

and material received from the public, as well as documents mentioned as being available in the docket, are part of docket USCG-2013-0240. Unless specifically stated otherwise, this Commandant Change Notice is effective as of the date of publication. Any discrepancies with vessel manning or endorsements should be brought to the attention of the owner/operator or Officer in Charge, Marine Inspection (OCMI) and discussed during the next scheduled Coast Guard attendance with a view of aligning with this revised guidance.

5. **DISCLAIMER.** This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended to nor does it impose legally binding requirements on any party. It represents the Coast Guard's current thinking on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other Federal and State regulators, in applying statutory and regulatory requirements. Members of the public may use an alternative approach if the approach satisfies the requirements of the applicable statutes and regulations.
6. **MAJOR CHANGES.** This Change is presented in a new format, to facilitate future revisions by creating three distinct parts; Part A: Mariner Credentialing (Chapters 1-17), Part B: Vessel Manning (legacy Chapters 20-26, now Chapters 1-7), and Part C: Shipment and Service (legacy Chapters 18-19, now Chapters 1-2). This Change includes revisions to Part C, Chapters 1 and 2, to account for revised regulations, updated CG-Forms, and reformatting. Substantive changes to Part B, Chapters 1-7, of this Manual include:
 - a. Full alignment with Deputy Commandant for Operations Organization 3.0 for clarity of roles and responsibilities and facilitation of communications with appropriate offices in Headquarters.
 - b. Updated general provisions for vessel manning, including guidance for the issuance of safe manning documents.
 - c. Incorporates updated information on the Global Maritime Distress and Safety System (GMDSS).
 - d. Revised discussion on the impact of multiple international standards, including; the Officer's Competency Certificates Convention (OCCC) 1936, the International Convention for Safety of Life at Sea (SOLAS), and the Principles of Minimum Safe Manning (IMO Resolution A.1047(27)).
 - e. Clarification on the applicability of tonnage measurement systems to U.S. flag vessels.
 - f. Changes resulting from the consolidation of merchant mariner qualification credentials, including the removal of references to the operator uninspected towing vessel (OUTV) endorsement.
 - g. Context on the allowable employment and conditions of a two-watch system for specific vessel types.

- h. Updated policy reflecting the regulations for the Implementation of the 2010 Amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, (STCW) and Changes to National Endorsements (78 FR 1625-AA16, 247 [December 24, 2013]).

7. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS.

- a. The development of this Commandant Change Notice and the general policies contained within it have been thoroughly reviewed by the originating office in conjunction with the Office of Environmental Management, and are categorically excluded (CE) under current USCG CE # 33 from further environmental analysis, in accordance with Section 2.B.2. and Figure 2-1 of the National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts, COMDTINST M16475.1 (series). Because this Commandant Change Notice contains guidance on, and provisions for, compliance with applicable environmental mandates, Coast Guard categorical exclusion #33 is appropriate.
- b. This directive will not have any of the following: significant cumulative impacts on the human environment; substantial controversy or substantial change to existing environmental conditions; or inconsistencies with any Federal, State, or local laws or administrative determinations relating to the environment. All future specific actions resulting from the general policies in this Commandant Change Notice must be individually evaluated for compliance with the National Environmental Policy Act (NEPA), DHS and Coast Guard NEPA policy, and compliance with all other environmental mandates. Due to the administrative and procedural nature of this Commandant Change Notice, and the environmental guidance provided within it for compliance with all applicable environmental laws prior to promulgating any directive, all applicable environmental considerations are addressed appropriately in this Commandant Change Notice.

8. DISTRIBUTION. No paper distribution will be made of this Commandant Change Notice. An electronic version will be located on the following Commandant (CG-612) web sites. Internet: <http://www.uscg.mil/directives/>, and CGPortal: <https://cgportal2.uscg.mil/library/directives/SitePages/Home.aspx>.

