The warning signs, meeting the requirements of paragraph (b) of this section and setting forth the alerting information required by paragraphs (b) (2) and (3) of this section, shall be so located that each sign positively identifies the contents of each tank.

(3) An information card for each cargo (see paragraph (c) of this section) shall be carried for ready reference aboard the barge.

Subpart 35.03—Work Vests

§ 35.03-1 Application—TB/ALL.

(a) Provisions of this subpart shall apply to all tank vessels.

§ 35.03-5 Approved unicellular plastic foam work vests—TB/ALL.

(a) Buoyant work vests carried under the permissive authority of this subpart shall conform to the specifications contained in Subpart 160.053 in Subchapter Q (Specifications) of this chapter.

§ 35.03-10 Use—TB/ALL.

(a) Approved buoyant work vests are considered to be items of safety apparel and may be carried aboard tank vessels to be worn by crew members when working near or over the water under favorable working conditions. They shall be used under the supervision and control of designated ship's officers. When carried, such vests shall not be accepted in lieu of any portion of the required number of approved life preservers and shall not be substituted for the approved life preservers required to be worn during drills and emergencies.

§ 35.03-15 Shipboard stowage—TB/ALL.

(a) The approved buoyant work vests shall be stowed separately from the regular stowage of approved life preservers.

(b) The locations for the stowage of work vests shall be such as not to be easily confused with that for approved life preservers.

§ 35.03-20 Shipboard inspections—TB/ALL.

(a) Each work vest shall be subject to examination by a marine inspector to determine its serviceability. If found to be satisfactory, it may be continued in service, but shall not be stamped by a marine inspector with a Coast Guard stamp. If a work vest is found not to be in a serviceable condition, then such work vest shall be removed from the vessel. If a work vest is beyond repair, it shall be destroyed or mutilated in the presence of a marine inspector so as to prevent its continued use as a work vest.

Subpart 35.05—Officers and Crews

§ 35.05-1 Licensed officers and crews of tankships—T/ALL.

No tankship of the United States shall be navigated unless she shall have in her service and on board such complement of licensed officers and crew, including certified lifeboatmen and certificated tankermen where required by the regulations in this subchapter, separately

stated, as called for in her certificate of inspection.

§ 35.05-5 Master required on tankships—T/ALL.

There shall be a duly licensed master on board every tankship of more than 150 gross tons, whenever such tankship is under way.

§ 35.05-10 Pilot required on tankships—T/LBR.

(a) No tankship shall be navigated unless she shall have in her service and on board either a licensed master or pilot as called for in her certificate of inspection.

(b) The navigation of every tankship above 150 gross tons shall be under the control of a first-class pilot, and every such pilot shall be limited in his license to the particular service for which he is adapted.

(c) A first-class pilot or a second-class pilot who has reached the age of 21 years may act as master or pilot in charge of the navigation of a tank ship not exceeding 150 gross tons. A second-class pilot is authorized to act as pilot in charge of a watch on any tankship within the tonnage specified in his license.

§ 35.05-15 Watchman for a tank vessel—TB/ALL.

(a) *Manned tank vessel.* At least one member of the crew of a manned tank vessel shall be on board at all times except when the vessel is gas free or is moored at a dock or terminal at which watchman service is provided.

(b) *Unmanned barge.* (1) A strict watch of each unmanned barge in tow shall be maintained from the towing vessel while under way.

(2) When a barge is moored but not gas free, at least one of the following precautions shall be taken:

- (i) The barge shall be under the observation of a watchman who may be a member of the complement of the towing vessel, or a terminal employee, or other competent person responsible for the security of the barge and for keeping unauthorized persons off the barge; or,
- (ii) All cargo tank hatches shall be clearly marked in not less than 3-inch lettering, "DANGER—KEEP OUT," and in addition all hatch covers shall be closed and dogged down, or otherwise secured, by a tool-operated device, such as a length of pipe, so that no person can open the hatch by use of bare hands alone.

§ 35.05-20 Physical condition of crew—TB/ALL.

No person shall be engaged as a member of the crew on a tank vessel if he is known by the employer to be physically or mentally incapable of performing the duties assigned him.

§ 35.05-25 Illness, alcohol, drugs—TB/ALL.

(a) No person, known by the individual in charge of a tank vessel to be under the influence of liquor or other stimulant, or to be ill to such an extent as to unfit him for any particular service

on the tank vessel, shall be allowed to perform such service while in such condition.

(b) When a member of the crew of a tank vessel which is loading bulk cargo of Grade A, B, or C arrives at the gangway and is observed to be in an intoxicated condition, he shall not be permitted to board the vessel without escort.

Subpart 35.07—Logbook Entries

§ 35.07-1 Application—TB/ALL.

(a) Except as specifically noted, the provisions of this subpart shall apply to all tank vessels.

§ 35.07-5 Logbooks and records—TB/ALL.

(a) *General—TB/ALL.* Under various statutes or by regulations in this subchapter, specified tank vessels shall have certain logbooks or records, and, when the occasion arises, it is the duty of the master or person in charge to place therein specific entries as required by law or regulations in this subchapter.

(b) *Official Logbook—TB/OC.* R.S. 4290, as amended (46 U.S.C. 201), states: "Every vessel making voyages from a port in the United States to any foreign port, or, being of the burden of 75 tons or upward, from a port on the Atlantic to a port on the Pacific, or vice versa, shall have an Official Logbook; * * *." This Official Logbook is furnished gratuitously to masters of United States' flag vessels by the Coast Guard, as Form CG-706B or CG-706C, depending upon the number of persons employed as crew. There is printed in the first several pages of this Official Logbook various acts of Congress relating to logbooks and the entries required to be made therein. When a voyage is completed, or after a specified period of time is completed, the Official Logbooks with required entries therein shall be filed with the Officer in Charge, Marine Inspection, at or nearest the port where the vessel may be.

(c) *Logs or records—TB/ALL.* For vessels other than those required to have Official Logbooks by R.S. 4290, the owners, operators, and/or masters are to supply their own logs or records in any form desired, which will be considered to take the place of the Official Logbooks and may be used for the purpose of making entries therein as required by law or regulations in this subchapter. Such logs or records are not filed with the Officer in Charge, Marine Inspection, but shall be kept available for review by a marine inspector for a period of one year after the date to which the records refer, except for separate records of tests and inspections of firefighting equipment which shall be maintained with the vessel's logs for the period of validity of the vessel's certificate of inspection.

§ 35.07-10 Actions required to be logged—TB/ALL.

(a) *General—TB/ALL.* The actions and observations noted in this section shall be entered in the Official Logbook or in logs or records considered to take place of the Official Logbooks. This section contains no requirements which are not made in specific laws or in other

regulations in this subchapter, the items being merely grouped together for convenience.

(b) *Entries—T/ALL.* Entries shall be made in the logs of tankships with respect to the following:

(1) Fire and lifeboat drills. Weekly. See § 35.10-5.

(2) Electric power-operated lifeboat winches. Once in each three months. See § 35.10-7.

(3) Draft and load line marks. For tankships of 150 gross tons and over, prior to leaving port for ocean, coastwise, and Great Lakes voyages only. See 46 U.S. Code, sections 85e and 88e, and § 35.20-5.

(4) Steering gear tests. Prior to departure, or for tank ships on voyages of less than 48 hours duration or tankships operating on lakes, bays, sounds and rivers, once every week. See § 35.20-10.

(5) Fuel oil data. Upon receipt of fuel oil on board to be used as fuel. See § 35.25-10.

(6) Line-throwing appliances. Once every three months. See § 35.10-1(c).

(7) Inspections and tests of firefighting equipment. Once every year. See § 31.10-18 of this subchapter.

(8) Operation and inspection of the emergency lighting and power systems. Once in each week that the vessel is navigated. See § 35.10-15.

(9) Cargo gear inspections: At least once a month. See § 31.37-70 of this subchapter.

(c) *Entries—B/ALL.* Entries shall be made in the records for tank barges with respect to the following:

(1) Inspections and tests of firefighting equipment. Once every year. See § 31.10-18 of this subchapter.

(2) Draft and load line marks. For tank barges of 150 gross tons and over, prior to leaving port for ocean, coastwise, and Great Lakes voyages only. See 46 U.S. Code, sections 85e and 88e.

(3) Cargo gear inspections: At least once a month. See § 31.37-70 of this subchapter.

Subpart 35.07—Logbook Entries

§ 35.07-15 Official log entries—TB/OC.

(a) On vessels where an Official Logbook is required by R.S. 4290 (46 U.S.C. 201), all items relative to the crew and passengers, as well as with respect to any casualties which may occur, shall be entered in the Official Logbook as required by this law.

Subpart 35.10—Fire and Emergency Requirements

§ 35.10-1 Station bills, muster lists, and line-throwing appliance drills—T/ALL.

(a) It shall be the duty of the master of every tankship over 500 gross tons to cause station bills and muster lists to be prepared before the vessel sails, which shall be signed by the master, who shall be responsible for their preparation. The station bills and muster lists shall be posted in conspicuous places in several parts of the tankship, particularly in the crew's quarters, and must contain full

particulars of the signals which will be used for calling the crew to their stations for emergency duties. Special duties shall be allotted to each member of the crew and the muster list shall show all these special duties and indicate the station to which each man must go and the duties he has to perform. The special duties should, as far as possible, be comparable to the regular work of the individual.

(b) The duties provided for by the muster lists should include:

(1) The closing of airports, watertight doors, fire doors, and fire screens, the covers and all valves of all scuppers, sanitary and other discharges which lead through the ship's hull below the margin line, and stopping the fans and ventilating systems.

(2) The extinction of fire.

(3) The equipment of lifeboats, life rafts, and buoyant apparatus and their preparation for launching.

(c) The master of a tankship equipped with a line-carrying gun shall drill his crew in its use every 3 months, but the actual firing of the gun on the tankship shall be discretionary with the master. Each drill shall be recorded in the ship's logbook.

§ 35.10-5 Emergency signals; fire and lifeboat drills—T/ALL.

(a) The fire-alarm signals shall be a continuous blast of the whistle for a period of not less than 10 seconds supplemented by a continuous ringing of the general alarm bells for not less than 10 seconds. For dismissal from fire-alarm stations, the general alarm bells should be sounded three times, supplemented by three short blasts of the whistle. The signal for lifeboat drill or lifeboat stations shall be more than six short blasts and one long blast of the whistle, supplemented by the same signal on the general alarm bells. Where whistle signals are used to direct the handling of lifeboats they shall be as follows:

(1) To lower lifeboats, one short blast of the whistle.

(2) To stop lowering the lifeboats, two short blasts of the whistle.

(3) For dismissal from lifeboat stations, three short blasts of the whistle: *Provided*, That on river tankships the whistle signals specified herein may be made on the ship's bell.

(b) The master of any tankship may establish such other emergency signal, in addition to the above, as will provide that all the officers and all the crew of the tankship will have positive and certain notice of the existing emergency.

(c) The master may organize a squad to be used for emergency duties (other than a general emergency), or crew practices, and the nature of the signals or other means for assembling the squad remains within the discretion of the master. Such signals should not conflict with the navigational signals or the signals used for a general alarm.

(d) It shall be the duty of the Master, or the mate, or officer next in command to conduct a fire and boat drill at least once in every week. At least one such fire and boat drill shall be held within 24

hours of leaving a port if more than 25 percent of the crew have been replaced at that port. In connection with these drills it shall be the duty of such officer to call all hands to quarters and (weather permitting) exercise them in the unlash and swinging out of the lifeboats, the closing of all hand or power operated watertight doors which are in use at sea, closing all fire doors and fire screens, the use of fire pumps, and all other apparatus for the safety of life on board of such vessels with special regard for the drill of the crew in the method of adjusting life preservers; to see that all the equipments required by law are in complete working order for immediate use; and to see that lifeboat equipment is examined at least monthly to insure that it is complete. The fact of exercise of the crew as herein contemplated, shall be entered upon the ship's logbook.

(e) This section relating to fire and lifeboat drills contemplates that such drills shall be conducted precisely as though an emergency existed. To accomplish the purpose of this section, lifeboat covers and strongbacks shall be removed, plugs or caps put in place, boat ladders secured in position for use, painters carried forward and tended so as to provide a good lead and slack to hold the boat in position under the davits when in the water. Different groups of lifeboats shall be used in turn at successive boat drills and, if practicable and reasonable, every lifeboat shall be lowered at least once every three months. The person in charge of each lifeboat or liferaft should have a list of its crew and should see that the men under his orders are acquainted with their several duties. The motor and the hand-operated propeller gear of each lifeboat shall be operated for a period of not less than 5 minutes once at least in every 7 days, in order that it may be ready for service at any time. Such operation shall be made a part of the report of such drill. The hand pumps and fire pump shall be operated long enough and a sufficient number of outlets used to insure that such equipment is in order and effectual. When oxygen-breathing apparatus, gas masks, or other special equipment is carried, certain members of the crew shall be trained in the use of the equipment.

(f) The entries in the ship's logbook relating to the exercise of the crew in fire and lifeboat drills shall state the day of the month and the hour when so exercised, length of time of the drill, numbers on the lifeboats swung out and numbers on those lowered, number of lengths of fire hose used, a statement of the condition of all fire and lifesaving apparatus, and a report of the monthly examination of the lifeboat equipment. If in any week the required fire and boat drills are not held or only partial drills are held, an entry shall be made stating the circumstances and extent of the drills held.

(g) Any neglect or omission on the part of the officer in command of such vessels to strictly enforce the provisions of this section shall be deemed cause for proceedings under the provisions of R. S.

4450, as amended (46 U. S. C. 239), looking to a suspension or revocation of the license of such officer.

(h) It shall be the duty of the master to require the officers and crew of all tankships to perform the aforesaid drills and discipline in the presence of marine inspectors at intervals sufficiently frequent to assure the said inspectors, by actual observance, that the foregoing requirements of this section are complied with by the officers and the crew.

(i) A copy of these requirements (Form CG-809) shall be furnished to each tankship to which this subpart applies. This form shall be framed under glass and posted in a conspicuous place.

§ 35.10-7 Electric power-operated lifeboat winches—T/ALL.

(a) It shall be the duty of the master to see that all lifeboat winch control apparatus, including motor controllers, emergency switches, master switches, and limit switches, are examined at least once in each 3 months. The examination shall include the removal of drain plugs and/or the opening of drain valves in such appliances to assure that the enclosures are free of water.

(b) The date of the examination required by this section and the condition of the equipment shall be noted in the Official Logbook.

§ 35.10-9 Posting placards containing instructions for launching and inflating inflatable liferafts—TB/ALL.

(a) Every vessel equipped with inflatable liferafts shall have posted in conspicuous places which are regularly accessible to the crew and/or passengers, approved placards containing instructions for launching and inflating inflatable liferafts for the information of persons on board. The number and location of such placards for a particular vessel shall be as determined necessary by the Officer in Charge, Marine Inspection.

(b) Under the requirements contained in § 160.051-6(c)(1) of Subpart 160.051 in Subchapter Q (Specifications) of this chapter, the manufacturer of approved inflatable liferafts is required to provide approved placards containing such instructions with each liferaft.

§ 35.10-15 Emergency lighting and power systems—T/ALL.

(a) Where fitted, it shall be the duty of the master to see that the emergency lighting and power systems are tested and inspected at least once in each week that the vessel is navigated to be assured that the system is in proper operating condition.

(b) Internal combustion engine driven emergency generators shall be tested under load for at least 2 hours, at least once in each month that the vessel is navigated.

(c) Storage batteries for emergency lighting and power systems shall be tested at least once in each 6-month period that the vessel is navigated to demonstrate the ability of the storage battery to supply the emergency loads for 6 hours.

(d) The date of the tests required by this section and the condition and performance of the apparatus shall be noted in the vessel's Official Logbook or in logs or records considered to take the place of the Official Logbook.

§ 35.10-20 Radio apparatus for lifeboats—T/OC.

(a) It shall be the duty of the master to require that all batteries for all fixed and portable radio apparatus for lifeboats are brought up to full charge weekly if the batteries are of a type which require recharging.

(b) In any case, the transmitter shall be tested weekly using a suitable artificial aerial.

Subpart 35.12—Placard of Lifesaving Signals and Breeches Buoy Instructions

§ 35.12-1 Application—T/OCLB.

(a) The provisions of this subpart shall apply to all vessels on an international voyage, and all other vessels of 150 gross tons or over in ocean, coastwise or Great Lakes service.

§ 35.12-5 Availability—T/OCLB.

(a) On all vessels to which this subpart applies there shall be posted in the pilothouse and readily available to the deck officer of the watch a placard (Form CG-811) containing instructions for the use of breeches buoys and the lifesaving signals set forth in Regulation 16, Chapter V, of the International Convention for Safety of Life at Sea, 1960. These signals shall be used by vessels or persons in distress when communicating with lifesaving stations and maritime rescue units.

(b) A copy of Form CG-811 shall also be conveniently posted in the engine-room and crews quarters of all vessels to which this subpart applies.

Subpart 35.15—Casualty or Accident Reports

§ 35.15-1 Notice of casualty and voyage records—TB/ALL.

(a) The owner, agent, master, or person in charge of a vessel involved in a marine casualty shall give notice as soon as possible to the nearest marine inspection office of the United States Coast Guard whenever the casualty results in any of the following:

(1) Damage to property in excess of \$1,500.00.

(2) Material damage affecting the seaworthiness or efficiency of a vessel.

(3) Stranding or grounding.

(4) Loss of life.

(5) Injury causing any person to remain incapacitated for a period in excess of 72 hours; except injury to harbor workers not resulting in death and not resulting from vessel casualty or vessel equipment casualty.

(b) The notice required by paragraph (a) of this section shall show the name and official number of the vessel involved, the owner or agent thereof, the nature and probable occasion of the casualty, the locality in which it occurred, the nature and extent of injury to persons and the damage to property.

(c) In addition to the notice required by paragraph (a) of this section, the person in charge of the vessel shall, as soon as possible, report in writing and in person to the Officer in Charge, Marine Inspection, at the port in which the casualty occurred or nearest the port of first arrival: *Provided*, That when from distance it may be inconvenient to report in person it may be done in writing only. The written report required for personal accident shall be made on Form CG-924E and submitted for each individual injured and each loss of life. For all other vessel casualties the written report shall be made on Form CG-2692.

NOTE: If filed without delay, the Form CG-924E or CG-2692 may also provide the notice required by paragraph (a) of this section.

(d) The owner, agent, master, or other person in charge of any vessel involved in a marine casualty shall retain such voyage records of the vessel as are maintained by the vessel, such as both rough and smooth deck and engineroom logs, bell books, navigation charts, navigation work books, compass deviation cards, gyrocompass records, stowage plans, record of draft, aids to mariners, radiograms sent and received, the radio log and crew and passenger lists. The owner, agent, master, or other officer in charge, shall make those records available to a duly authorized Coast Guard officer or employee for examination upon request.

(e) Whenever a vessel collides with a lightship, buoy, or other aid to navigation under the jurisdiction of the Coast Guard, or is connected with any such collision, it shall be the duty of the person in charge of such vessel to report the accident to the nearest Officer in Charge, Marine Inspection. No report on Form CG-2692 is required unless one or more of the results listed in paragraph (a) of this section occurs.

(f) The master of any nuclear vessel shall immediately inform the Commandant in the event of any accident or casualty to the nuclear vessel which may lead to an environmental hazard. The master shall also immediately inform the competent governmental authority of the country in whose waters the vessel may be in, or whose waters the vessel approaches in a damaged condition.

(Interpret or apply R.S. 4450, as amended, secs. 1, 2, 49 Stat. 1544, secs 13, 17, 54 Stat. 166, as amended, sec. 10, 18 Stat. 128, as amended; 46 U.S.C. 239, 367, 526L(c), 526p, 33 U.S.C. 361)

§ 35.15-5 Reports by engineers of accidents involving boilers or machinery—T/ALL.

It shall be the duty of the engineer in charge when an accident occurs to the boilers or machinery tending to render the further use of such boilers and machinery unsafe until repairs are made to report the same to the Officer in Charge, Marine Inspection, at the port in which the accident occurred or nearest the port of first arrival, immediately upon the arrival of the tankship at the first port reached subsequent to the accident.

§ 35.15-10 Reports when a state of war exists—T/ALL.

During the period when a state of war exists between the United States and any foreign nation, communications in regard to casualties or accidents shall be handled with caution and the reports shall not be made by radio or by telegram.

Subpart 35.20—Navigation

§ 35.20-1 Notice to mariners; aids to navigation—T/OCLB.

(a) Licensed officers are required to acquaint themselves with the latest information published by the United States Coast Guard and the United States Navy regarding aids to navigation, and neglect to do so is evidence of neglect of duty. It is desirable that vessels navigating oceans and coastwise and Great Lakes waters shall have available in the pilothouse for convenient reference at all times a file of the applicable Notice to Mariners. All vessels shall have charts of the waters on which they operate for convenient reference at all times.

(b) Notice to Mariners, published weekly by the United States Coast Guard, which contains announcements and information regarding aids to navigation and charts of waters of the United States, is available for free distribution at the following places: Field offices of the U. S. Coast Guard; U. S. Coast and Geodetic Survey field stations; and the Marine Division, Custom House. Notice to Mariners, published weekly by the U. S. Navy for the correction of charts, sailing directions, light lists, and other publications, and which includes foreign waters and certain waters of the United States, is available for free distribution at the Oceanographic Office, Branch Oceanographic Offices, or any of the agencies at seaboard ports, and is also on file in the United States consulates, where it may be inspected.

§ 35.20-5 Draft of tankships—T/OC.

The master of every tankship shall, whenever leaving port, enter the maximum draft of his vessel in the logbook.

§ 35.20-10 Steering gear test—T/ALL.

On all tankships making voyages of more than 48 hours' duration, the entire steering gear, the whistle, the means of communication, and the signaling appliances between the bridge or pilothouse and engineroom shall be examined and tested by a licensed officer of the vessel within a period of not more than 12 hours before leaving port. All such vessels making voyages of less than 48 hours' duration or operating on lakes, bays, sounds, and rivers shall be so examined and tested at least once in every week. The fact and time of such examination and test shall be recorded in the ship's logbook.

§ 35.20-15 Steering orders—TB/ALL.

(a) For all tank vessels fitted with rudders, the following steering orders shall be given in the direct sense as follows:

(1) "Right rudder" shall be given only when it is intended that the wheel,

the rudder blade, and the head of the ship should go to the right.

(2) "Left rudder" shall be given only when it is intended that the wheel, the rudder blade, and the head of the ship should go to the left.

(b) Where rudder indicators are provided, they shall be installed consistent with the requirements in paragraph (a) of this section.

§ 35.20-20 Master's and officer's responsibility—TB/ALL.

Nothing in this part shall exonerate any master or officer in command from the consequences of any neglect to keep a proper lookout or the neglect of any precaution which may be required by the ordinary practice of seamen or by the special circumstances of the case.

§ 35.20-25 Unauthorized lights—T/ALL.

Any master or pilot of any vessel who shall authorize or permit the carrying of any light, electric or otherwise, not required by law that in any way will interfere with distinguishing the signal lights may be proceeded against in accordance with the provisions of R. S. 4450 (46 U. S. C. 239), as amended, looking to a revocation or suspension of his license.

§ 35.20-30 Flashing the rays of a searchlight or other blinding light—T/ALL.

Flashing the rays of a searchlight or other blinding light onto the bridge or into the pilothouse of any vessel under way is prohibited. Any person who shall flash or cause to be flashed the rays of a blinding light in violation of the above may be proceeded against in accordance with the provision of R. S. 4450, as amended (46 U. S. C. 239), looking to the revocation or suspension of his license or certificate.

§ 35.20-35 Whistling—T/ALL.

Unnecessary sounding of vessel's whistle is prohibited within any harbor limits of the United States. Whenever any licensed officer in charge of any tankship shall authorize or permit such unnecessary whistling, such officer may be proceeded against in accordance with the provisions of R. S. 4450, as amended (46 U. S. C. 239), looking to a revocation or suspension of his license.

Subpart 35.25—Engine Department

§ 35.25-1 Examination of boilers and machinery by engineer—T/ALL.

It shall be the duty of an engineer when he assumes charge of the boilers and machinery of a vessel to examine the same forthwith and thoroughly. If he finds any part thereof in bad condition, he shall immediately report the facts to the master, owner, or agent, and to the nearest Officer in Charge, Marine Inspection, who shall thereupon investigate the matter, and if the former engineer has been willfully negligent in the performance of his duties, he may be proceeded against under the provisions of R.S. 4450, as amended (46 U.S.C. 239), looking to a suspension or revocation of his license.

§ 35.25-5 Repairs of boilers and unfired pressure vessels and reports of repairs or accidents by chief engineer—TB/ALL.

(a) Before making any repairs to boilers or unfired pressure vessels, the chief engineer shall submit a report covering the nature of the repairs to the Officer in Charge, Marine Inspection, at or nearest to the port where the repairs are to be made.

(b) In the event of an accident to a boiler, unfired pressure vessel, or machinery tending to render the further use of the item itself unsafe until repairs are made, or if by ordinary wear such items become unsafe, a report shall be made by the chief engineer immediately to the Officer in Charge, Marine Inspection, or if at sea, immediately upon arrival at port.

§ 35.25-10 Requirements for fuel oil—T/ALL.

(a) Oil to be used as fuel to be burned under boilers on tankships shall have a flash point of not less than 150° F. (closed cup test).

(b) It shall be the duty of the chief engineer to make an entry in the log of each supply of fuel oil received on board, stating the quantity received, the name of the vendor, and the flash point (closed cup test) for which it is certified by the vendor.

(c) It shall be the further duty of the chief engineer to draw and seal at the time the supply is received on board, a half-pint sample of each lot of fuel oil, such sample to be preserved until that particular supply of oil is exhausted.

§ 35.25-15 Carrying of excess steam—TB/ALL.

It shall be the duty of the chief engineer of any tank vessel to see that a steam pressure is not carried in excess of that allowed by the certificate of inspection, and to see that the safety valves, once set and sealed by the inspector are in no way tampered with or made inoperative except as provided in § 35.25-20.

§ 35.25-20 Breaking of safety valve seal—TB/ALL.

If at any time it is necessary to break the seal on a safety valve for any purpose, the chief engineer shall advise the Officer in Charge, Marine Inspection, at the next port of call, giving the reason for breaking the seal and requesting that the valve be examined and adjusted by a marine inspector.

Subpart 35.30—General Safety Rules

§ 35.30-1 Warning signals and signs—TB/ALL.

(a) *Red warning signals.* During transfer of bulk cargo while fast to a dock, a red signal (flag by day and electric lantern at night) shall be so placed that it will be visible on all sides. While transferring bulk cargo at anchor, a red flag only shall be displayed.

(b) *Warning sign at gangway.* (1) Warning placards should be kept at hand for display while a vessel is fast to a dock during transfer of cargo, to warn

persons approaching the gangway. The placard shall state in letters not less than 2 inches high substantially as follows:

WARNING

No open lights.
No smoking.
No visitors.

(2) Where poisonous cargoes are being transferred the warning sign shall also include the word "Poison" to indicate the nature of the liquid being handled. (See Part 39 of this subchapter.)

(c) *Warning sign in radio room.* A sign shall be placed in radio room warning against the use of radio equipment during transfer of Grade A, B, or C liquids, except by permission of senior deck officer.

(d) Additional warning signs required by cargoes having significant hazards other than flammability or combustibility are described in § 35.01-55.

(e) Additional placards or signs required in connection with the movement of certain open hopper type barges are described in § 35.01-45.

§ 35.30-5 Fires, matches, and smoking—TB/ALL.

(a) *General.* In making the determinations required under paragraphs (b), (c), and (d) of this section the senior deck officer on duty, who shall be a licensed officer or certificated tankerman, shall exercise his skill and experience with due regard to attendant conditions and circumstances, including consideration for location of shore side facilities, maintenance of mobility, provision for fire protection, state or change of winds, tides, sea, weather conditions, forces of nature and other circumstances generally beyond human control.

(b) *Boiler fires.* Boiler fires are normally permitted during cargo transfer operations: *Provided*, That prior to loading Grades A, B, and C cargoes, the senior deck officer on duty, who shall be a licensed officer or certificated tankerman, shall make an inspection to determine whether in his judgment boiler fires may be maintained with reasonable safety during the loading operation.

(c) *Galley fires.* Galley fires are normally permitted during cargo transfer operations: *Provided*, That prior to loading Grades A, B, and C cargoes the senior deck officer on duty, who shall be a licensed officer or certificated tankerman, shall make an inspection to determine whether in his judgment galley fires may be maintained with reasonable safety during the loading operation.

(d) *Smoking.* Smoking is prohibited on the weather decks of tank vessels when they are not gas free or are alongside docks. At other times and places the senior deck officer on duty, who shall be a licensed officer or certificated tankerman, shall designate when and where the crew may smoke: *Provided*, That prior to loading Grade A, B, or C cargo the master or senior deck officer on duty shall make an inspection to determine if and where, in his judgment, smoking may be permitted with reasonable safety during the loading operation.

(e) *Matches.* The use of other than safety matches is forbidden aboard tank vessels at all times.

§ 35.30-10 Cargo tank hatches, ullage holes, and Butterworth plates—TB/ALL.

No cargo tank hatches, ullage holes, or Butterworth plates shall be opened or shall remain open without flame screens, except under the supervision of the senior members of the crew on duty, unless the tank opened is gas free.

§ 35.30-15 Combustible gas indicator—TB/ALL.

(a) The provisions of this section shall apply only to United States flag vessels.

(b) Manned tank barges and tankships authorized to carry Grade A, B, C, or D liquids at any temperature, or Grade E liquids at elevated temperatures, shall be provided with a combustible gas indicator suitable for determining the presence of explosive concentrations of the cargo carried. An indicator which bears the label of Underwriters' Laboratories, Inc., Factory Mutual Engineering Division, or other organizations acceptable to the Commandant will be accepted as meeting this requirement.

§ 35.30-20 Emergency equipment—TB/ALL.

(a) All manned tank vessels having tanks which exceed 15 feet in depth, measured from the deck to the lowest point at which cargo is carried, all tankships on an international voyage, and all tankships of 1,000 gross tons and over shall be provided with an outfit as follows:

(1) One approved fresh air breathing apparatus, including belt and lifeline. The length of the airhose shall be sufficient to reach from the open deck, well clear of hatch or doorway, to any part of the holds, tanks, and, except as provided in the following subparagraph, the machinery spaces.

(2) If it is not practicable to reach all portions of the machinery space with the airhose of the fresh air breathing apparatus, an approved self-contained breathing apparatus with adequate lifeline shall be carried for use in the machinery space. In such case, the particular apparatus provided for the machinery space shall be used for no other purpose, shall be marked indicating the restriction to its use, and shall be stowed convenient to, but outside of the machinery space.

(3) One approved 3-cell, explosion-proof flashlight, constructed in accordance with Subpart 161.008 of Subchapter Q (Specifications) of this chapter.

(4) One fire ax.

(b) Approved self-contained breathing apparatus with adequate lifelines may be provided in addition to the equipment required in the preceding paragraph, and may be used in any space on the vessel.

(c) For tankships on an international voyage, lifelines shall be of steel or bronze wire rope. Steel wire rope shall be either inherently corrosion resistant or made so by galvanizing or tinning.

Each end shall be fitted with a hook with keeper having a throat opening which can be readily slipped over a 5/8-inch bolt. The total length of the lifeline shall be dependent upon the size and arrangement of the vessel, and more than one line may be hooked together to achieve the necessary length. No individual length of lifeline may be less than 50 feet in length. The assembled lifeline shall have a minimum breaking strength of 1,500 pounds.

§ 35.30-25 Explosives—TB/ALL.

Fulminates or other detonating compounds in bulk in dry condition; explosive compositions that ignite spontaneously or undergo marked decomposition when subjected for forty-eight consecutive hours to a temperature of 167° F. or more; compositions containing an ammonium salt and a chlorate; and other like explosives shall not be accepted, stored, stowed or transported on board tank vessels.

§ 35.30-30 Portable electrical equipment—TB/ALL.

Illumination may be obtained in any compartment by the use of approved explosion-proof, self-contained, battery-fed lamps. Otherwise, no portable electrical equipment of any type shall be used in bulk cargo tanks, fuel oil tanks, cargo pumprooms, or enclosed spaces immediately above or adjacent to bulk cargo tanks unless all the following conditions are met:

- (a) The compartment itself is gas-free;
- (b) The compartments adjacent and the compartments diagonally adjacent are either (1) gas-free, (2) inerted, (3) filled with water, (4) contain Grade E liquid and are closed and secured, or (5) are spaces in which flammable vapors and gases normally are not expected to accumulate; and
- (c) All other compartments of the vessel in which flammable vapors and gases may normally be expected to accumulate are closed and secured.

§ 35.30-35 Spark producing devices—TB/ALL.

(a) Where Grades A, B, C, and D liquid cargoes are involved, power driven or manually operated spark producing devices shall not be used in bulk cargo tanks, fuel oil tanks, cargo pumprooms, or enclosed spaces immediately above or adjacent to bulk cargo tanks unless all the following conditions are met:

- (1) The compartment itself is gas-free;
- (2) The compartments adjacent and the compartments diagonally adjacent are either (i) gas-free, (ii) inerted, (iii) filled with water, (iv) contain Grade E liquid and are closed and secured, or (v) are spaces in which flammable vapors and gases normally are not expected to accumulate; and,
- (3) All other compartments of the vessel in which flammable vapors and gases may normally be expected to accumulate are closed and secured.

(b) This section does not prohibit the use of small hand tools in such locations.

§ 35.30-40 Flammable liquid and gas fuels as ship's stores—TB/ALL.

(a) Flammable liquids and gases to be used as fuels for industrial trucks, lifeboats and other approved equipment shall be marked, labeled and stowed as follows:

(1) They shall be stowed in ICC specification containers, A.S.M.E. containers, or portable safety containers having the approval of a recognized testing laboratory, which containers are authorized for the contents.

(2) Containers shall be marked with the name of contents and shall be labeled in accordance with ICC requirements as follows:

- (i) Flammable liquids—"Red Label"; or,
- (ii) Flammable gases—"Red Gas label".

(3) Containers shall be stowed on or above the weather deck in locations designated by the master. ICC specification containers, A.S.M.E. containers, or portable safety containers having the approval of a recognized testing laboratory may be stowed below the weather deck in a paint or lamp locker provided such containers do not exceed 5 gallons capacity each.

(b) Diesel fuel shall be stowed in locations designated by the master.

§ 35.30-45 Motion picture film—TB/ALL.

(a) Only acetate or slow-burning film may be used. Nitrocellulose film is specifically prohibited.

Subpart 35.35—Cargo Handling

§ 35.35-1 Men on duty—TB/ALL.

(a) A sufficient number of the crew shall be on duty to perform cargo transfer operations.