9. PROCEDURE. Remove and replace the following sections of The Marine Safety Manual, Volume III, Marine Industry Personnel, COMDTINST M16000.8B:

Remove	Replace
Contents IV-VII	Contents IV-VII
Chapters 18-19	Chapters C1-C2
Chapters 20-26	Chapters B1-B7
List of Figures F-i	List of Figures LIF-i
IMO Resolution A.481(XII)	Annex
Index I-1 – I-18	*Removed

10. RECORDS MANAGEMENT CONSIDERATIONS. This Instruction has been thoroughly reviewed during the directives clearance process, and it has been determined there are further records scheduling requirements, in accordance with Federal Records Act, 44 U.S.C. 3101 et seq., NARA requirements, and Information and Life Cycle Management Manual, COMDTINST M5212.12 (series). This policy does create significant or substantial change to existing records management requirements.

11. FORMS/REPORTS. The forms referenced in this Manual are available in USCG Electronic Forms on the Standard Workstation or on the Internet: <http://www.uscg.mil/forms/>; CG Portal <https://cgportal2.uscg.mil/delivery/Satellite/CG611/FORMS> and Intranet at <http://cgweb.comdt.uscg.mil/CGForms>.

12. REQUEST FOR CHANGES. Units and individuals may recommend changes via the chain of command to: CG-CVC-1@uscg.mil.

P. F. THOMAS /s/
Rear Admiral, U.S. Coast Guard
Assistant Commandant for Prevention Policy

FORWARD

The United States Coast Guard (USCG) is the nation's lead federal agency charged with the superintendence of the U.S. Merchant Marine and steward for associated International Conventions. In executing these responsibilities, the USCG prescribes regulations and develops policy to ensure that inspected and certain uninspected vessels are safely manned with qualified and competent mariners. The specific statutory basis for this charge is rooted in Title 46, U.S. Code (U.S.C.) Subtitle II, specifically § 2103:

“The Secretary has general superintendence over the merchant marine of the United States and of merchant marine personnel insofar as the enforcement of this subtitle is concerned and insofar as those vessels and personnel are not subject, under other law, to the supervision of another official of the United States Government. In the interests of marine safety and seamen's welfare, the Secretary shall enforce this subtitle and shall carry out correctly and uniformly administer this subtitle. The Secretary may prescribe regulations to carry out the provisions of this subtitle.”

Central to this charge is the intricate relationship between mariner credentialing, seamen's welfare and protection, vessel manning, and watchkeeping. Although their origins are distinct, these components are necessarily linked forming a network critical to the interests of a safe, secure, and environmentally sound Marine Transportation System. Marine Safety Manual Volume III outlines the various domestic laws, regulations, and international requirements governing marine industry personnel and provides fundamental policy and procedures for the administration of these functions. Volume III is organized into three parts; Part A: Mariner Credentialing, Part B: Vessel Manning, and Part C: Shipment and Service. Related policy can also be found in MSM Volumes II, IV, and V.

Area Commanders, District Commanders, Sector Commanders and unit Commanding Officers shall ensure that they and their personnel are familiar with the provisions of this Volume. The Volume must be used in concert with appropriate marine safety laws and regulations. In any case of apparent conflict between provisions of this manual and any statute or regulation, the legal requirements take precedence and the Office of Commercial Vessel Compliance, Commandant (CG-CVC) should be informed through the appropriate chain of command so that the matter can be resolved. In case of conflict between provisions of this Volume and conventional practice, the cognizant Officer in Charge, Marine Inspection (OCMI) should work through their chain of command to resolve the issue.