(b) In the case of unmanned barges, the owners, masters or persons in charge of such barges shall insure that a person holding a valid license as master, mate, pilot, or engineer, or a certificated tankerman is on duty to perform transfer operations, which licensed person or certificated tankerman shall be considered as the person in charge of the unmanned tank barge. Where the bulk liquid cargo to be transferred is covered by the requirements of § 35.01-55, the Officer in Charge, Marine Inspection, shall be furnished satisfactory documentary evidence that such person is trained in, and capable of performing competently, the necessary operations which relate to the transfer of such cargo.

§ 35.35-5 Electric bonding—T/ALL.

A tank vessel may be electrically connected to the shore piping, through which the cargo is to be transferred, prior to the connecting of a cargo hose. This electrical connection, if made, shall be maintained until after the cargo hose has been disconnected and any spillage has been removed.

§ 35.35-10 Closing of scuppers and sea valves—TB/ALL.

Deck officer in charge shall see that all scuppers are properly plugged during

transfer operations except on tank vessels using water for deck cooling. Sea valves shall be closed and lashed, or sealed to indicate that they should not be open during all cargo loading operations. Under no circumstances shall such valves be secured by locks.

§ 35.35-15 Connecting for cargo transfer—TB/ALL.

(a) Movement of the vessel shall be considered when making the cargo connections to insure safe cargo transfer. Suitable material shall be used in joints and in couplings when making connections to insure that they are tight. Under no circumstances shall less than three bolts be used in a bolted flanged coupling.

(b) When cargo connections are supported by ship's tackle, the senior deck officer on duty shall determine the weights involved in order to insure that sufficient tackles are used.

(c) Pans or buckets shall be placed under cargo hose connections on the tank vessel.

§ 35.35-20 Inspection prior to transfer of cargo—TB/ALL.

Prior to the transfer of cargo, the senior deck officer on duty, who shall be a licensed officer or certificated tankerman, shall inspect the vessel to assure himself that the following conditions exist:

- (a) Warnings are displayed as required.
- (b) No repair work in way of cargo spaces is being carried on without his permission.
- (c) Cargo connections have been made as described in § 35.35-15 and cargo valves are set.
- (d) All cargo connections for the loading of Grades A, B, and C cargoes have been made to the vessel's pipelines and not through open end hose in a hatch.
- (e) In loading Grades A, B, and C cargoes, there are no fires or open flames present on the deck, or in any compartment which is located on, facing, open, and adjacent to that part of the deck on which cargo connections have been made.

(f) The shore terminal or the other tank vessel concerned has reported itself in readiness for transfer of cargo.

(g) All sea valves connected to the cargo piping system are closed.

(h) In loading Grades A, B, and C cargoes, that an inspection has been made to determine whether boiler fires can be maintained with reasonable safety.

(i) In loading Grades A, B, and C cargoes, that an inspection has been made to determine whether galley fires can be maintained with reasonable safety.

(j) In loading Grades A, B, and C cargoes, that an inspection has been made to determine whether smoking may be permitted with reasonable safety.

(k) On tankships the construction or conversion of which is started on or after July 1, 1951, which are to load or discharge Grade A cargo, all openings in the top of the tanks, except the branch vent lines and covers to ullage hole

sounding pipes, are tightly closed. (See §§ 32.20-20 and 32.55-20 of this subchapter.)

(l) On tankships the construction or conversion of which is started on or after July 1, 1951, which are to load or discharge Grade A cargo, the method for determining the liquid level in the tank without opening ullage holes, cargo hatches or Butterworth plates is in proper order. (See § 32.20-20 of this subchapter.)

§ 35.35-25 Approval to start transfer of cargo—TB/ALL.

When the senior deck officer on duty has assured himself that the requirements of §§ 35.35-20 and 35.35-30 have been met, he may give his approval to start operations.

§ 35.35-30 "Declaration of Inspection" for tankships—T/ALL.

After completing the inspection required by § 35.35-20 and prior to giving his approval to start the cargo transfer operation, the master or senior deck officer on duty shall fill in the following Declaration of Inspection in duplicate. The original of the Declaration of Inspection shall be kept aboard for the information of authorized persons. The duplicate, where required, shall be handed to the terminal superintendent or his representative, who shall on demand be given the opportunity to satisfy himself that the condition of the vessel is as stated in the Declaration of Inspection.

DECLARATION OF INSPECTION PRIOR TO BULK CARGO TRANSFER

Date -----
S ----- Port of -----

I, -----, being the master or senior deck officer in charge of the transfer of bulk flammable and combustible cargo about to be undertaken, do certify that I have personally inspected this vessel with reference to the following requirements set forth in § 35.35-20 and that opposite each of them I have indicated that the regulations have been complied with.

- (1) Are warnings displayed as required?
- (2) Is there any repair work in way of cargo spaces being carried on for which permission has not been given?
- (3) Have cargo connections been properly made and are cargo valves properly set?
- (4) Have all cargo connections for loading Grades A, B, and C cargoes been made to vessel's pipelines?
- (5) Are there any fires or open flames present on the deck or in any compartment which is located on, facing, open and adjacent to the main deck of the vessel on which the cargo connections have been made?
- (6) Has the shore terminal or other tank vessel concerned reported itself in readiness for transfer of cargo?
- (7) Are sea valves connected to the cargo system closed?
- (8) If Grades A, B, and C cargoes are to be loaded and boiler fires are lighted, has an inspection been made to determine that they may be operated with reasonable safety?
- (9) If Grades A, B, and C cargoes are to be loaded and galley fires are lighted, has an inspection been made to determine that they may be operated with reasonable safety?
- (10) If Grades A, B, and C cargoes are to be loaded, has an inspection been made to determine whether smoking is to be permitted?

(11) If smoking is to be permitted, have spaces been designated for this purpose?

§ 35.35-35 Duties of senior deck officer during transfer operations—TB/ALL.

The senior deck officer on duty shall control the operations as follows:

- (a) Supervise the operations of cargo system valves.
- (b) Start transfer of cargo slowly.
- (c) Observe cargo connections for leakage.
- (d) Observe operating pressure on cargo system.
- (e) Observe rate of loading for the purpose of avoiding overflow of tanks.

§ 35.35-40 Conditions under which transfer operations shall not be commenced or if started shall be discontinued—TB/ALL.

Cargo transfer operations shall not be started or, if started, shall be discontinued under the following conditions:

- (a) During severe electrical storms.
- (b) If a fire occurs on the wharf or on the tanker or in the vicinity.

§ 35.35-42 Restrictions on vessel coming alongside a tank vessel while loading Grade A, B, or C cargo—TB/ALL.

(a) No vessel shall come alongside or remain alongside a tank vessel in way of its cargo tanks while it is loading Grade A, B or C cargo without having the permission of the officer-in-charge of the vessel which is loading.

(b) No vessel shall come alongside or remain alongside a tank vessel in way of its cargo tanks while it is loading Grade A, B or C cargo unless the conditions then prevailing are mutually acceptable to the officers-in-charge of cargo handling on both vessels.

§ 35.35-45 Auxiliary steam, air, or electric current—B/ALL.

When discharging cargo from one or more barges, the towing vessel may furnish steam, air, or electric current for pumps on barges or dock, but in no case shall the cargo pass through or over the towing vessel.

§ 35.35-50 Termination of transfer operations—TB/ALL.

(a) When transfer operations are completed the valves on cargo connections on the vessel shall be closed. The cargo connections shall be drained of cargo.

§ 35.35-55 Transfer of other cargo or stores on tank vessels—TB/ALL.

(a) Package goods, freight, and ships' stores shall not be loaded or discharged during the loading of Grade A, B, or C products except by permission of the senior deck officer on duty. Explosives as cargo shall not be loaded or carried on any tank vessel containing Grade A, B, or C cargo.

(b) Where package and general cargo is carried directly over bulk cargo tanks, it shall be properly dunnaged to prevent chafing of metal parts and securely lashed or stowed.

§ 35.35-60 Transportation of other cargo or stores on tank barges—B/ALL.

(a) Tank barges may be permitted to transport deck cargoes directly over bulk cargo spaces when the nature of such deck cargoes and the methods of loading and unloading same do not create an undue hazard. Such tank barges shall have their decks properly dunnaged to prevent chafing between the steel parts of the vessel and the deck cargo.

§ 35.35-70 Maintenance of cargo handling equipment—TB/ALL.

The cargo handling equipment shall be maintained by the tank vessel's personnel in accordance with the regulations in this subchapter, including the following:

(a) Cargo hose shall not be used in transfer operations in which the pressures are such that leakage of cargo occurs through the body of the hose.

(b) Cargo pump relief valves shall be tested at least once each year to determine that they function satisfactorily at the pressure at which they are set to open.

(c) Cargo pump pressure gage shall be tested at least once a year for accuracy.

(d) The cargo discharge piping of all tank vessels shall be tested at least once each year for tightness, at the maximum working pressure.

§ 35.35-75 Emergencies—TB/ALL.

In case of emergencies nothing in the regulations in this subchapter shall be construed as preventing the senior officer present from pursuing the most effective action in his judgment for rectifying the conditions causing the emergency.

Subpart 35.40—Marking of Fire and Emergency Equipment

§ 35.40-1 General alarm contact maker—TB/ALL.

Each general alarm bell contact maker located as required in § 32.25-1(b) shall be marked with lettering on a corrosion-resistant plate, or with a sign in red letters on a suitable background with the words "GENERAL ALARM."

§ 35.40-5 General alarm bells—TB/ALL.

General alarm bells shall be marked in not less than 1/2-inch red letters: "General Alarm—When Bell Rings Go to Your Station."

§ 35.40-6 Emergency lights—TB/ALL.

(a) All emergency lights shall be marked with a letter "E" at least 1/2 inch high.

§ 35.40-7 Carbon dioxide alarm—T/ALL.

Adjacent to all carbon dioxide fire extinguishing alarms installed after November 19, 1952, there shall be conspicuously marked: "WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED."

§ 35.40-10 Steam, foam, or CO₂ fire smothering apparatus—TB/ALL.

Steam, foam or CO₂ fire smothering apparatus shall be marked "STEAM FIRE APPARATUS" or "FOAM FIRE APPARATUS" or "CO₂ FIRE APPARATUS," as appropriate, in not less than 2-inch red letters. The valves of all branch pipes leading to the several compartments shall be distinctly marked to indicate the compartments or parts of the vessel to which they lead.

§ 35.40-15 Fire hose stations—TB/ALL.

At each fire hose valve there shall be marked in not less than 2-inch red letters and figures "FIRE STATION 1," 2, 3, etc.

§ 35.40-17 Foam hose/monitor stations—T/ALL.

(a) At each required foam hose/monitor valve there shall be marked in not less than 2-inch red letters and figures: "FOAM STATION 1," 2, 3, etc.

§ 35.40-18 Water spray systems—TB/ALL.

(a) Water spray system apparatus shall be marked: "WATER SPRAY SYSTEM," as appropriate, in not less than 2-inch red letters.

(b) The control valve, and its control if located remotely, shall be distinctly marked to indicate the compartment protected.

§ 35.40-20 Emergency equipment—TB/ALL.

Lockers or spaces where emergency equipment is stowed shall be marked: "EMERGENCY EQUIPMENT" or "FRESH AIR BREATHING APPARATUS" as appropriate.

§ 35.40-25 Fire extinguishers—TB/ALL.

Each fire extinguisher shall be marked with a number and the location where stowed shall be marked in corresponding numbers in at least ½ inch figures.

§ 35.40-30 Instructions for changing steering gear—TB/ALL.

Instructions in at least ½ inch letters and figures shall be posted in the steering engineroom, relating in order, the different steps to be taken in changing to the emergency steering gear. Each clutch, gear wheel, lever, valve or switch which is used during the changeover shall be numbered or lettered on a brass plate or painted so that the markings can be recognized at a reasonable distance. The instructions shall indicate each clutch or pin to be "in" or "out" and each valve or switch which is to be "opened" or "closed" in shifting to any means of steering for which the vessel is equipped. Instructions shall be included to line up all steering wheels and rudder amidship before changing gears.

§ 35.40-35 Rudder orders—TB/ALL.

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

§ 35.40-40 Vessel's name on equipment—TB/ALL.

(a) The equipment of all tank vessels, such as fire hose, fire axes, lifeboats, life rafts, life preservers and buoyant apparatus, shall be painted or branded with the name of the vessel upon which they are used, except that inflatable liferafts shall be marked in accordance with § 33.25-10.

(b) For vessels on an international voyage, in addition to other markings required, the port of registry of the vessel shall be marked on all lifeboats, rigid liferafts, buoyant apparatus, and ring life buoys. On lifeboats, the name of the vessel and the port of registry shall be marked on each side of the bow.

Subpart 35.70—Power-Operated Industrial Trucks

§ 35.70-1 Application—TB/ALL.

(a) Power-operated industrial trucks.

(1) Power-operated industrial trucks when carried on board vessels as part of the vessel's equipment for handling materials of any kind shall be in compliance with the applicable provisions of this subpart.

(2) Power-operated industrial trucks placed on board vessels for handling materials of any kind shall be in compliance with the applicable provisions of this subpart when such vessels are within the navigable waters of the United States, its territories and possessions but not including the Panama Canal Zone.

(b) Vessels. (1) Vessels shall be in compliance with the applicable provisions of this Subpart during those periods of time when power-operated industrial trucks are on board as a part of the vessel's equipment or when such trucks are placed on board for handling materials of any kind.

Note: As set forth in § 30.01-5(e), the regulations in this subpart are also applicable to foreign flag tank vessels.

§ 35.70-3 Alternates—TB/ALL.

(a) In cases of undue hardship resulting from unavoidable delays in bringing existing power-operated industrial trucks into compliance with the applicable provisions of this subpart, the Commandant may permit the use of alternate equipment, apparatus, or arrangement for such period of time, and to such extent, and upon such conditions as will assure, to the Commandant's satisfaction, a degree of safety consistent with the minimum standards as set forth in this subpart.

(b) The methods and procedures adopted in connection with the modification of existing equipment to meet required laboratory designations will be taken into consideration in granting permission to use alternate arrangements for a limited period of time.

§ 35.70-5 Definitions of terms used in subpart—TB/ALL.

(a) Power-operated industrial trucks are considered to be tractors, lift trucks and other specialized industrial trucks used for material handling on board a vessel.

(b) For the purposes of the regulations in this subpart, the words "flammable" and "inflammable" are interchangeable or synonymous terms.

§ 35.70-7 Approved power-operated industrial trucks—TB/ALL.

(a) Where approved power-operated industrial trucks are required by the regulations in this subchapter, such approved trucks shall have a specific designation of a recognized testing laboratory except in case of trucks powered by compressed air. The following laboratories are recognized for the specific type designations listed:

(1) Underwriters' Laboratories, Inc. (Mailing address, P.O. Box 247, Northbrook, Ill., 60062) for trucks having recognized testing laboratory type designations E, EE, EX, G, GS, LP, LPS, D, and DS.

(2) Factory Mutual Laboratories, Engineering Division, 1115 Boston-Providence Turnpike, Norwood, Mass., 02062, for trucks having recognized testing laboratory type designations E, EE, EX, G, GS, LP, LPS, D, and DS.

(b) Trucks powered by compressed air which is received through a flexible hose from a fixed source and having the air supply hose of the grounded type shall be considered of the approved type for purposes of this subpart.

(c) Description of recognized testing laboratory type designations are as follows:

(1) The "E" designated units are electrically powered units that have minimum acceptable safeguards against inherent fire hazards.

(2) The "EE" designated units are electrically powered units that have, in addition to all of the requirements for the "E" units, the electric motors and all other electrical equipment completely enclosed. In certain locations the "EE" unit may be used where the use of an "E" unit may not be considered safe.

(3) The "EX" designated units are electrically powered units that differ from the "E" and "EE" units in that the electrical fittings and equipment are so designed constructed and assembled that the units may be used in certain atmospheres containing flammable vapors or dusts.

(4) The "G" designated units are gasoline powered units having minimum acceptable safeguards against inherent fire hazards.

(5) The "GS" designated units are gasoline powered units that are provided with additional safeguards to the exhaust, fuel and electrical systems. They may be used in some locations where the use of a "G" unit may not be considered safe.

(6) The "LP" designated units are similar to the "G" units except that they are liquefied petroleum gas engine powered instead of gasoline powered.

(7) The "LPS" designated units are units similar to the "GS" units except that liquefied petroleum gas is used for fuel instead of gasoline.

(8) The "D" designated units are units similar to the "G" units except that they are diesel engine powered instead of gasoline engine powered.

(9) The "DS" designated units are diesel powered units that are provided with additional safeguards to the exhaust, fuel and electrical systems. They may be used in some locations where a "D" unit may not be considered safe.

(d) In addition to the construction and design safety features required in order to obtain a recognized laboratory type designation, approved power-operated industrial trucks shall have at least the following minimum safety features where applicable.

(1) Power-operated industrial trucks shall be equipped with a warning horn, whistle, or gong, or other device that can be heard clearly above the normal shipboard noises.

(2) Wherever power-operated industrial truck operation exposes the operator to danger from falling objects, the truck shall be equipped with a driver's overhead guard. Where overall height of the truck with forks in the lowered position is limited by head room conditions the overhead guard may be omitted.

NOTE: This overhead guard is only intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application. It is impractical to build a guard of sufficient strength to withstand the impact of a capacity load since such a guard would constitute a safety hazard because its structure would be so large that it might interfere with good visibility and would weigh so much that it might make the truck top-heavy and unstable.

(3) Power-operated fork lift trucks which handle small objects or unstable loads shall be equipped with a vertical load back rest or rack which shall have height, width and strength sufficient to prevent the load, or part of it, from falling toward the mast when the mast is in a position of maximum backward tilt.