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NOTE: This change has reorganized the previous chapters under parts based on subject matter. The chapter numbers start over at "1" for each part. The chapter reference now includes both the part and chapter identification (e.x. The old Chapter 1 would now be A1). The new parts are:

Part ID	Part Title
A.	Mariner Credentialing
B.	Vessel Manning
C.	Shipment and Service

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CG-543 PL 07-02 Encl. (1), Paragraph 13	Guidance On The Inspection, Repair And Maintenance Of Liftboats	B2.L
CG-CVC PL 12-05	Hours of Rest-Implementation of the 2010 Amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978	B5

**PART B: VESSEL MANNING
FORWARD**

The administration of safe manning for regulated U.S. vessels is the distinct responsibility of the U.S. Coast Guard. Internationally, the Administration's responsibility is rooted in the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, Chapter V Regulation 14 (see IMO Resolution MSC.325(90)). An inherent function of the Officer in Charge, Marine Inspection (OCMI) is to establish the minimum number of mariners required, including the qualifications and conditions of service, for the safe operation of inspected and certain uninspected vessels. Accordingly, verification for compliance with those terms and conditions, as well as with applicable statutes for all commercial vessels, is a primary duty of the Marine Inspector.

In carrying out this charge, a host of elements and variables require due consideration and coordination with the vessel owner/operator, including the broad application of domestic regulations, international standards, watchkeeping provisions, vessel particulars, and operational factors. With a view of maintaining national consistency, the information in this Part (B) [legacy Chapters 20-26] has been reformatted and structured to interlink various elements affecting the safe manning and watchkeeping on U.S. vessels and should be referenced comprehensively.

Chapter B1 contains policy and guidance for uniform application of the statutes and regulations that relate to the manning of inspected and uninspected vessels. This material should be used to determine and verify compliance with the minimum safe manning levels, in conjunction with the applicable manning laws, regulations, and official directives. Chapter B2 provides sample manning scales for both general and specific classes of inspected vessels and is intended to help explain the various statutes, regulations, court decisions, and practices associated with minimum manning requirements. Chapter B3 provides supplementary policy and guidance on the manning requirements for credentialed officers, as well as a detailed discussion on the impact of various international standards. Chapter B4 contains supplemental policy and guidance on the impact of laws and international treaties related to the assignment of seamen, credentialed ratings, and non-credentialed crew. Chapter B5 outlines various watchstanding requirements and shipboard working conditions relevant to U.S. vessels. Chapter B6 discusses the acceptance of automated systems to replace specific personnel or to reduce overall crew requirements. Chapter B7 discusses the statutes and regulations that apply to various uninspected vessels, including certain yachts.

NOTE: Unless specified otherwise, the term “credential” used throughout Part B, Chapters 1-7, of this Volume includes legacy merchant mariner licenses (MML), merchant mariner documents (MMD), certificates of registry (COR), and STCW certificates which ceased to be valid after April 9, 2014. For the purposes of these Chapters the terms credentialed master, mate, engineer, and operator mean an officer endorsement as prescribed in 46 CFR Part 11. Unless expressly stated otherwise, the terms rating and crewmember pertain to endorsements as prescribed in 46 CFR Part 12. In general, the term “unlicensed” used throughout Part B refers to ratings and crewmembers, including non-credentialed crew (not otherwise subject to 46 U.S.C. 8701) in some cases. See the Annex for samples of merchant mariner credentials.

PART B

USCG Marine Safety Manual, Vol. III: Marine Industry Personnel
PART B: VESSEL MANNING
CHAPTER 1: GENERAL PROVISIONS FOR VESSEL MANNING

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PART B: VESSEL MANNING**CHAPTER 1: GENERAL PROVISIONS FOR VESSEL MANNING****A. Introduction.**

Part B, Chapters 1-7 (legacy Chapters 20-26), has been structured to interlink various elements affecting the safe manning and watchkeeping on U.S. vessels and should be referenced comprehensively. This Chapter contains guidance for correct, uniform application of the statutes and regulations that relate to the manning of inspected and uninspected vessels. This material is used by Coast Guard marine safety personnel to determine and verify compliance with the minimum safe manning levels, in conjunction with the applicable manning laws, regulations, and official directives. Chapter B2 is intended to assist in the translation of the various statutes, regulations, court decisions, and practices into minimum manning requirements by presenting sample manning scales for both general and specific classes of inspected vessels. Chapter B3 provides supplementary policy and guidance on the manning requirements for credentialed officers, as well as a detailed discussion on the impact of various international standards. Similarly, Chapter B4 contains supplemental policy and guidance on the impact of laws and international treaties, which may imply or indirectly require the assignment of seamen, credentialed ratings, and non-credentialed crew. Chapter B5 outlines various watchstanding requirements and shipboard working conditions relevant to U.S. vessels. Chapter B6 discusses the acceptance of automated systems to replace specific personnel or to reduce overall crew requirements. Chapter B7 discusses the statutes and regulations that apply to various uninspected vessels, including certain yachts.

B. Authority.**1. Statutes And Implementing Regulations.**

- a. Division of crew into watches: 46 U.S.C. 8104; 46 CFR 15.705.
- b. Workhours and rest periods: 46 U.S.C. 8104; 46 CFR 15.1111; 46 CFR 15.710.
- c. Able seamen: 46 U.S.C. 7306-7312 and 8702; 46 CFR 15.1103; 46 CFR 15.840.
- d. Lifeboatmen: 46 U.S.C. 7316 and 8101; 46 CFR 15.845 and 199.100.
- e. Mates: 46 U.S.C. 7102 and 8301; 46 CFR 15.1103; 46 CFR 15.810.
- f. Masters: 46 U.S.C. 7102 and 8301; 46 CFR 15.1103; 46 CFR 15.805.
- g. Radar observers: 46 CFR 15.815.
- h. Chief engineers: 46 U.S.C. 7102 and 8101; 46 CFR 15.1103; 46 CFR 15.820.
- i. Engineers: 46 U.S.C. 7102, 8101 and 8301; 46 CFR 15.1103; 46 CFR 15.825.
- j. Pilots: 46 U.S.C. 7101, 8101 and 8502; 46 CFR 15.812.
- k. Lookouts: 46 CFR 15.850.
- l. Fire patrolmen and cabin watchmen: 46 U.S.C. 8102; 46 CFR 15.855 and 78.30.
- m. Radio officer/radiotelegraph operator watches: 46 U.S.C. 7101-7103, 7318 and 8101; 46 CFR 15.1103; 46 CFR 15.830.
- n. GMDSS Operator(s) and GMDSS Maintenance: 46 CFR 15.817; 47 CFR 80.1073 and 80.1074.
- o. Tankermen: 46 U.S.C. 3703, 7317, 8703, 9101 and 9102; 33 CFR 155.710; 46 CFR 31.15 and 15.860.

PART B: VESSEL MANNING**CHAPTER 1: GENERAL PROVISIONS FOR VESSEL MANNING**

- p. Operators: 46 U.S.C. 8104(h), 8903 and 8904; 46 CFR 15.601, 15.605, 15.610 and 15.705.
- q. Staff officers: 46 U.S.C. 7101, 7102 and 8302; 46 CFR 15.835.
- r. Qualified members of the engineering department (QMEDs): 46 U.S.C. 7313 and 7314; 46 CFR 15.1103.
- s. Ordinary seamen: 46 U.S.C. 8702; 46 CFR 12.25-10 and 15.840.
- t. Crew citizenship: 46 U.S.C. 8103 and 12131; 46 CFR 15.720.

The Secretary of the Department of Homeland Security (Secretary) has authorized the Commandant to perform the functions required of the Secretary by these laws. This authority has been further delegated in Part 1 of Titles 33 and 46, Code of Federal Regulations (CFR), this manual, and instructions issued to marine safety personnel.

2. General Manning Authority.

The general regulations for manning of vessels are contained in 46 CFR 15 (Subchapter B, Merchant Marine Officers and Seamen). Requirements concerning certificated lifeboatmen, fire patrolmen, and other vessel specific manning standards are detailed in the parts of the regulations dealing with the inspection of that particular type of vessel. The general manning and crewing requirements for vessels and facilities operating on the U.S. Outer Continental Shelf are contained in Part 141 of Title 33 (Subchapter N, Outer Continental Shelf Activities).