(4) The forks on power-operated fork lift trucks shall be secured to the carriage so that unintentional lifting of the toe shall not occur on such application where this lifting may create a hazard. The factor of safety of forks shall be at least 3 to 1, based on the elastic limit of the material.

(5) Fork extensions or other attachments shall be suitably secured to prevent unintentional lifting or displacement on primary forks.

(6) All exposed wheels shall be provided with guards to prevent the wheels from throwing particles at the operator.

(7) Unless the steering mechanism is of a type that prevents road reactions from causing the steering handwheel to spin, the steering knob, if used, shall be of a mushroom type to engage the palm of the operator's hand, or shall be arranged in some other manner to prevent injury. The knob shall be mounted within the perimeter of the wheel.

(8) All steering controls shall be confined within the clearances of the truck, or so guarded that movement of the controls shall not result in injury to the operator when passing obstructions, stanchions, etc.

§ 35.70-10 Permissible areas of use—TB/ALL.

(a) When the area on deck or in the hold in which power-operated industrial trucks are to be used has no bulk cargo vapors when tested but is an area in which such vapors could accumulate, these trucks may be used subject to the following conditions:

(1) Trucks used shall be suitable for type of cargo to be handled in accordance with § 35.70-15.

(2) Trucks used shall be suitable for areas in which vapors could accumulate in accordance with Table 35.70-10(a).

TABLE 35.70-10(a)

Type of truck	Grade of bulk cargo/vapors in vessel			
	A	B	C	D
E.....				
EE.....				
EX.....	A	B	C	D
LP.....		B	C	D
LPS.....		B	C	D
G.....		B	C	D
GS.....		B	C	D
D.....		B	C	D
DS.....		B	C	D
Compressed air.....	A	B	C	D

(b) When a vessel is gas free, any approved truck can be used in any space except for restrictions as to types of cargo handled as specified in § 35.70-15.

§ 35.70-15 Types of cargo permitted to be handled by trucks—TB/ALL.

(a) Power-operated industrial trucks used for handling of packaged petroleum products shall be in accordance with Table 35.70-15(a).

TABLE 35.70-15(a)

Type of truck	Grade of packaged petroleum product			
	A	B	C	D
E.....				
EE.....		B	C	D
EX.....	A	B	C	D
LP.....		B	C	D
LPS.....		B	C	D
G.....		B	C	D
GS.....		B	C	D
D.....		B	C	D
DS.....		B	C	D
Compressed air.....	A	B	C	D

(b) Where dry cargo other than packaged petroleum products is to be handled by power-operated industrial trucks on board a tank vessel, types of trucks used shall be in accordance with § 97.70-10 of Subchapter I (Rules and Regulations for Cargo and Miscellaneous Vessels) of this Chapter, except that all trucks shall be approved.

(c) The use of power-operated industrial trucks may be further restricted due to bulk cargo and/or vapors as set forth in Table 35.70-10(a).

§ 35.70-20 Special operating conditions—TB/ALL.

(a) Permission shall be obtained from the senior deck officer on board before placing power-operated industrial trucks in operation on a tank vessel.

(b) The senior deck officer shall ascertain by portable carbon monoxide and explosive vapor meters, if necessary, that no hazardous gas concentrations exist

before granting permission to operate power trucks.

(c) When power-operated industrial trucks are in use on board vessels subject to the regulations in this subchapter, they shall be in a safe operating condition.

(d) Spaces exposed to carbon monoxide or other hazardous vapors from the exhausts of power-operated industrial trucks shall have adequate ventilation. The concentration of carbon monoxide shall be kept below 100 parts per million in the holds and intermediate decks where persons are working. When necessary, portable blowers of adequate size and location shall be utilized.

(e) The parts and/or equipment of any power-operated industrial truck requiring replacement shall be replaced only by parts and/or equipment equivalent in safety when installed with those used in the original design.

(f) Any truck that emits sparks or flames from the exhaust system shall immediately be removed from service, and not again returned to service until the cause for the emission of such sparks or flames has been eliminated.

(g) When the temperature of any part of the truck is found to be in excess of a safe operating temperature, the truck shall be removed from service until such overheating has been corrected.

(h) Operation of trucks shall be halted immediately and the engines or motors secured, whenever an emergency condition arises aboard the vessel.

(i) Operation of trucks shall be halted immediately and the engines or motors secured in the event of breakage or leakage of containers used for the carriage of flammable liquids, flammable solids or oxidizing materials.

(j) The rated capacity of a truck shall at all times be posted on the truck in a conspicuous place and such capacity shall not be exceeded.

(k) At least one approved 2-pound dry chemical hand portable fire extinguisher, or its approved equivalent, shall be affixed to the truck in a readily accessible position or kept in close proximity available for immediate use.

(l) Vessel's fire-fighting equipment, both fixed (where installed) and portable, in vicinity of space being worked shall be kept ready for immediate use.

§ 35.70-25 Refueling—TB/ALL.

(a) When permitted. Power-operated industrial trucks are not permitted to be refueled in the hold of a vessel or on the weather deck except under the following conditions:

(1) Trucks using gasoline as fuel may be refueled in the hold or on the weather deck of a vessel only when such refueling is done with an acceptable portable non-spilling fuel handling system of not over 5 gallons capacity. Transfer of gasoline to these portable non-spilling fuel handling devices is not permitted on board the vessel.

(2) Power-operated industrial trucks using liquefied petroleum gas as fuel may be refueled in the hold or on the

weather deck of a vessel only when fitted with removable tanks and provided the hand-operated shutoff valve of the depleted tank is closed and the engine is run until it stalls from lack of fuel before the quick disconnect fitting is opened. In addition, the quick disconnect fitting shall be attached to the fuel tank before the hand-operated shutoff valve is reopened.

(3) Power-operated industrial trucks using diesel oil as fuel may be refueled on the weather deck or in the hold of a vessel by means of portable containers of not over 5-gallon capacity. These trucks may also be refueled on the weather deck of a vessel or portable containers refilled from a larger container provided a suitable pump is used for the transfer operation and a drip pan of adequate size is supplied.

(b) *General requirements.* The following conditions must be met when refueling power-operated industrial trucks in the hold of a vessel or on the weather deck under the circumstances listed in paragraph (a) of this section:

(1) Refueling shall be under the direct supervision of an experienced and responsible person specifically designated for such job by the person in charge of the loading or unloading of the vessel.

(2) No refueling shall be undertaken with less than 2 persons specifically assigned and present for the complete operation, at least one of whom shall be experienced in using the portable fire extinguishers required in the fueling area.

(3) At least one approved 4-pound dry chemical hand portable fire extinguisher, or its approved equivalent shall be provided at the scene of the fueling area. This is in addition to the portable extinguisher affixed to the truck in accordance with § 35.70-20(k).

(4) The location for refueling trucks shall be designated by the master or senior deck officer on board the vessel. "No Smoking" signs shall be posted in the area and smoking shall be prohibited.

(5) The location designated for refueling shall be adequately ventilated so as to insure against accumulation of a hazardous concentration of vapors. The ventilation requirements of § 35.70-20 (d) when trucks are operating shall also apply when trucks are being refueled.

(6) Truck engines of all trucks in the same hold shall be stopped before any truck in that hold is refueled and before any fuel handling devices or unmounted liquefied petroleum gas cylinders are placed in the hold.

(7) All fuel handling devices and unmounted liquefied petroleum gas containers shall be removed from the hold before any truck engine is started and the trucks again placed in operation.

§ 35.70-30 Charging or replacing batteries—TB/ALL.

(a) Battery charging or battery replacement on electric powered trucks shall not be accomplished on board the vessel in locations where vapors from Grades "A," "B," "C," or "D" cargo could accumulate.

(b) Locations on board vessel for battery charging or replacement shall be designated by the master of the vessel.

(c) Battery charging on board vessel shall be accomplished in accordance with the following provisions:

(1) The batteries shall be housed in a suitable, ventilated, portable metal container with a suitable outlet at the top for connection of a portable air hose, or shall be placed directly beneath a suitable metal hood with a suitable outlet at the top for connection of a portable air hose. The air hose shall be permanently connected to an exhaust duct leading to the open deck and terminate in a gooseneck or other suitable weather head. If natural ventilation is not practicable or adequate, mechanical means of exhaust shall be employed in conjunction with the duct. The air outlet on the battery container shall be equipped with an interlock switch so arranged that the charging of the battery cannot take place unless the air hose is properly connected to the box.

(2) If mechanical ventilation is used, an additional interlock shall be provided between the fan and the charging circuit so that the fan must be in operation in order to complete the charging circuit for operation. It is preferable that this interlock switch be of a centrifugal type driven by the fan shaft.

(3) The charging facilities may be part of the truck equipment or may be separate from the truck and located inside or outside the cargo hold. The supply or charging circuit (whichever method is used) shall be connected to the truck by a portable plug connection of the break-away type. This portable plug shall be so engaged with the truck battery charging outlet that any movement of the truck away from the charging station will break the connection between the plug and receptacle without exposing any live parts to contact with a conducting surface or object, and without the plug falling to the deck where it may become subject to injury.

(d) Suitable materials handling equipment shall be employed and adequate precautions taken to avoid damaging or short circuiting batteries and to avoid spillage of electrolyte.

(e) All unmounted batteries shall be removed from the hold where trucks will be operated before such operation commences.

§ 35.70-35 Stowage of trucks aboard a vessel—TB/ALL.

(a) Power-operated industrial trucks may be stowed in any location aboard a vessel provided the following conditions are met:

(1) Gasoline powered trucks shall have all the fuel expended from the system.

(2) Liquefied petroleum gas powered trucks shall have the fuel tanks removed and all the fuel expended from the system.

(b) Power-operated industrial trucks not meeting the conditions set forth in paragraph (a) of this section shall be stowed on the open deck except for intervals such as lunch hours, between

work shifts, interdock and intraport movements. If stowed in a fixed metal enclosure located on or above the weather deck, such enclosure shall have access from the weather deck only and shall have adequate ventilation, so arranged as to remove vapors from both the upper and lower portions of the space.

PART 36—ELEVATED TEMPERATURE CARGOES

Subpart 36.01—General

Sec.
36.01-1 Scope of regulations—TB/ALL.
36.01-5 Certificate of inspection—TB/ALL.

Subpart 36.05—Cargo Tanks

36.05-1 Installation of cargo tanks—TB/ALL.
36.05-10 Protection of personnel—TB/ALL.

Subpart 36.10—Piping, Valves, Fittings, and Accessory Equipment

36.10-1 Cargo pump relief valves—TB/ALL.

Subpart 36.20—Vents and Ventilation

36.20-1 Flame screens—TB/ALL.
36.20-5 Ventilation of pumphouse—TB/ALL.

Subpart 36.30—Periodic Inspections

36.30-1 Lagged tanks—TB/ALL.

AUTHORITY: The provisions of this Part 36 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply R.S. 4488, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 481, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026; 167-38, Oct. 26, 1959, 24 F.R. 8857, unless otherwise noted.

Subpart 36.01—General

§ 36.01-1 Scope of regulations—TB/ALL.

(a) The regulations in this part contain requirements for the transportation in bulk of materials considered to be Grade E liquids when shipped in molten form at elevated temperatures.

(b) The materials covered by this part shall meet the applicable regulations of this subchapter, except that materials having a flash point of 300° F. or above, shall be exempt from the requirements prescribed in the following sections of this subchapter:

(1) Inspection prior to making repairs—§ 35.01-1(b).
(2) Watchman for a tank vessel—§ 35.05-15.

(3) Warning sign at gangway—§ 35.30-1(b).

(4) Cargo tank hatches, ullage holes and Butterworth plates—§ 35.30-10.

(5) Men on duty—§ 35.35-1.

(6) Inspection prior to transfer of cargo—§ 35.35-20.

(7) Approval to start transfer of cargo—§ 35.35-25.

(8) "Declaration of inspection" for tank ships—§ 35.35-30.

(9) Transportation of other cargo or stores on tank barges—§ 35.35-60.

(c) The regulations governing the transportation in the solid state of materials referred to in § 36.01-1(a) are

contained in Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

§ 36.01-5 Certificate of inspection—TB/ALL.

(a) The certificate of inspection shall be endorsed for the carriage of elevated temperature cargoes as follows: "Inspected and approved for the carriage of Grade E combustible liquids when transported in molten form at elevated temperatures."

(R.S. 4421, as amended; 46 U.S.C. 339)

Subpart 36.05—Cargo Tanks

§ 36.05-1 Installation of cargo tanks—TB/ALL.

(a) All cargo tanks carrying liquids at elevated temperatures for the purpose of maintaining the material in the molten form shall be installed with the access openings located above the weather deck.

§ 36.05-10 Protection of personnel—TB/ALL.

(a) Decks, bulkheads, or other structure shall be insulated with an approved incombustible material, or other suitable means of protection shall be employed where practicable and necessary for the protection of personnel.

Subpart 36.10—Piping, Valves, Fittings, and Accessory Equipment

§ 36.10-1 Cargo pump relief valves—TB/ALL.

(a) Cargo pump relief valves and pressure gages may be omitted, however a suitable device shall be fitted to stop the pumping before the designed pressure of the piping is exceeded.

Subpart 36.20—Vents and Ventilation

§ 36.20-1 Flame screens—TB/ALL.

(a) Flame screens may be omitted in the vent lines on cargo tanks.

§ 36.20-5 Ventilation of pumproom—TB/ALL.

(a) Where personnel are required to enter pumprooms located below the weather deck under normal circumstances of handling cargo, such pumprooms shall be equipped with power ventilation.

Subpart 36.30—Periodic Inspections

§ 36.30-1 Lagged tanks—TB/ALL.

(a) Lagged tanks shall have part of the lagging removed on the lower portion of the cargo tanks as directed by the marine inspector, at least once every eight years for external examination.

PART 38—LIQUEFIED FLAMMABLE GASES

Subpart 38.01—General

- Sec.
- 38.01-1 Scope of regulations—TB/ALL.
- 38.01-2 Transportation of portable cylinders or portable tanks containing or having previously contained liquefied flammable gases in dry cargo spaces—TB/ALL.
- 38.01-5 Certificate of inspection—TB/ALL.

Subpart 38.05—Design and Installation of Cargo Tanks

- Sec.
- 38.05-1 Design and construction—TB/ALL.
- 38.05-5 Markings—TB/ALL.
- 38.05-10 Installation of cargo tanks—TB/ALL.
- 38.05-15 Cargo tanks on barges—B/ALL.
- 38.05-20 Lagging—TB/ALL.
- 38.05-25 Refrigerated systems—TB/ALL.

Subpart 38.10—Piping, Valves, Fittings and Accessory Equipment

- 38.10-1 Valves, fittings and accessories—TB/ALL.
- 38.10-5 Filling and discharge pipes—TB/ALL.
- 38.10-10 Cargo piping—TB/ALL.
- 38.10-15 Safety relief valves—TB/ALL.
- 38.10-20 Liquid level gaging devices—TB/ALL.

Subpart 38.15—Special Cargo Handling Requirements

- 38.15-1 Filling densities—TB/ALL.
- 38.15-5 Cargo hose—TB/ALL.

Subpart 38.20—Venting and Ventilation

- 38.20-1 Venting—T/ALL.
- 38.20-5 Venting—B/ALL.

Subpart 38.25—Periodic Tests and Inspections

- 38.25-1 Tests and inspections—TB/ALL.
- 38.25-5 Removal of defective tanks—TB/ALL.
- 38.25-10 Safety valves—TB/ALL.

AUTHORITY: The provisions of this Part 38 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply sec. 3, 68 Stat. 675; 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026, unless otherwise noted.

Subpart 38.01—General

§ 38.01-1 Scope of regulations—TB/ALL.

(a) The regulations in this part contain requirements for the transportation of liquefied flammable gases in bulk in fixed pressure-vessel types of cargo tanks vented above 10 pounds per square inch gage except as otherwise provided for in paragraphs (b), (c) and (d) of this section.

(b) When liquefied flammable gases in bulk are transported in cargo tanks vented at 10 pounds per square inch gage or below, the Commandant may permit the use of alternate methods of storage if it is shown to his satisfaction that a degree of safety is obtained consistent with the minimum requirements of this part.

(c) The regulations in this part apply specifically to the carriage of those commodities defined as liquefied flammable gases and which have no significant hazard other than flammability. Additional safeguards may be necessary for liquefied flammable gases having other significant hazardous characteristics.

(d) The transportation "on deck" of liquefied flammable gases in portable cylinders and tanks and the transportation of empty cylinders and portable tanks previously used shall be in accordance with the requirements of Part 146 of Subchapter N (Dangerous Car-

goes) of this chapter. The transportation of such containers "under deck" shall be in accordance with the requirements of § 38.01-2.

§ 38.01-2 Transportation of portable cylinders or portable tanks containing or having previously contained liquefied flammable gases in dry cargo spaces—TB/ALL.

(a) ICC cylinders, ICC Specification portable tanks, or other approved portable tanks containing liquefied flammable gases may be transported under deck, provided the following requirements are met:

(1) The cargo space shall be provided with efficient means of ventilation, be protected from artificial heat, and be readily accessible from hatches.

(2) Containers shall be stored in such a position that the safety relief device is in communication with the vapor space of the container. They shall be properly stowed, dunnaged and secured to prevent movement in any direction.

(3) Unless a method acceptable to the Commandant is used, the containers shall not be over-stowed in the same dry cargo space with other liquefied flammable gas containers, nor with other cargo.

(4) The containers shall be suitably protected against physical damage from other cargo, ship's stores, or equipment in such spaces.

(5) Cylinders shall have their valves protected at all times by one of the following methods:

(i) By metal caps securely attached to the cylinders and of sufficient strength to protect valve from injury.

(ii) By having the valves recessed into the cylinders or otherwise protected so that they will not be subject to a blow if the cylinder is dropped on a flat surface.

(6) Portable tanks shall have their valves protected at all times by a housing in accordance with the requirements under which they were manufactured.

(7) Electrical circuits in such cargo spaces shall meet the requirements of § 111.60-40 in Subchapter J (Electrical Engineering) of this chapter. If the electrical circuit does not meet such requirements, it must be de-energized by a positive means and not re-energized until the cargo has been removed and the space has been tested and found free of flammable vapor.

(8) During the stowage of portable cylinders or portable tanks in a hold or compartment, that is not fitted with electrical fixtures meeting the requirements of § 111.60-40, no means of artificial lighting shall be used within the space unless such equipment is of the explosionproof type. Electrical connections for portable lights shall be made from outlets on the weather deck. Hand flashlights used in the stowage area shall be of an approved type.

(9) The following dangerous cargoes shall not be stowed in the same hold or compartment with liquefied flammable gas containers:

- (i) Class A, B, or C explosives.
- (ii) Flammable solids.

- (iii) Oxidizing materials.
- (iv) Corrosive liquids.
- (v) Poisonous articles.
- (vi) Cotton and similar fibrous materials.

(R.S. 4472, as amended, 4488, as amended, 46 U.S.C. 170, 481. Treasury Dept. Order 167-38, Oct. 26, 1959, 24 F.R. 8857)

§ 38.01-5 Certificate of inspection—TB/ALL.

(a) The certificate of inspection shall be endorsed for the carriage of liquefied flammable gases as follows:

Inspected and approved for the carriage of liquefied flammable gases (1) at a pressure not to exceed ----- p.s.i. (the design pressure of the container) and (2) at temperatures not less than ---° F. and not to exceed ---° F. (Tanks approved to carry cargoes at either below or above ambient temperatures shall have the applicable limiting temperatures indicated on the certificate. Tanks designed to carry cargoes only at ambient temperatures should have the word "ambient" entered in these spaces.)

(R.S. 4421, as amended; 46 U.S.C. 399)

Subpart 38.05—Design and Installation of Cargo Tanks

§ 38.05-1 Design and construction—TB/ALL.

(a) The liquefied flammable gas tanks shall meet the requirements for Class I or Class II arc welded unfired pressure vessels, and shall be fabricated, inspected, and tested in accordance with the applicable requirements of Subchapter F (Marine Engineering) of this chapter, except as otherwise provided for in this part. In the design of the tank, consideration shall be given to the possibility of the tank being subjected to external loads. Consideration shall also be given to excessive loads that can be imposed on the tanks by their support due to static and dynamic forces under operating conditions or during testing. The design shall show the manner in which the tanks are to be installed, supported, and secured, and shall be approved prior to installation.

(b) Unlagged liquefied flammable gas tanks, where the cargo is transported, at or near ambient temperatures, shall be designed for a pressure of the gas at 115° F. or for the vapor pressure of the gas at the temperature of the surrounding cargo if higher than 115° F. The design shall also be based on the minimum internal pressure (maximum vacuum), plus the maximum external static head to which the tank may be subjected. Whenever surrounding cargo is at a greater temperature than the design temperature of the liquefied flammable gas tanks, the liquefied flammable gas cargo is to be such that the design pressure of the liquefied flammable gas tank is not exceeded.

(c) Where liquefied flammable gas tanks, in which the cargo is transported at or near ambient temperature, are lagged with an insulation material of a thickness to provide a thermal conductance of not more than 0.075 B.t.u. per square foot per degree Fahrenheit differential in temperature per hour, the tanks shall be designed for a pressure of

not less than the vapor pressure of the gas at 105° F. The insulation material shall conform to the requirements of § 38.05-20. The design shall also be based on the minimum internal pressure (maximum vacuum) plus the maximum external static head to which the tank may be subjected.

(d) The refrigerated cargo tank requirements are:

(1) Liquefied flammable gas tanks in which the temperature is maintained below the normal atmospheric temperature by refrigeration or other acceptable means, shall be designed for a pressure of not less than 110 percent of the vapor pressure corresponding to the temperature of the liquid at which the system is maintained or the pressure corresponding to greatest dynamic or static loads expected to be encountered in service or during testing, whichever is greater. The material of the tank shall be approved by the Commandant for the minimum operating cargo temperature and this temperature shall be permanently marked on the tank as prescribed in § 38.05-5.

(2) If the tank is vented at 10 pounds per square inch gage or below, the unfired pressure vessel requirements as specified in paragraph (a) of this section do not apply. However, the requirements of § 38.01-1(b) shall apply.

(e) The shell and head thickness of liquefied flammable gas tanks shall not be less than $\frac{3}{16}$ -inch.

(f) Each liquefied flammable gas tank shall be provided with not less than a 15-inch by 23-inch or an 18-inch diameter manhole fitted with a cover located above the maximum liquid level and as close to the top of the tank as possible. Where access trunks are fitted to the tanks, the nominal diameter of the trunks shall be not less than 30 inches.

(g) Provision shall be made for electric bonding tanks and piping.

(R.S. 4433, as amended; 46 U.S.C. 411)

§ 38.05-5 Markings—TB/ALL.

(a) Upon satisfactory completion of tests and inspection, the following marking, at least $\frac{3}{16}$ inch high, shall be stamped into a non-corrodible nameplate permanently attached to the tank:

 (Name and address of manufacturer) -----
 ----- p.s.i.
 (Design pressure) -----
 ----- p.s.i.
 (Shop test pressure) -----
 ----- ° F.
 (Minimum allowable cargo temperature) (Applicable to refrigerated cargo only) -----
 (Inspector's No.) (Initials and CG symbol) -----

 (Manufacturer's Serial No.) -----

 (Date of manufacture) -----

 (Water capacity, U.S. gallons) -----

(b) All tank inlet and outlet connections, except safety relief valves, liquid level gaging devices, and pressure gages, shall be labeled to designate whether they terminate in the vapor or liquid

space. Labels of corrosion-resistant material may be attached to valves.

(c) All tank markings shall be permanently and legibly stamped in a readily visible position, and shall not be obscured by painting. If the tanks are lagged, the markings attached to the tank proper shall be duplicated on a corrosion-resistant plate secured to the outside jacket of the lagging.

§ 38.05-10 Installation of cargo tanks—TB/ALL.

(a) Liquefied flammable gas tanks shall be independent of the hull and shall be so arranged as to provide a minimum clearance of not less than 24 inches from the vessel's side and not less than 15 inches from the vessel's bottom to provide access for inspection. Reduced clearances will be considered by the Commandant in special cases if adequate safeguards can be demonstrated to protect against tank damage in the event of collision or grounding. Where more than one tank is installed, the distance between such tanks and between tanks and vessel's structure shall be adequate to permit access for inspection and maintenance of all tank surfaces and hull structure as approved by the Commandant. Alternate provisions may be made for moving such tanks to provide for adequate inspection and maintenance of the vessel's structure and tanks.

(b) The conditions regarding installation are:

(1) Liquefied flammable gas tanks may be located in cargo tanks or in other spaces which meet the requirements for cofferdams as defined in § 30.10-13. When liquefied flammable gas tanks are installed in cargo tanks, such cargo tanks may be used simultaneously or separately for the carriage of flammable or combustible liquids up to and including the grade for which the cargo tanks are otherwise certified in accordance with the requirements of this subchapter.

(2) The liquefied flammable gas tanks may be installed "on deck" or "under deck" with the tanks protruding above deck.

(3) Where the liquefied flammable gas tanks are installed in dry cargo holds and a portion of the tank extends above the weather deck, provision shall be made to maintain the weathertightness of the deck. The weathertightness of the upper deck need not be maintained on:

(i) Tankships operating on restricted routes which are sufficiently protected; or,

(ii) Open hopper type barges of acceptable design.

(4) Where the liquefied flammable gas tanks are installed in cargo tanks and a portion of the liquefied flammable gas tanks extend above the weather deck, the penetration shall be made gastight and watertight, and shall be such as to provide full compliance with the structural requirements including testing for the hull and integral tanks. In the application of the requirements for the hydrostatic test of the cargo tanks, the hydrostatic test shall

in no case be less severe than the worst anticipated service condition of the cargo loading. In the design and testing of the independent cargo tanks and integral cargo tanks, consideration shall be given to the possibility of the independent tanks being subjected to external loads.

(c) All liquefied flammable gas tanks shall be installed with the manhole openings located in the open above the weather deck.

(d) Liquefied flammable gas tanks shall be supported on foundations of steel or other suitable material and securely anchored in place to preclude the liquefied flammable gas tanks from shifting when subjected to external forces. Each tank shall be so supported as to prevent the concentration of excessive loads on the supporting portions of the shell or head as prescribed under § 38.05-1(a).

(e) No strength welding employed in the attachment of supports, lugs, fittings, etc., shall be done on tanks that require and have been stress relieved, unless authorized by the Commandant.

§ 38.05-15 Cargo tanks on barges—B/ALL.

(a) Special consideration may be given by the Commandant to the design of liquefied flammable gas tanks forming all or part of the structure of a tank barge where adequate provision is made to prevent damage to tanks in the event of collision or grounding.

(b) Sides of all tank barges shall be fitted with suitable guards as an added precaution against the cargo tanks becoming damaged as a result of collision.

§ 38.05-20 Lagging—TB/ALL.

(a) Where used, the insulation material shall be of an approved type complying with the requirements of Subpart 164.009 of Subchapter Q (Specifications) of this chapter. For low temperature service the insulation shall be specifically approved by the Commandant. When the insulation is in an enclosed space where ignition is precluded by approved means, the insulation may be "self extinguishing" as tested according to ASTM D-1962-59T "Flammability of Plastics, Foam and Sheeting." (This standard may be purchased from the American Society for Testing Materials, 1916 Race Street, Philadelphia, Pa., 19103.)

(b) All insulation shall be of a vapor-proof construction, or have a vapor-proof coating of a fire-retardant material acceptable to the Commandant. Unless the vapor barrier is inherently weather resistant, tanks exposed to the weather shall be fitted with a removable sheet metal jacket of not less than 0.083 inch thick over the vapor-proof coating and flashed around all openings so as to be weathertight. Weather resistant coatings shall have sheet metal over areas subject to mechanical damage.

(R.S. 4488, as amended, 4491, as amended; U.S.C. 481, 489. Treasury Dept. Order 167-38, Oct. 26, 1959, 24 F.R. 8857)

§ 38.05-25 Refrigerated systems—TB/ALL.

(a) When a liquefied flammable gas is carried below atmospheric temperature under the requirements of § 38.05-1 (d) (1) or (2), maintenance of the tank pressure below the design pressure shall be provided by one of the following means:

(1) A refrigeration or liquefaction system which regulates the pressure in the tanks. A standby compressor of a capacity equal to one of the working compressors shall be provided.

(2) A system whereby the vapors are utilized as fuel for shipboard use.

(3) A system allowing the liquefied flammable gas to warm up and increase in pressure. The insulation and tank design pressure shall be adequate to provide for a suitable margin for the operating time and temperatures involved.

(4) Other systems acceptable to the Commandant.

(b) A system whereby the vapors are vented to the atmosphere at sea only may be employed in conjunction with subparagraph (a) (1) of this section.

(c) When the tanks are insulated, the insulation shall conform to the requirements of § 38.05-20.

Subpart 38.10—Piping, Valves, Fittings and Accessory Equipment

§ 38.10-1 Valves, fittings and accessories—TB/ALL.

(a) All valves, flanges, fittings and accessory equipment for operation at atmospheric temperatures shall be of a type suitable for use with liquefied flammable gases, and shall be made of steel or Grade A malleable iron conforming to the requirements of Part 51 of Subchapter F (Marine Engineering) of this chapter: *Provided*, That where the cargo is carried at temperatures below atmospheric the valves, flanges, fittings and accessory equipment shall be of a type and material suitable for use with liquefied flammable gas at the minimum temperature to which they may be subjected, and shall be subject to approval by the Commandant. All valves, flanges, fittings and accessory equipment shall have a pressure rating at operating temperatures not less than the maximum pressure to which they may be subjected. Welded fittings shall be used wherever possible. The number of pipe joints shall be held to a minimum. Screwed joints in the cargo liquid and vapor lines are prohibited.

(b) Valve seat material, packing, gaskets, etc. shall be resistant to the action of the liquefied flammable gas. All flange and manhole cover gaskets shall be compressed asbestos, spiral-wound metal asbestos, metal jacketed asbestos, solid aluminum, corrugated steel, solid steel or iron, or other materials with equal or better resistance to fire exposure.

(c) Each tank shall be provided with the necessary fill and discharge liquid

and vapor shutoff valves, safety relief valve connections, refrigeration connections where necessary, liquid level gaging devices, thermometer well and pressure gage and shall be provided with suitable access for convenient operation. Piping shall enter the cargo tanks above the weather deck except as otherwise permitted in this section. Connections to the tanks shall be protected against mechanical damage and tampering. Other openings in the tanks, except as specifically permitted by the Commandant, are prohibited. Cargo loading and discharge piping may be connected to the tanks below the weather deck, subject to approval by the Commandant, provided:

(1) A remotely controlled quick-closing shutoff valve is flanged to the tank outlet connection. The control mechanism for this valve shall meet the requirements of § 38.10-5(b).

(2) The piping which is below the weather deck shall be joined by welding, except for a flanged connection to the quick-closing shutoff valve and a flanged connection to the cargo pump.

(3) The design and arrangement of this piping, including the flange bolting, shall be such that excessive stresses will not be transmitted to the cargo tank outlet connection or the quick-closing valve, even in the event of abnormal displacement of the piping.

(4) Except for those vessels the design of which permits the exclusion of a weathertight deck over the tanks, the space in which such piping is located shall be accessible only from the weather deck and shall be vented to a safe location above the weather deck.

(d) All connections to tanks, except safety relief valves and liquid level gaging devices, except as provided in § 38.10-20(e), shall have manually operated shutoff valves located as close to the tank as possible. These valves are in addition to those required by § 38.10-5.

(e) Excess flow valves, where required by this section, shall close automatically at the rated flow of vapor or liquid as specified by the manufacturer. The piping, including valves, fittings and appurtenances protected by an excess flow valve, shall have a greater capacity than the rated flow of the excess flow valve.

(f) Liquid level gaging devices which are so constructed that outward flow of tank contents shall not exceed that passed by a No. 54 drill size opening, need not be equipped with excess flow valves.

(g) Pressure gage connections need not be equipped with excess flow valves if the openings are not larger than No. 54 drill size.

(h) Excess flow valves may be designed with a bypass not to exceed a No. 60 drill size opening to allow equalization of pressure.

(i) Suitable valves shall be installed on the cargo headers to relieve the pressure in the liquid and vapor lines to a safe location prior to disconnecting shore lines.

(j) Relief valves shall be fitted in liquid lines which may be subject to excessive pressure caused by liquid full condition and the escape from the relief valves shall be piped to a venting system or to a suitable vapor recovery system. Provision shall be made for the proper venting of all valves, fittings, etc., in which pressure buildup may occur, especially in refrigerated systems, because of an increase in product temperature.

(k) A pressure gage shall be located at the highest practicable point. A thermometer well where installed on the tank proper shall be attached to the shell by welding.

§ 38.10-5 Filling and discharge pipes—TB/ALL.

(a) Filling connection shall be provided with one of the following:

(1) A combination back pressure check valve and excess flow valve; or,
(2) One double or two single back pressure check valves; or,

(3) A positive shutoff valve in conjunction with either an internal back pressure check valve or an internal excess flow valve. This positive shutoff valve may be the one required by § 38.10-1(d).

(b) All other liquid and vapor connections to tanks, except filling connections, safety relief valves, liquid level gaging devices and pressure gages described in § 38.10-1, shall be equipped with automatic excess flow valves; or in lieu thereof, may be fitted with quick-closing shutoff valves of the fail-safe type which, except when necessary for operation of the system, shall remain closed. The control mechanism for the quick-closing shutoff valves shall be provided with a remote control in at least two locations and be of a type acceptable to the Commandant. In addition, such control mechanism shall be equipped with a fusible element designed to melt between 208° F. and 220° F., which will cause the quick-closing shutoff valve to close automatically in case of fire.

(c) The excess flow, quick-closing shutoff, or back pressure check valves shall be located on the inside of the tank or outside where the piping enters the tank. In the latter case, installation shall be made in such a manner that any undue strain will not cause breakage between the tank and excess flow, back pressure check, or internal stop valve.

(d) Where the filling and discharge connections are made through a common nozzle at the tank, and the connection is fitted with a quick-closing shutoff valve as required by paragraph (b) of this section, the back pressure check valve or excess flow valve is not required, provided however, a positive shutoff valve is installed in conjunction with the internal stop valve.

§ 38.10-10 Cargo piping—TB/ALL.

(a) The piping shall be designed for a working pressure of not less than the maximum pressure to which it may be subjected but in no case less than the design pressure of the cargo tanks. In the case of piping on the discharge side of the liquid pumps or vapor compressors, the design pressure shall not be less than the pump or compressor discharge relief valve setting; or, provided the piping is not protected by relief valves, the design pressure shall not be less than the total discharge head of the pump or compressor.

(b) Piping subject to tank pressure shall be seamless drawn steel or electric resistance welded steel. Pipe used in refrigerated tank systems shall be made of a material which is suitable for the minimum temperature to which it may be subjected and acceptable to the Commandant.