C. Responsibility Of The Officer In Charge, Marine Inspection (OCMI).

Under 33 CFR 1.01-20, the OCMI is responsible for the enforcement of vessel inspection, navigation, and seamen's laws within a specific zone. In this capacity, the OCMI is responsible for establishing manning levels for various types of vessels. The Certificate of Inspection (COI), Form CG-841, states the minimum number of credentialed officers and crewmembers necessary for the safe operation of inspected vessels, as required by 46 U.S.C. 8101 and 46 CFR 15.501. Also, many uninspected U.S. merchant vessels are subject to the manning requirements of 46 U.S.C. 8103, 8104, 8304, 8701-8703, 8903 and 8904. The International Convention for the Safety of Life at Sea (SOLAS), Chapter V, Regulation 14 requires each vessel to which SOLAS Chapter I applies to be issued a "Safe Manning Document." Refer to Chapter B3 for a more detailed discussion on Safe Manning Documents for inspected and uninspected vessels.

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1. In establishing the safe manning level for a certificated vessel, the OCMI should consider the following factors, in addition to statutory and regulatory requirements:
 - a. Size of the vessel;
 - b. Route;
 - c. Hull and equipment maintenance needs (protective coatings, cargo gear, equipment sophistication, etc.);
 - d. Type and horsepower of propulsion machinery;
 - e. Maintenance of machinery and equipment;
 - f. Degree of automation of deck and engineroom equipment;
 - g. Type of cargo;
 - h. Cargo transfer system;
 - i. Fire protection systems (crew operational requirements)
 - j. General arrangement of vessel equipment as it relates to crew operational requirements;
 - k. Lifesaving equipment
 - l. Level of qualification of each crew position to perform tasks demanded by the vessel's Mission;
 - m. Number of passengers carried;
 - n. Hazards peculiar to route and service;
 - o. Hours of operation within a 24-hour period;
 - p. Successful operation of similar vessels;
 - q. Reasonable work/rest hour limits;
 - r. The existing safety record of the vessel; and
 - s. International Maritime Organization guidelines (IMO Resolution A.1047(27), entitled "Principles of Minimum Safe Manning") and other international standards, as applicable (See paragraph C.2. below).

2. In addition to the factors above, for vessels on international voyages the OCMI should take proper account of existing international (IMO, ILO, ITU, and WHO) instruments in force and any applicable coastal state agreements (i.e. MOU/MOA) which deal with:
 - a. Watchkeeping;
 - b. Hours of work or rest;
 - c. Safety Management;
 - d. Certification of seafarers;
 - e. Training of seafarers;
 - f. Occupational safety, health, and hygiene;
 - g. Crew accommodations and food;
 - h. Security; and
 - i. Radio communications.

The international instruments pertaining to these factors are discussed in greater detail throughout Part B, Chapters 1-7, of this Volume.

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In establishing minimum manning required for safe operation, in addition to mandated levels of manning for safe navigation, the OCMI should also consider other vessel operations, such as cargo handling, emergency evolutions, and preventive maintenance. The sample manning scales in Chapters B2 and B7 have been provided as guidance. The OCMI is not compelled to assign manning levels according to the sample scales presented, as they are neither mandatory, nor all inclusive. To supplement a manning request or when alternatives to the sample manning scales are sought, the cognizant OCMI should request the company responsible for the operation of the vessel to prepare and submit its proposal for the minimum safe manning of that vessel. The company should;

NOTE: In preparing a proposal for the minimum safe manning of a vessel on an international voyage, the company should apply the principles, recommendations and guidelines contained in IMO Assembly Resolution A.1047(27).