NOTE: Present U.S. Coast Guard requirements are that design temperature for materials considered to be suitable is 10° F. below the minimum operating temperature of the system.

(c) Where necessary, provision shall be made for expansion and contraction of piping by means of pipe expansion bends, packless type bellows or corrugated expansion joints. Suitable means shall be provided for controlling the expansion in the piping system. Slip type expansion joints are prohibited.

(d) Piping shall be provided with adequate support to take the weight of the piping off the valves and fittings and to prevent excessive vibration and stresses on tank connections.

§ 38.10-15 Safety relief valves—TB/ALL.

(a) Each tank shall be fitted with, or subject to approval by the Commandant connected to, one or more safety relief valves designed, constructed and flow-tested for capacity in conformance with Subpart 162.018 of Subchapter Q (Specifications) of this chapter.

(b) Each safety relief valve shall be set to start to discharge at a pressure not in excess of the design pressure of the tank.

(c) The safety relief valves shall have a combined relieving capacity sufficient to prevent a rise of pressure in the tank of more than 20 percent above the design pressure of the tank. The minimum rates of discharge of safety relief valves shall not be less than that determined by the following formula:

$$Q = 633,000 \frac{FA^{0.52}}{LC} \sqrt{\frac{ZT}{M}} \quad (1)$$

or

$$Q = FGA^{0.52} \quad (2)$$

where:

Q = Minimum required rate of discharge in cubic feet per minute of air at standard conditions (60° F. and 14.7 p.s.i.a.).

F = Fireproofing credit; F = 1.0, except when an approved fireproofing material of recommended thickness, or a metal screen wall is used, then F = 0.5. The Commandant may give special consideration to a reduction in F when considering the thermal conductance of the insulation and its stability under fire exposure.

M = Molecular weight of the cargo.

T = Temperature, degrees R (460 + temperature in degrees F. of gas at relieving conditions).

A = Total surface area of the cargo vessel in square feet which may be subjected to fire exposure.

A = $\pi \times (D \times U)$ for cylindrical tanks with hemispherical heads.

A = $\pi \times D(U + 0.3D)$, for cylindrical tanks with spherically dished or semiellipsoidal heads.

A = $\pi \times D^2$, for spherical tanks.

D = Outside diameter of the tank, in feet.

U = External overall length of the tank, in feet.

C = Constant based on the relation of the specific heats. (See A.S.M.E. "Unfired Pressure Vessel Code," section 8, page 176, which may be purchased from American Society of Mechanical Engineers, 345 East 47th Street, New York, N.Y., 10017.) (If K is not known, use C = 315.)

L = Latent heat of the material being vaporized at relieving conditions in B.t.u. per pound.

Z = Compressibility factor of the gas at relieving conditions (if not known, use Z = 1.0).

G = Constant for individual gas as shown in Table 38.10-15(c) (1).

TABLE 38.10-15(c) (1)

Relief valve setting	"G" constant for relieving conditions at 120 percent of relief valve setting
250 p.s.i.g.-----	53.6
90 p.s.i.g.-----	40.3
65 p.s.i.g.-----	38.6

(d) Safety relief valve connections shall be attached to the tank near the highest point of the vapor space. Shutoff valves shall not be installed between the tanks and safety relief valves, except manifolds for mounting multiple safety relief valves may be fitted with acceptable interlocking shutoff valves so arranged at all times as to permit the required capacity discharge through the open safety relief valves.

(e) Each safety relief valve shall be tested in the presence of a marine inspector before being placed in service. The tests shall satisfactorily indicate that the safety relief valves will start to discharge at a pressure not in excess of the maximum allowable pressure of the tank.

(R.S. 4491, as amended; 46 U.S.C. 489)

§ 38.10-20 Liquid level gaging devices—TB/ALL.

(a) Each tank shall be fitted with a liquid level gaging device of approved

design to indicate maximum level to which the tank may be filled with liquid at temperatures (1) between 20° F. and 130° F. for unrefrigerated service, and (2) within the operating temperature range for tanks operating below atmospheric temperature.

(b) Liquid level gaging devices may be of the following types: Rotary tube, slip tube, fixed tube, magnetic, automatic float, or similar types approved by the Commandant.

(c) All gaging devices shall be arranged so that the maximum liquid level for product being carried, to which the tank may be filled, is readily determinable. The maximum gallonage capacity as required by § 38.15-1 shall be:

- (1) Marked on the tank, system nameplate, or gaging device; or,
- (2) Shown in the ullage tables.

(d) Gaging devices that require bleeding of the product to the atmosphere, such as the rotary tube, fixed tube and slip tube, shall be so designed that the bleed valve maximum opening is not larger than a No. 54 drill size, unless provided with excess flow valve.

(e) Each automatic float, continuous reading tapegage, and similar type, shall be fitted with a shutoff device located as close to the tank as practicable. When an automatic float gaging device, which gages the entire height of the tank is used, a fixed tube gage set in the range of 85 percent to 90 percent of the water capacity of the tank shall be provided in addition as a means of checking the accuracy of the automatic float gage, or other alternate means acceptable to the Commandant may be used.

(f) A gaging device shall have a design pressure of at least that which is equal to the design pressure of the tank on which it is installed.

(g) For tanks operating at atmospheric temperature, the length of fixed tube device shall be designed to indicate the maximum level to which the tank may be filled, based on the volume of the product at 40° F. at its maximum permitted filling density for unlagged tanks and at 50° F. for lagged tanks. The maximum volume of the liquid at 60° F. may be obtained by determining the volume of the liquid at 40° F. or 50° F. for unlagged or lagged tanks, using the filling densities given in § 38.15-1 and correcting the liquid volumes at these temperatures to 60° F. by applying the volume correction factors in Table 38.10-20(g).

TABLE 38.10-20 (g)—VOLUME CORRECTION FACTOR

Specific gravity	Unlagged tanks	Lagged tanks
0.500	1.033	1.017
.510	1.031	1.016
.520	1.029	1.015
.530	1.028	1.014
.540	1.026	1.013
.550	1.025	1.013
.560	1.024	1.012
.570	1.023	1.011
.580	1.021	1.011
.590	1.020	1.010

(h) The method for calculating length of fixed tubes shall be:

$$\frac{\text{Water capacity of container} \times \text{Filling density}}{\text{Specific gravity} \times \text{Volume correction factor}} = \left\{ \begin{array}{l} \text{Maximum volume for which fixed length} \\ \text{tube shall be set} \end{array} \right.$$

(1) Gage glasses of the columnar type are prohibited.

(j) Flat sight glasses may be used in the design of automatic float continuous reading tape gages: *Provided*, That such glasses shall be made of high strength material suitable for the operating temperatures of not less than 1/2 inch in thickness and adequately protected by a metal cover.

Subpart 38.15—Special Cargo Handling Requirements

§ 38.15-1 Filling densities—TB/ALL.

The "filling density" is defined as the percent ratio of the weight of the gas in a tank to the weight of water the tank will hold at 60° F. The filling densities shall not exceed the ratios indicated in the Table 38.15-1.

TABLE 38.15-1—MAXIMUM PERMISSIBLE FILLING DENSITIES FOR TANKS OPERATING AT OR NEAR AMBIENT TEMPERATURE

Specific gravity at 60° F.	Maximum permitted filling density		
	Unlagged tanks—water capacity		Lagged tanks—all capacities
	1,200 gal. and under	Over 1,200 gal.	
0.473-0.480.....	38	41	42
0.481-0.488.....	39	42	43
0.489-0.495.....	40	43	44
0.496-0.503.....	41	44	45
0.504-0.510.....	42	45	46
0.511-0.519.....	43	46	47
0.520-0.527.....	44	47	48
0.528-0.536.....	45	48	49
0.537-0.544.....	46	49	50
0.545-0.552.....	47	50	51
0.553-0.560.....	48	51	52
0.561-0.568.....	49	52	53
0.569-0.576.....	50	53	54
0.577-0.584.....	51	54	55
0.585-0.592.....	52	55	56
0.593-0.600.....	53	56	57
0.601-0.608.....	54	57	58
0.609-0.617.....	55	58	59
0.618-0.626.....	56	59	60
0.627-0.634.....	57	60	61

NOTE: Increase in filling densities to provide for seasonal changes may be considered by the Commandant upon presentation of factual evidence that safe operation can be effected. The filling density for liquefied flammable gas tanks in which the temperature is maintained below the normal ambient temperature by refrigeration or other acceptable means shall be such that the tank will not be liquid full at a temperature corresponding with the vapor pressure of the start-to-discharge pressure setting of the relief valve.

§ 38.15-5 Cargo hose—TB/ALL.

(a) Flexible metal hose fabricated of seamless steel pipe and flexible joints of steel or bronze, or hose fabricated of other suitable material resistant to the action of liquefied flammable gas shall be fitted to the liquid and vapor lines during filling and discharging of the tanks. Hose used in refrigerated systems shall be suitable for the minimum temperature to which it may be subjected and shall be acceptable to the Commandant.

(b) Hose subject to tank pressure shall be designed for a bursting pressure of not less than five times the maximum safety relief valve setting of the tank.

(c) Hose subject to discharge pressure of pumps or vapor compressors shall be designed for a bursting pressure of not less than five times the pressure setting of the pump or compressor relief valve.

(d) Before being placed in service each new cargo hose, with all necessary fittings attached, shall be tested hydrostatically by the manufacturer to a pressure of not less than twice the maximum pressure to which it may be subjected. The hose shall be marked with the maximum pressure guaranteed by the manufacturer. The hose shall be marked with its minimum temperature when used in refrigerated service.

(R.S. 4488, as amended; 46 U.S.C. 481. Treasury Dept. Order 167-39, Oct. 26, 1959, 24 F.R. 8857)

Subpart 38.20—Venting and Ventilation

§ 38.20-1 Venting—T/ALL.

(a) Each safety relief valve installed on a cargo tank shall be connected to a branch vent of a venting system which shall be constructed so that the discharge of gas will be directed vertically upward to a point which shall extend to a height above the weather deck equal to at least one-third the beam of the vessel and to a minimum of at least 10 feet, and shall terminate at a comparable distance from any other living or working space, ventilator inlet, or source of vapor ignition. When special conditions will prevent the vent line header outlets being permanently installed at a height above the deck of one-third the beam of the vessel, then an adjustable system shall be provided which, when extended vertically, shall be capable of reaching a height of one-third the beam of the vessel.

(b) The capacity of branch vents or vent headers shall depend upon the number of cargo tanks connected to such branch or header capacity as provided for in the Table 38.20-1(b), and upon the total safety relief valve discharge capacity.

TABLE 38.20-1(b)—CAPACITY OF BRANCH VENTS OR VENT HEADERS

Number of cargo tanks:	Percent of total valve discharge
1 or 2.....	100
3.....	90
4.....	80
5.....	70
6 or more.....	60

(c) In addition to the requirements specified in paragraphs (a) and (b) of this section, the size of the branch vents or vent headers shall be such that the back pressure in the relief valve discharge lines shall not be more than 10 percent of the safety relief valve setting.

(d) Return bends and restrictive pipe fittings are not permitted.

(e) Vents and headers shall be so installed as to prevent excessive stresses on safety relief valve mountings.

(f) The vent discharge riser shall be so located as to provide protection against mechanical injury and such discharge pipes shall be fitted with loose raincaps or other suitable means to prevent entrance of rain or snow.

(g) No valve of any type shall be fitted in the vent pipe between the safety relief valve and the vent outlets.

(h) Suitable provisions shall be made for draining condensate which may accumulate in the discharge pipe. If an open drain is used, a means shall be provided to protect the tank, adjacent tanks, cargo piping, or equipment against impingement of the flame resulting from ignition of product escaping from the drain.

§ 38.20-5 Venting—B/ALL.

(a) Safety relief valves on cargo tanks in barges may be connected to individual or common risers which shall extend to a reasonable height above the deck. An alternate arrangement consisting of a branch vent header system as required by § 38.20-1 may be installed. In any case, the provisions of § 38.20-1 (d) through (h) shall apply.

(b) Arrangement specifically provided for venting cargo tanks forming a part of the hull on unmanned barges will be considered by the Commandant upon presentation of plans.

Subpart 38.25—Periodic Tests and Inspections

§ 38.25-1 Tests and inspections—TB/ALL.

(a) Each tank shall be subjected to the tests and inspections described in this section in the presence of a marine inspector, except as otherwise provided in this section.

(1) An internal examination shall be made at least once in each 8 calendar years of every tank.

(2) An external examination of unlagged tanks and the visible parts of lagged tanks shall be made at each inspection for certification and at such other times as considered necessary.

(3) Sufficient insulation shall be removed from insulated tanks at least once in each 8 calendar years to permit spot external examination of the tanks to the extent deemed necessary by the marine inspector or in lieu thereof the thickness of the tanks may be gaged by nondestructive means acceptable to the marine inspector without removal of the insulation.

(b) A hydrostatic test of $1\frac{1}{2}$ times the allowable pressure as determined by the safety relief valve setting shall be made at any time that the marine inspector considers such hydrostatic test necessary to determine the condition of the tank.

(c) In the application of the requirements for the hydrostatic test of the cargo tanks, the hydrostatic test shall in no case be less severe than the worst anticipated service condition of the cargo loading.

(d) In the design and testing of the independent cargo tanks, consideration shall be given to the possibility of the independent tanks being subjected to external loads.

(R.S. 4453, as amended, 4488, as amended; 46 U.S.C. 435, 481. Treasury Dept. Order 167-38, Oct. 26, 1959, 24 F.R. 8857)

§ 38.25-5 Removal of defective tanks—TB/ALL.

If a tank fails to pass the tests prescribed in this subpart, it shall be removed from service unless otherwise authorized by the Commandant.

§ 38.25-10 Safety valves—TB/ALL.

The safety relief valve discs shall be lifted from their seats in the presence of a marine inspector by either liquid, gas or vapor pressure at least once every four years to determine the accuracy of adjustment and, if necessary, shall be reset.

PART 39—FLAMMABLE OR COMBUSTIBLE LIQUIDS HAVING LETHAL CHARACTERISTICS

Subpart 39.01—General

- Sec.
39.01-1 Scope of regulations—TB/ALL.
39.01-5 Certificate of inspection—TB/ALL.

Subpart 39.05—Design, Arrangement, and Installation of Cargo Tanks

- 39.05-1 Design, construction, and arrangement—TB/ALL.
39.05-5 Markings—TB/ALL.
39.05-10 Installation—TB/ALL.

Subpart 39.10—Piping, Valves, Fittings, and Accessory Equipment

- 39.10-1 Valves and accessories—TB/ALL.
39.10-5 Piping and fittings—TB/ALL.
39.10-10 Safety relief and pressure-vacuum relief valves—TB/ALL.
39.10-15 Gaging devices—TB/ALL.

Subpart 39.15—Special Cargo Handling Requirements

- 39.15-1 Warning sign at gangway—TB/ALL.
39.15-5 Cargo discharge—TB/ALL.
39.15-10 Pump room controls—TB/ALL.

Subpart 39.20—Venting and Ventilation

- 39.20-1 Venting—TB/ALL.
39.20-5 Ventilation—TB/ALL.

Subpart 39.25—Periodic Inspections and Tests

- 39.25-1 Hydrostatic tests and inspection—TB/ALL.
39.25-5 Removal of defective tanks—TB/ALL.
39.25-10 Safety valves—TB/ALL.

AUTHORITY: The provisions of this Part 39 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply R.S. 4472, as amended, 4488, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 170, 481, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026, unless otherwise noted.

Subpart 39.01—General

§ 39.01-1 Scope of regulations—TB/ALL.

(a) The regulations in this part contain requirements for the transporta-

tion of flammable or combustible liquids having lethal characteristics and defined as Class "B" or "C" poisons in §§ 146.25-10 and 146.25-15 of Part 146 of Subchapter N (Dangerous Cargoes) of this chapter. The regulations covering the transportation in portable tanks of flammable or combustible liquids having lethal characteristics and defined as Class "B" or "C" poisons are contained in Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

§ 39.01-5 Certificate of inspection—TB/ALL.

(a) Certificate of inspection shall be endorsed for the carriage of Class "B" or "C" poisonous liquids, as follows:

Inspected and approved for the carriage of flammable or combustible Class "B" or "C" poisonous liquids.

(R.S. 4421, as amended; 46 U.S.C. 399)

Subpart 39.05—Design, Arrangement, and Installation of Cargo Tanks

§ 39.05-1 Design, construction, and arrangement—TB/ALL.

(a) Cargo having a Reid vapor pressure not exceeding 14 pounds per square inch may be transported in tanks, cylindrical or rectangular, independent of the vessel's hull structure, or in tanks built integral with the vessel's hull and completely separated from the shell of the vessel by means of wing tanks, cofferdams, double bottoms or similar voids.

(b) Independent tanks shall be designed for a head of at least 8 feet above the top of the tank or the highest level the product may rise, whichever is the greater, using the specific gravity of the product to be carried. In general, plate less than $\frac{5}{16}$ inch in thickness shall not be used in the fabrication of independent tanks unless otherwise approved by the Commandant.

(c) Tanks built integral with the vessel's hull shall conform with the scantling requirements of the American Bureau of Shipping.

(d) (1) Cargo tanks transporting liquids having a Reid vapor pressure exceeding 14 pounds per square inch, or vented at a gage pressure exceeding 4 pounds per square inch, or where air or water pressure is used to discharge the cargo, shall be fabricated as an arc-welded unfired pressure vessel and meet the applicable requirements of Parts 50 to 61, inclusive, of Subchapter F (Marine Engineering) of this chapter.

(2) Unfired pressure vessel cargo tanks shall be designed for a pressure of not less than the vapor pressure, in pounds per square inch gage, of the lading at 115° F., or the maximum air or water pressure used in discharging cargo, whichever is greater, but in no case shall the design pressure of such tanks be less than 30 pounds per square inch.

(3) The plate thickness of unfired pressure vessel type cargo tanks shall be not less than $\frac{5}{16}$ inch. Dished heads shall be used in the design of the tanks.

(e) Each tank shall be provided with not less than a 15-inch by 18-inch or an 18-inch diameter manhole, fitted with a cover and located as close as possible

to the top of the tank. Where access trunks are fitted, the diameter or minimum dimension of the trunk shall be not less than 30 inches.

(R.S. 4433, as amended; 46 U.S.C. 411)

§ 39.05-5 Markings—TB/ALL.

(a) Upon satisfactory completion of tests and inspection, unfired pressure vessel tanks shall have markings as required by § 38.05-5(a) of this subchapter.

(b) In addition to the aforementioned markings, the following inscription shall be stamped on the tank, or a corrosion-resistant plate containing this data shall be securely attached thereto:

This tank shall not contain a product having a vapor pressure in excess of ---- p. s. i. gage at 115° F.

(c) All tank markings shall be permanently and legibly stamped in a readily visible position, and shall not be obscured by painting.

§ 39.05-10 Installation—TB/ALL.

(a) Cargo tanks independent of the hull shall be installed with a clearance of not less than 24 inches from the vessel's sides. A working space of not less than 15 inches shall be provided around and under each tank, or provision shall be made for moving the tanks to secure adequate clearance for inspection and maintenance.

(b) Independent tanks shall be mounted on substantial steel saddles securely held down and chocked. Tank saddles shall be designed so as to minimize the concentration of excessive loads at any point on the shell.

(c) Tanks may be located in hold spaces or in other cargo tanks meeting the requirements for cofferdams as prescribed in § 32.60-10 or § 32.65-15, and may be installed "on deck" or "under deck" with the tank protruding above deck. On installations where a portion of the tank extends through the weather deck, provision shall be made to maintain the watertightness of the deck. Where such tanks are installed in bulk liquid cargo tanks, the liquids in the surrounding tanks shall be inert to the toxic or poisonous liquids at temperatures of 100° F. and under, at atmospheric pressure.

(d) All tanks shall be installed with manhole openings and fittings located above the weather deck.

(e) No strength welding employed in the attachment of supports, lugs, fittings etc. shall be done on tanks that require and have been stress-relieved, unless authorized by the Commandant.

Subpart 39.10—Piping, Valves, Fittings, and Accessory Equipment

§ 39.10-1 Valves and accessories—TB/ALL.

(a) All shutoff valves and accessory equipment shall be of types suitable for use with the cargo to be carried. Gray iron castings shall not be employed in the construction of valves, fittings or flanges located outside the cargo tanks.

(b) All connections to tanks, except

safety relief valves, pressure-vacuum relief valves, or gaging connections, shall have shutoff valves located as close to the tank as practicable.

§ 39.10-5 Piping and fittings—TB/ALL.

(a) Piping shall be suitable for use with the liquid cargo to be carried and shall conform to the requirements of Part 55 of Subchapter F (Marine Engineering) of this chapter. Piping shall be of seamless drawn material, except that electric resistance-welded steel piping will be acceptable.

(b) All pipe connections on pressure vessel tanks shall be grouped in the smallest practicable space and shall be located near the highest point on the tank. Alternate piping arrangements may be considered for approval by the Commandant.

(c) The pumps and cargo piping used for loading and discharging Class "B" or "C" poisons shall be independent of all other piping.

(d) Where multiple cargoes are carried, and the cargo piping conveying Class "B" or "C" poisons are led through cargo tanks containing other products the piping shall be encased in a tunnel.

(e) Where cargo lines for handling other products, or bilge and ballast piping are led through cargo tanks containing Class "B" or "C" poisons, the piping shall be encased in a tunnel.

(f) Where possible provision shall be made for expansion and contraction of piping by means of seamless steel pipe expansion bends. Corrugated expansion joints may be used, provided satisfactory evidence is shown that space limitations do not permit the use of expansion bends. Slip type expansion joints are prohibited.

§ 39.10-10 Safety relief and pressure-vacuum relief valves—TB/ALL.

(a) Each pressure vessel type cargo tank shall be fitted with one or more approved safety relief valves, set to start to discharge at a pressure of not less than 90 percent of the design pressure of the tank, but not in excess of the design pressure. Safety relief valves shall have sufficient relieving capacity to prevent a pressure rise exceeding 20 percent above the design pressure of the tank.

(b) Safety relief valves for pressure type cargo tanks shall be attached to the tank near the highest point of the vapor space.

(c) Gravity type cargo tanks shall be fitted with an approved pressure-vacuum relief valve of not less than 2½-inch size, which shall be set at a pressure of not less than 3 pounds per square inch, but not in excess of the design pressure of the tank.

(d) Pressure-vacuum relief valves for gravity type cargo tanks may be installed on the expansion trunk or in the branch vent line between the expansion trunk and the vent header.

§ 39.10-15 Gaging devices—TB/ALL.

A closed gaging system shall be provided for determining the liquid level within the tanks.

Subpart 39.15—Special Cargo Handling Requirements

§ 39.15-1 Warning sign at gangway—TB/ALL.

When transferring bulk cargo a warning sign as provided in § 35.30-1(b) of this subchapter shall be displayed to warn persons on board or in the vicinity of the tanks.

§ 39.15-5 Cargo discharge—TB/ALL.

The use of gas or liquid pressure to discharge the cargo from gravity type cargo tanks is prohibited. Gas or liquid pressure may be used to discharge the cargo from pressure vessel type cargo tanks, provided authorization is granted by the Commandant.

§ 39.15-10 Pump room controls—TB/ALL.

Cargo pumps, valves and fittings used for the transfer of Class "B" or "C" poisons and installed in pump rooms located below the weather deck shall be provided with means of operation from a position above the freeboard deck.

Subpart 39.20—Venting and Ventilation

§ 39.20-1 Venting—TB/ALL.

(a) Vent pipes shall be connected to each safety relief or pressure vacuum-relief valve. Tanks carrying Class "B" or "C" poisons shall be vented independent of tanks carrying other products. Tanks carrying the same class products may be connected to a vent header system or each tank may be vented independently.

(b) The vent riser shall extend to a height above the weather deck equal to at least one-third the beam of the vessel and shall terminate at a comparable distance from any other living or working space, ventilator inlet, or source of vapor ignition. When special conditions prevent the vent outlets from being permanently installed at a height above the deck of one-third the beam of the vessel, an adjustable system shall be provided which, when extended vertically, shall reach a height of one-third the beam of the vessel.

(c) The safety relief valve may be fitted with a bypass having the full capacity of the relief valve and equipped with a manually operated stop valve to permit equalizing pressures during filling and discharging operations.

§ 39.20-5 Ventilation—TB/ALL.

(a) Pump rooms located below the weather deck shall be fitted with power ventilation designed to assure sufficient air movement through the pump room to avoid accumulation of toxic vapors. The ventilation system shall be of the exhaust type having blower capacity sufficient to permit a change of air of at least 20 times per hour. At least two exhaust inlet ducts shall be provided and located near the floor level and at points where a concentration of toxic vapors may be expected. At least two fresh air inlet ducts shall be provided.

(b) Enclosed pump rooms located above the weather deck shall be fitted with power ventilation having an exhaust type blower of sufficient capacity to permit a change of air of at least 10 times per hour. The exhaust inlet ducts shall be located at points where a concentration of toxic vapors may be expected. At least one fresh air inlet duct shall be provided.

(c) The outlet duct exhausts shall terminate at a distance of at least six feet above the enclosed space or pump room and at least six feet from any entrance to the interior part of the vessel. The discharge end of the exhaust ducts shall be so located as to preclude the possibility of recirculating contaminated air through the pump room, or other spaces where personnel may be present.

Subpart 39.25—Periodic Inspections and Tests

§ 39.25-1 Hydrostatic tests and inspection—TB/ALL.

(a) Each pressure vessel tank shall be subjected to an internal examination biennially and to a hydrostatic test at the time of the periodic inspection on the fourth year after installation, and a like test shall be applied every fourth year thereafter.

(1) If there is evidence of corrosion or deterioration, the marine inspector may require additional internal examinations or hydrostatic tests at intermediate inspection periods.

(2) The hydrostatic test shall be equal to one and one-half times the design pressure. For lagged tanks the hydrostatic test shall be applied for a period of at least 20 minutes without pressure drop when portions of the jacket and lagging are not removed at intermediate inspection period.

(3) Lagged tanks shall have a portion of the jacket and lagging removed on the lower portion of the shell as directed by the marine inspector at least once every eight years for external examination.

(b) Gravity tanks and cargo tanks constructed integral with the vessel's hull shall be inspected as prescribed in Subpart 31.10 of Part 31 of this subchapter. Lagged gravity type tanks shall be examined as required by paragraph (a) of this section.

§ 39.25-5 Removal of defective tanks—TB/ALL.

If a pressure vessel fails to pass the tests prescribed in this subpart, or is deemed by the marine inspector to be unsuitable for continued use, it shall be removed from service unless otherwise authorized by the Commandant.

§ 39.25-10 Safety valves—TB/ALL.

(a) The safety relief valve discs shall be lifted from their seats in the presence of a marine inspector by either liquid, gas or vapor pressure at least once every four years to determine accuracy of adjustment and, if necessary, shall be reset.

(b) The setting and operation of the pressure-vacuum relief valves shall be checked in the presence of a marine inspector at the inspection for certification and at such other times as considered necessary.

PART 40—SPECIAL CONSTRUCTION, ARRANGEMENT, AND OTHER PROVISIONS FOR CARRYING CERTAIN FLAMMABLE OR COMBUSTIBLE DANGEROUS CARGOES IN BULK

Subpart 40.01—Application

Sec.
40.01-1 General—TB/ALL.
40.01-5 Effective date—TB/ALL.

Subpart 40.05—Ethylene Oxide

40.05-1 General—TB/ALL.
40.05-2 Tank vessel certification and other cargoes—TB/ALL.
40.05-5 How ethylene oxide may be carried—TB/ALL.
40.05-10 Design, construction and arrangement of cargo tanks—TB/ALL.
40.05-20 Installation of cargo tanks—TB/ALL.
40.05-30 Insulation—TB/ALL.
40.05-35 Cooling systems—TB/ALL.
40.05-40 Valves, fittings, and accessories—TB/ALL.
40.05-45 Liquid level gaging devices—TB/ALL.
40.05-50 Filling and discharge pipes—TB/ALL.
40.05-55 Cargo piping—TB/ALL.
40.05-60 Safety relief valves—TB/ALL.
40.05-65 Filling density—TB/ALL.
40.05-69 Venting—TB/ALL.
40.05-73 Ventilation—TB/ALL.
40.05-75 Cargo hose—TB/ALL.
40.05-80 Electrical bonding—TB/ALL.
40.05-83 Special cargo handling requirements—TB/ALL.
40.05-85 Information board—TB/ALL.
40.05-87 Tests and inspections—TB/ALL.

AUTHORITY: The provisions of this Part 40 issued under R.S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U.S.C. 375, 391a, 416. Interpret or apply sec. 3, 68 Stat. 675; 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 F.R. 9671, 3 CFR, 1965 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-14, Nov. 26, 1954, 19 F.R. 8026, unless otherwise noted.

Subpart 40.01—Application

§ 40.01-1 General—TB/ALL.

(a) The provisions of this part shall apply to all vessels which carry in bulk any of the dangerous cargoes specifically noted in this part.

§ 40.01-5 Effective date—TB/ALL.

(a) The provisions in this part shall be in effect on and after January 1, 1964.

Subpart 40.05—Ethylene Oxide

§ 40.05-1 General—TB/ALL.

(a) Ethylene oxide transported under the provisions of this subpart shall be acetylene free.

(b) Ethylene oxide may be carried in tank barges or tankships in accordance with the provisions of this subpart.

(c) No other product may be transported in tanks certified for ethylene oxide except that the Commandant may approve subsequent transportation of other products and return to ethylene oxide service if tanks, piping and auxiliary equipment are adequately cleaned to the satisfaction of the marine inspector.

§ 40.05-2 Tank vessel certification and other cargoes—TB/ALL.

(a) The certificate of inspection shall be endorsed as follows:

"Inspected and approved for the carriage of ethylene oxide in tank number (s) -----"

(b) Unless authorized by the Commandant, no other kind of cargo except methane, ethane, propane, butane and pentane shall be on board a tank vessel certificated for the carriage of ethylene oxide at the same time ethylene oxide is either the liquid or vapor state is present in any cargo tank. Ethylene oxide tanks shall not be installed in tanks intended for any other cargo.¹

(R.S. 4421, as amended, 4472, as amended, 46 U.S.C. 399, 170)

§ 40.05-5 How ethylene oxide may be carried—TB/ALL.

(a) Ethylene oxide shall be carried in fixed, independent, pressure vessel type cargo tanks, designed, constructed, arranged and if necessary equipped with machinery to maintain the cargo temperature below 90° F. except as otherwise provided for in paragraph (c) of this section.

(b) Ethylene oxide shall be loaded at a temperature below 70° F.

(c) When ethylene oxide is to be transported at or near atmospheric pressure, the Commandant may permit the use of alternate methods of storage if it is shown to his satisfaction that a degree of safety is obtained consistent with the minimum requirements of this subpart.

(R.S. 4488, as amended; 46 U.S.C. 481. Treasury Dept. Order 167-38, Oct. 26, 1959, 24 F.R. 8857)

§ 40.05-10 Design, construction and arrangement of cargo tanks—TB/ALL.

(a) All cargo tanks shall be constructed of a carbon steel or stainless steel acceptable to the Commandant. Impurities of copper, magnesium and other acetylide-forming metals shall be kept to a minimum. The chemical composition of all steel used shall be submitted to the Commandant for approval prior to fabrication. Neither aluminum nor copper and other acetylide-forming metals, such as silver, mercury, magnesium, and their alloys shall be used as materials of construction for tanks or equipment used in handling ethylene oxide.

(b) Cargo shall be transported in cylindrical pressure vessel tanks, independent of the vessel's hull structure and so arranged as to provide a minimum clearance of not less than 24 inches from the vessel's side and not less than 15 inches from the vessel's bottom to provide access for inspection. When more than one tank is installed in a vessel, the distance between such tanks shall be not less than 15 inches unless otherwise approved by the Commandant.

(c) Cargo tanks shall meet the requirements of Class I arc-welded unfired

¹ Ethylene oxide may rearrange and/or polymerize violently, liberating large quantities of heat. A few of the most notable catalysts for this type of reaction are: anhydrous iron, tin and aluminum chlorides; pure iron and aluminum oxides; metallic potassium; alkali metal hydroxides; acids and organic bases. The speed of the reaction varies with the purity of the reactants, the temperature, the relative amount of each reactant, and the method of application.

pressure vessels and shall be fabricated, inspected and tested in accordance with the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(d) Cargo tanks shall be designed for the maximum pressure of vapor or gas used in discharging the cargo but in no case shall the design pressure of such tanks be less than the seventy-five (75) pounds per square inch gage. The tank shell and heads shall not be less than $\frac{1}{16}$ inch thick. The design of tanks shall take into account the expected stresses due to internal pressure, static head and localized stress concentrations.

(e) Each tank shall be provided with not less than one 15- x 23-inch elliptical or 18-inch diameter manhole located above the maximum liquid level and as close as possible to the top of the tank. Where access trunks are fitted to the tanks, the diameter of the trunks shall be not less than 30 inches.

(R.S. 4433, as amended; 46 U.S.C. 411)

§ 40.05-20 Installation of cargo tanks—TB/ALL.

(a) Cargo tanks shall be located below deck in holds or enclosed spaces with the domes or trunks extended above the weather deck and terminating in the open. Provisions shall be made to maintain the watertightness of the deck by means of watertight seals around such domes or trunks. The holds or enclosed spaces, in which the ethylene oxide tanks are located, shall not be used for any other purpose. The weathertightness of the weatherdeck may not be required to be fully maintained on: (1) Tankships operating on restricted routes which are sufficiently protected; or, (2) Open hopper type barges of a suitable design approved for such service.

(b) All cargo tanks shall be installed with the manhole openings and all tank connections located above the weather deck in the open.

(c) Tanks shall be suitably mounted on steel supports and anchored in place and suitably electrically bonded to the hull. Each tank shall be so supported as to prevent the excessive concentration of loads on the supporting portion of the tank shell. Collision chocks shall be installed to prevent any longitudinal shifting of and damage to the cargo tanks in the event of collision. The design shall show the manner in which the tanks are to be installed, supported and secured in the barge or vessel and shall be approved prior to the installation of the tanks.

(d) No welding of any kind shall be done on cargo tanks or supporting structure unless authorized by the Commandant.

§ 40.05-30 Insulation—TB/ALL.

(a) All cargo tanks, piping, valves, fittings, etc., which may contain ethylene oxide in either the liquid or vapor phase, including the vent risers, shall be insulated. Flanges need not be covered, but if covered a small opening shall be left at the bottom of the flange cover to detect leaks. Insulation shall be of an approved incombustible material suitable

for use with ethylene oxide, which does not significantly lower the autoignition temperature and which does not react spontaneously with ethylene oxide. The insulation shall be of such thickness as to provide a thermal conductance of not more than 0.075 B.t.u. per square foot per degree fahrenheit differential in temperature per hour.