1. Make an assessment of the tasks, duties and responsibilities of the vessel's complement required for its safe operation, security, protection of the marine environment, and for dealing with emergency situations. For vessels equipped with Dynamic Positioning Systems (DPS), and/or other specialized operating systems, the proposal should include any particular manning requirements as specified in the applicable operating manual;
2. Ensure that fitness-for-duty provisions and work/rest hour requirements are considered;
3. For seagoing vessels subject to STCW, make an assessment of numbers and grades/capacities in the vessel's complement required for its safe operation, security, protection of the marine environment, and for dealing with emergency situations. The Manning and STCW Certification Reference Tables in Chapter B2 provide guidance on the numbers of credentialed deck and engineer officers appropriate for different sizes of vessels (tonnage), trading areas, and aggregate propulsion power;
4. Prepare and submit to the cognizant OCMI a proposal for the minimum safe manning based upon the above assessment. The proposal should include how the vessel's complement will deal with emergency situations, including the evacuation of passengers, where necessary. Owners/operators are encouraged to prepare and submit completed sample tables of duties and rest logs to conceptually facilitate the OCMI's evaluation of the manning proposal. In many cases these samples can be modeled after similarly operated U.S. flagged vessels within a company's management;
5. Ensure that the proposed minimum safe manning is adequate at all times and in all respects, including meeting peak workload situations, conditions and requirements, and for vessels on international voyages, is in accordance with the principles, recommendations and guidelines contained in IMO Assembly Resolution A.1047(27); and

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6. Prepare and submit to the cognizant OCM I a new proposal for the minimum safe manning of a vessel in the case of changes in trading area(s), construction, machinery, equipment, operation and maintenance or management of the vessel, which may affect the safe manning. Title 46 CFR 15.505 requires that all requests for changes in manning as indicated on the COI, Safe Manning Document (SMD), or Safe Manning Letter (SML) must be made to the OCM I who last issued the COI or SMD/SML, unless the request is made in conjunction with an inspection for certification, in which case the request should be addressed to the OCM I conducting the inspection.

E. Proposal Evaluation.

1. The OCM I should evaluate a company's proposal for minimum safe manning and ensure that:
 - a. The proposed vessel's complement contains the number and grades/capacities of personnel to fulfill the tasks, duties and responsibilities required for the safe operation of the vessel, for its security, protection of the marine environment, and for dealing with emergency situations; and
 - b. The master, officers and other members of the vessel's complement are not required to work more hours than is safe in relation to the performance of their duties and the safety of the vessel, and that the requirements for work and rest hours, in accordance with applicable international and national regulations, can be complied with.
2. If the company's proposal is determined to be insufficient, the OCM I should respond providing justification and outline manning levels that are considered acceptable. This may include requesting an amended minimum safe manning proposal.
3. The OCM I should only approve a proposal for the minimum safe manning of a vessel and issue a COI or SMD/SML if he/she is fully satisfied that the proposed vessel's complement is established in accordance with the principles, recommendations and guidelines contained herein, and is adequate in all respects for the safe operation and security of the vessel and for the protection of the marine environment. The established manning level must not be less than the minimums stipulated by law or regulation. The proposal and resulting determination should be thoroughly documented in MISLE.
4. Unless expressly provided for under law or regulation, the OCM I should consider the circumstances very carefully before allowing a COI or SMD/SML to contain provisions for less than three qualified officers in charge of a navigational watch, while taking into account all the principles for establishing safe manning as applicable. See Chapters B2, B5, and B7 for additional information on vessels permitted to maintain a two-watch system.

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During inspection activities, Coast Guard personnel shall verify compliance with the manning level specified on the COI, or SMD/SML, as well as with any other applicable manning regulations. This should include a review of credentials and the crew list to ensure authenticity, validity, and service within any endorsement restrictions. Coast Guard personnel should be mindful that an MMC authorizes the holder to serve in any capacity endorsed thereon, or in any lower capacity in the same department, or in any capacity covered by a general endorsement with respect to grade, propulsion mode, propulsion power, tonnage, route, and special limitations/waivers. Evidence that the vessel or its crew does not correspond with the relevant requirements or that the vessel is otherwise being operated in such a manner as to pose a danger to persons, property or the environment may lead to clear grounds for a more detailed/expanded inspection and/or audit of the safety management system (if applicable). See paragraph K.3 of this Chapter as well as Chapter B5 of this Manual for additional information.