(b) Insulation shall be of an approved type complying with the requirements of Subpart 164.009 of Subchapter Q (Specifications) of this chapter. However, the Commandant may consider alternate proposals where it is demonstrated to his satisfaction that adequate protection against fire exposure will be provided. Insulation shall be of a vapor-proof construction, or shall have a vapor-proof coating of a fire-retardant material acceptable to the Commandant. All insulation, vapor barrier and adhesive material shall be of a type which does not lower the autoignition temperature of or react spontaneously with ethylene oxide. Insulation exposed to the weather shall have the vapor-proof coating covered with a removable sheet metal jacket, not less than 0.083-inch thickness, flashed around all openings so as to be weathertight. The sheet metal jacket may be omitted when the vapor barrier is inherently weather resistant. When a weather resistant vapor barrier is used, the insulation shall be protected by sheet metal in those areas subject to mechanical damage.

§ 40.05-35 Cooling systems—TB/ALL.

(a) When cooling systems are installed to maintain the temperature of the liquid below 90° F., at least two complete cooling plants, automatically regulated by temperature variations within the tanks shall be provided; each to be complete with the necessary auxiliaries for proper operation. The control system shall also be capable of being manually operated. An alarm shall be provided to indicate malfunctioning of the temperature controls. The capacity of each cooling system shall be sufficient to maintain the temperature of the liquid cargo at or below the design temperature of the system.

(b) An alternate arrangement may consist of three cooling plants, any two of which shall be sufficient to maintain the temperature of the liquid cargo at or below the design temperature of the system.

(c) Cooling systems requiring compression of ethylene oxide are prohibited.

§ 40.05-40 Valves, fittings, and accessories—TB/ALL.

(a) All valves, flanges, fittings, and accessory equipment shall be of a type suitable for use with ethylene oxide and shall be made of steel or stainless steel, or other materials acceptable to the Commandant. Impurities of copper, magnesium and other acetylide-forming metals shall be kept to a minimum. The chemical composition of all material used shall be submitted to the Commandant for approval prior to fabrication. Disks or disk faces, seats and other wearing parts of valves shall be made

of stainless steel containing not less than 11 percent chromium. Mercury, silver, aluminum, magnesium, copper and their alloys shall not be used for any valves, gages, thermometers, etc. Gaskets shall be constructed of spirally wound stainless steel with "Teflon" or other suitable material. All packing and gaskets shall be constructed of materials which do not react spontaneously with or lower the autoignition temperature of ethylene oxide.

(b) The pressure rating of valves, fittings, and accessories shall be not less than the maximum pressure for which the cargo tank is designed or the shut-off head of the cargo pump, whichever is greater, but in no case less than 150 pounds per square inch, American Standards Association's standards. Welded fittings shall be used wherever possible and the number of pipe joints shall be held to a minimum. Threaded joints in the cargo liquid and vapor lines are prohibited.

(c) Each tank shall be provided with the necessary fill and discharge liquid and vapor shutoff valves, safety relief valves, liquid level gaging devices, thermometer well and pressure gage, which shall be accessible for convenient operation. All connections to tanks shall be made above the weather deck in the open to a trunk or dome and shall be protected against mechanical damage and tampering. Other openings in the tanks, except as specifically permitted by this part, are prohibited.

(d) All connections to the tanks, except safety relief valves, shall have manually operated shutoff valves located as close to the tank as possible. These valves are in addition to those required by § 40.05-50.

(e) Excess flow valves, where installed, shall close automatically at the rated flow of vapor or liquid as specified by the manufacturer. The piping, valves, fittings and appurtenances protected by the excess flow valves, shall have a greater flow capacity than the rated flow of the excess flow valve.

(f) Pressure gage connections need not be equipped with excess flow valves if the openings are not larger than No. 54 drill size.

(g) Excess flow valves may be designed with a bypass, not to exceed a No. 60 drill size opening, to allow equalization of pressure.

(h) Relief valves shall be fitted in liquid and vapor lines which may be subject to excessive pressure due to thermal expansion when the lines are liquid full. The escape from these relief valves shall be piped to the venting system.

(i) The pressure gage connection shall be located at the highest practical point in the vapor space of the tank.

(j) The thermometer well shall terminate in the liquid space and shall be attached to the shell by welding with the end of the fitting being provided with a gastight screwed plug or bolted cover.

§ 40.05-45 Liquid level gaging devices—TB/ALL.

(a) Each tank shall be fitted with a liquid level gaging device of approved

design to indicate the level to which the tank may be filled.

(b) Liquid level gaging devices may be the: Slip tube, magnetic, automatic float, or other types approved by the Commandant.

(c) Any gaging device that requires bleeding of the product to the atmosphere, such as the slip tube, shall be so designed that the bleed valve maximum opening is not larger than a No. 54 drill size, unless provided with an excess flow valve.

(d) The automatic float continuous reading tape gage, and similar types, shall be fitted with a shutoff valve located as close to the tank as practicable, which shall be designed to close automatically in the event of fracture of the external gage piping. An auxiliary gaging device shall always be used in conjunction with an automatic gaging device. This auxiliary device may be a duplication of the automatic device.

§ 40.05-50 Filling and discharge pipes—TB/ALL.

(a) Filling and discharge piping shall extend to within four inches of the bottom of the tank or sump pit if one is provided.

(b) In addition to the shutoff valve required by § 40.05-40(d), all tank connections larger than 1/2 inch inside pipe size, except safety relief valves and liquid level gaging devices, shall be fitted with either internal back pressure check valves or internal excess flow valves in conjunction with a quick closing stop valve operable from at least two remote locations. The quick closing stop valve shall be of the "fail safe" type acceptable to the Commandant and shall be equipped with a fusible plug designed to melt between 208° F. and 220° F., which will cause the quick closing valve to close automatically in case of fire. The quick closing valve shall be located as close to the tank as possible.

§ 40.05-55 Cargo piping—TB/ALL.

(a) Piping systems intended for ethylene oxide service shall not be used for any other product and shall be completely separate from all other systems. The piping system shall be designed so that no cross connections may be made either through accident or design.

(b) The piping system shall be designed for a working pressure of not less than the maximum pressure to which the system may be subjected, however, in no case shall the design pressure be less than 150 pounds per square inch. In the case of piping on the discharge side of the liquid pumps or vapor compressors, the design pressure shall be not less than the pump or compressor discharge relief valve setting; or, provided the piping is not fitted with relief valves, the design pressure shall not be less than the total discharge head of the pump or compressor.

(c) Piping shall be seamless drawn or electric resistance welded steel or stainless steel.

(d) Where necessary, provision shall be made for expansion and contraction of

piping by means of seamless pipe expansion bends or offsets. Suitable means shall be provided for maintaining the piping in a fixed position.

(e) Piping shall be provided with adequate support to take the weight of the piping off the valves and fittings and to prevent excessive vibration.

§ 40.05-60 Safety relief valves—TB/ALL.

(a) Each tank shall be fitted with one or more approved safety relief valves designed, constructed and flow-tested for capacity in conformance with Subpart 162.018 of Subchapter Q (Specifications) of this chapter.

(R.S. 4491, as amended; 46 U.S.C. 489)

(b) Each safety relief valve shall be set to start to discharge at not less than 75 pounds per square inch gage, nor more than the design pressure of the tank.

(c) The safety relief valves shall have a combined relieving capacity sufficient to prevent a rise of pressure in the tank of more than 20 percent above the maximum allowable pressure when all the safety relief valves are discharging. The minimum rates of discharge of safety relief valves for tanks shall not be less than that determined by the following formula.

$$Q = 26.84 A^{0.82} \quad (1)$$

where:

Q = Minimum required rate of discharge, in cubic feet per minute of standard air at 120 percent of the maximum set pressure of the safety relief valves. Discharge measured at 60° F. and atmospheric pressure (14.7 p.s.i.a.).

A = Total external surface area of the tank, in square feet.

A = $\pi(D \times U)$ for cylindrical tanks with hemispherical heads.

A = $\pi D(U + 0.3D)$, for cylindrical tanks with spherically dished or semi-ellipsoidal heads.

A = πD^2 , for spherical tanks.

D = Outside diameter of the tank, in feet.

U = External over-all length of the tank, in feet.

(d) Safety relief valves shall be attached to the tank near the highest point of the vapor space. Shutoff valves shall not be installed between the tanks and safety relief valves except:

(1) Manifolds for mounting multiple safety relief valves may be fitted with acceptable interlocking shutoff valves so arranged that at all times the required relief valve capacity will be available to relieve internal pressure. The valving arrangement shall be such that no vapor will escape even if the "out of service" relief valve is removed.

(2) Auxiliary safety devices such as rupture discs or breaking pins, of suitable corrosion-resistant compatible material, may be installed between the tanks and the safety relief valves, subject to the approval of the Commandant.

(e) Each safety relief valve shall be tested in the presence of an inspector before being placed in service. The tests shall satisfactorily indicate that the safety relief valves will start to discharge at a pressure of not less than 75 pounds per square inch gage, nor greater than the design pressure of the tank.

§ 40.05-65 Filling density—TB/ALL.

(a) The filling density shall not exceed 83 percent. Filling density is defined as the ratio of the weight of material which may be loaded into the tank to the weight of water the tank will hold at 60° F. expressed as a percentage.

§ 40.05-69 Venting—TB/ALL.

(a) Tanks carrying ethylene oxide shall be vented through the safety relief valves independent of tanks carrying other products. Each safety relief valve installed on a cargo tank shall be connected to a venting system consisting of a branch vent from each cargo tank connected to a vent header which shall extend to a height above the weather deck to at least one-third the beam of the vessel and shall terminate at a comparable distance from any working or living space, ventilator inlet, or source of vapor ignition. When special conditions would prevent the vent line or header outlets being permanently installed at a height above the deck of one-third the beam of the vessel, then an adjustable system shall be provided which, when extended vertically, shall be capable of reaching a height one-third of the beam of the vessel. During loading and unloading operations the displaced ethylene oxide vapor shall be returned to the loading facility.

(b) The capacity of branch vents or vent headers shall depend upon the number of cargo tanks connected to such branch or header vents as provided for in Table 40.05-69(b), and upon the total safety relief valve discharge.

TABLE 40.05-69(b)—CAPACITY OF BRANCH VENTS OR VENT HEADERS

Number of cargo tanks	Percent of total valve discharge
1 or 2	100
3	90
4	80
5	70
6 or more	60

(c) In addition to the requirements specified in paragraphs (a) and (b) of this section, the size of the branch vents or vent headers shall be such that the back pressure in the relief valve discharge lines shall not be more than 10 percent of the safety relief valve setting.

(d) Return bends and restrictive pipe fittings are not permitted.

(e) Vents and headers shall be so installed as to prevent excessive stresses on safety relief valve mountings.

(f) The vent discharge riser shall be so located as to provide protection against mechanical damage and such discharge pipes shall be fitted with loose raincaps or other suitable means to prevent entrance of rain or snow. A weather hood may be installed at the vent outlet providing it is of such design as not to direct the flow of vapor below the horizontal.

(g) No shutoff valve of any type shall be fitted in the vent piping between the safety relief valve and the vent outlets.

(h) Suitable provision shall be made for draining condensate which may accumulate in the vent piping.

(i) The outlet of each vent riser will be fitted with acceptable corrosion-resistant flame screen of suitable material or a flame arrestor suitable for use with ethylene oxide.

(j) Safety relief valves on cargo tanks in barges may be connected to individual or common risers which shall extend to a height of not less than one-third the beam of the vessel but in no case less than seven feet above the deck. Alternate arrangements consisting of a branch vent header system may be installed. In any case, all other provisions of paragraphs (a) through (i) of this section apply.

§ 40.05-73 Ventilation—TB/ALL.

(a) All enclosed spaces within the hull shall be vented or ventilated in accordance with the provisions of this subchapter except as otherwise provided for in this subpart.

(b) The enclosed spaces on tankships and manned barges in which the cargo tanks are located shall be rendered inaccessible to personnel while the vessel is underway and shall be inerted by injection of a suitable inert gas or shall be well ventilated.

(c) The enclosed spaces on tankships and manned barges in which the cargo tanks are located, if an inerting system is not installed, shall be fitted with forced ventilation of such capacity to provide a complete change of air every three minutes and arranged in such a manner that any vapors lost into the space will be removed. The ventilation system shall be in operation at all times cargo is being loaded or discharged. No electrical equipment shall be fitted within the spaces or within 10 feet of the ventilation exhaust from these spaces.

(d) All ventilation machinery shall be of non-sparking construction and shall not provide a source of vapor ignition.

(e) Each vent shall be fitted with a flame screen of corrosion resistant wire which is suitable for use with ethylene oxide.

§ 40.05-75 Cargo hose—TB/ALL.

(a) Flexible metal hose fabricated of stainless steel or other acceptable material, resistant to the action of ethylene oxide, shall be fitted to the liquid and vapor lines during filling and discharging of the tanks.

(b) Hose subject to tank pressure shall be designed for a bursting pressure of not less than five times the maximum safety relief valve setting of the tank.

(c) Hose subject to discharge pressure of pumps or vapor compressors shall be designed for a bursting pressure of not less than five times the pressure setting of the pump or compressor safety relief valve.

(d) Before being placed in service, each new cargo hose, with all necessary fittings attached, shall be tested hydrostatically by the manufacturer to a pressure of not less than twice the maximum

pressure to which it may be subjected in service. The hose shall be marked with the maximum pressure guaranteed by the manufacturer, and with the words "Certified For Ethylene Oxide".

(e) Cargo hose intended for ethylene oxide service shall not be used for any other products except those which are compatible with ethylene oxide.

(R.S. 4488, as amended; 46 U.S.C. 481. Treasury Dept. Order 167-38, Oct. 26, 1959, 24 F.R. 8857)

§ 40.05-80 Electrical bonding—TB/ALL.

(a) Each cargo tank shall be electrically bonded to the hull. The vessel shall be electrically bonded to the shore piping prior to connecting the cargo hose. This electrical bonding shall be maintained until after the cargo hose has been disconnected and any spillage has been removed.

§ 40.05-83 Special cargo handling requirements—TB/ALL.

(a) Cargo shall be discharged by pumping or by displacement with nitrogen or other acceptable inert gas. In no case shall air be allowed to enter the system. During loading and unloading operations the vapor shall not be discharged to the atmosphere. Provisions shall be made to return all displaced vapor to the loading facility. The loading rate and the pressure applied to the tank to discharge the cargo shall be so limited that the safety relief valves will not be caused to open.

(b) The cargo shall be shipped under a suitable protective padding, such as nitrogen gas. When nitrogen gas is used, the gas padding system shall be so designed that the vapor space above the liquid cargo will be filled and maintained with a gas mixture of not less than 45 percent nitrogen. Other gases proposed for use as padding may be given consideration by the Commandant. Original charging only of protective gas padding at the loading facility is not considered adequate. A sufficient amount of spare inerting gas as approved by the Commandant shall be provided on the vessel in order to maintain the proper concentration of the gas in the event of normal leakage or other losses.

(c) Any padding gas selected should be at least 98.0 percent pure and free of reactive materials, such as ammonia, hydrogen sulfide, sulfur compounds, and acetylene.

(d) A water spray extinguishing system shall be provided in the area where loading and unloading operations are conducted. The system shall be designed to operate automatically in case of fire. The capacity and arrangement shall be of such as to effectively blanket the area in way of the loading manifold and exposed deck piping for ethylene oxide. The rate of discharge and the arrangement of piping and nozzles shall be such as to give a uniform distribution over the entire area protected. Additionally, means shall be provided for

local and remote manual operation. The arrangement shall be such that any spilled cargo will be washed away. A water hose with pressure to the nozzle, when atmospheric temperatures permit, shall be connected ready for immediate use during filling and discharge operations and any spillage of ethylene oxide shall be immediately washed away.

(e) Prior to disconnecting shore lines, the pressure in the liquid and vapor lines shall be relieved through suitable valves installed at the loading header. The liquid and vapor discharged from these lines shall not be discharged to atmosphere.

(f) Prior to loading, a sample from the cargo tank will be taken to insure that the pad gas will meet the requirements of paragraph (b) of this section and that the oxygen content of the vapor space will be not more than 2.0 percent maximum. If necessary, a sample will be taken after loading to insure the vapor space meets this requirement.

(g) The owner, master or person in charge of any vessel subject to the provisions of this part shall insure that during cargo transfer operations the persons required by Subpart 35.35 of this subchapter shall be especially qualified in the handling of ethylene oxide.

(R.S. 4488, as amended; 46 U.S.C. 481. Treasury Dept. Order 167-38, Oct. 26, 1959, 24 F.R. 8857)

§ 40.05-85 Information board—TB/ALL.

(a) A suitable information board shall be installed upon which shall be posted the information described in this section.

(b) The following information shall remain posted on board from time cargo transfer operations begin until the vessel is gas-free or changes cargo:

- (1) Identification of the cargo.
- (2) A description of the principal characteristics of the cargo.
- (3) Instructions for the safe handling of the cargo, including operating procedures for maintaining the required cargo temperature.
- (4) List and locations of all safety equipment.
- (5) Emergency procedures.

(R.S. 4488, as amended; 46 U.S.C. 481. Treasury Dept. Order 167-38, Oct. 26, 1959, 24 F.R. 8857)

§ 40.05-87 Tests and inspections—TB/ALL.

(a) Each tank shall be subjected to the tests and inspections described in this paragraph in the presence of a marine inspector, except as otherwise provided in this section.

(1) An internal examination shall be made at least once in each four calendar years.

(2) Sufficient insulation shall be removed from the tank at least once in each four calendar years for spot external examination of the tank.

(3) A hydrostatic test of 1½ times the design pressure shall be made at least once in each four years at the time the internal examination is made and