1. Examples of Clear Grounds.

Examples of clear grounds include but are not limited to;

- a. The vessel is found not in compliance with the minimum manning specified on its COI or SMD/SML (see 46 U.S.C. 3313).
- b. Failure of a crewmember to have/hold an appropriate certificate;
- c. Absence in the watch of a person qualified to operate equipment essential to safe navigation, radio communications, or pollution prevention;
- d. Failure to comply with applicable workhour limits/hours of rest provisions;
- e. Inability of crewmember(s) to perform their assigned duties during abandon ship or fire-fighting drills;
- f. Inability of watchkeeping officers(s) to communicate in English;
- g. Inability of crewmember(s) to operate shipboard equipment necessary to complete operational tests as required during the general examination;
- h. Objective evidence to indicate that the master and/or crew are not familiar with their specific duties and with ship arrangements, installations, equipment, procedures, and ship characteristics that are relevant to their routine or emergency duties;
- i. Indications that key crewmembers are not able to communicate or coordinate with each other or with other persons on board; and

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- j. The company fails to submit a new proposal for the vessel's minimum safe manning when changes in trading area(s), construction, machinery, equipment or operation and maintenance of the vessel have taken place which affects the minimum safe manning.

2. Expanded Inspections.

The following guidance should be adhered to when conducting an expanded inspection:

- a. The expanded inspection should focus on identifying all related deficiencies and subsequently providing the master an opportunity to correct them before concluding the inspection.
- b. For certain vessels, non-compliance may indicate a potential safety management system failure, warranting an additional ISM audit. Guidance regarding the enforcement of the ISM Code is contained in MSM Volume II, Section E.3.A.
- c. Coordination with the Investigations Division may be necessary should the expanded inspection indicate a possible violation or question crew competency.

3. Control Procedures and Deficiencies.

A more detailed/expanded inspection and/or audit of the safety management system (if applicable), could result in a non-conformity, deficiency, removal of the COI or SMD/SML, and/or violation of law or regulation. In the case of an inspected vessel, the OCMi can consider the removal of the COI or issuing a deficiency where the conditions of the vessel or its crew do not correspond substantially with the applicable regulations. The Vessel/Facility Inspection Requirements, Form CG-835, should be issued to document deficiencies, including prior to departure (“NO-SAILS”) when warranted. All deficiency descriptions should be as specific and descriptive as possible using quantifiable language and include the convention or regulatory cites for reference. A compliance date appropriate to the nature of each deficiency should be assigned. In making the determination, the OCMi should consider the following: the nature and severity of the deficiency, the time normally needed to correct such a deficiency, the availability of resources to correct the deficiency, and the vessel’s itinerary. For uninspected vessels, the OCMi can consider the removal of the SMD/SML. However, this may not have the same, immediate, effect as removing the COI or issuing a NO-SAIL requirement to an inspected vessel. In the case where the conditions of an uninspected vessel or its crew do not substantially correspond with the applicable regulations and a serious threat to the safety of personnel or the vessel or a serious risk to the environment is clearly evident the OCMi should consider available authority alternatives for ensuring compliance prior to departure. In either the case of an inspected or uninspected vessel, evidence, such as persistent non-compliance with rest hour requirements, may warrant a violation or personnel investigation. The marine inspector should ensure all actions are documented in MISLE. Any actions that restrict the movement or operations of a vessel should be accompanied by a MISLE “Operational Control.”

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For the purpose of manning, the cognizant OCMI refers to the zone in which the vessel primarily operates. The vessel should be included in the cognizant OCMI's MISLE Fleet of Responsibility. When a vessel is certificated in one zone for operation in another, to ensure all OCMI specific interests are addressed, the development of the vessel's minimum safe manning should be coordinated between both OCMI's. If a vessel changes its primary area of operation to another zone, the OCMI should ensure that any outstanding inspection activities are updated, filed and entered into MISLE. The receiving OCMI should add the vessel to their MISLE Fleet of Responsibility. For transient vessels that call regularly on multiple OCMI zones, the cognizant OCMI is the OCMI that issued the COI. Manning of special or unique vessels shall be coordinated with Commandant (CG-CVC). Consult Volume I of this manual concerning waivers and appeals of manning requirements. In accordance with 46 CFR 15.510, any person directly affected by a decision or action taken under Part 15, by or on behalf of the Coast Guard, may appeal in accordance with 46 CFR 1.03.

H. Citizenship Requirements For Seamen On U.S. Documented Vessels And Foreign Vessels Within U.S. Jurisdiction.**1. Definition Of Seaman.**

In general, the term "seaman" is interpreted broadly by the Coast Guard to mean any individual engaged or employed in the business of a vessel or a person whose efforts contribute to accomplishing the vessel's business, whether that person is involved with operation of the vessel. This interpretation is consistent with expressions of congressional intent, and with judicial opinions regarding the use of the term "seaman" throughout Title 46 of the U.S. Code.

- a. A crewmember may be a seaman although he or she is not occupying a position required by the Certificate of Inspection or other Safe Manning Documentation. However, persons who are on board the vessel in a capacity other than as crewmembers are considered passengers and are not subject to the citizenship requirements; except if the person is filling a position that is designated as a "person in addition to the crew". Reference MSM Volume II Section A Chapter 3.H.2 for additional information on Persons On-Board Other Than the Minimum Operating Crew. For information on Riding Gangs, reference 46 USC 8106.
- b. Under normal conditions, the Coast Guard does not consider a person who is briefly visiting the vessel in a consulting capacity (e.g., a vendor's technical representative) to be a crewmember. Similarly, the Coast Guard does not apply citizenship requirements to shoreside personnel who come on board vessels while they are not underway to load or unload cargo or to perform services such as maintenance of shipboard equipment. However, under most circumstances, individuals being

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compensated for performing their jobs while the vessel is underway are considered seamen for the purpose of applying citizenship requirements. Waiters, entertainers, industrial personnel, oil recovery workers, riding maintenance crews, and others employed in the business of the vessel are considered seamen.

- c. The actual details of a particular situation will determine whether in fact the individual in question is a seaman for the purpose of 46 U.S.C. 8103.

2. General Citizenship Requirements.

46 U.S.C. 8103(a) states that only a citizen of the United States may serve as master, chief engineer, radio officer, or officer in charge of a deck or engineering watch on a vessel documented in the United States. Section 8103(b) further states that each unlicensed seaman must be a citizen of the United States or an alien lawfully admitted to the United States for permanent residence, and not more than 25 per cent of the total number of unlicensed seamen on the vessel may be permanent resident aliens. 43 U.S.C. 1356 also imposes U.S. citizenship requirements on U.S. vessels and certain foreign vessels engaged in Outer Continental Shelf (OCS) activities on waters above our OCS.

a. 46 U.S.C. 8103 Exemptions.

Yachts, fishing vessels fishing exclusively for highly migratory species, and fishing vessels fishing outside the exclusive economic zone of the United States are specifically exempted from the unlicensed seaman citizenship requirements. Except for the master, any unlicensed persons serving aboard such vessels do not have to be U.S. citizens. 46 U.S.C. 12131 provides that a documented vessel may be placed under the command only of a citizen of the United States, even if the individual is unlicensed. (See B1.H.4. or Chapter B7 of this Volume for further discussion.)

b. 43 U.S.C. 1356 Exemptions.

U.S. citizenship requirements in 33 CFR 141 do not apply to a foreign owned and controlled units operating on the OCS. To be considered foreign-owned and foreign-controlled, a unit must be more than 50 percent owned and controlled by a foreign citizen(s) or entity. However, U.S. citizenship requirements may be imposed if the President determines that the vessel's flag country, or the nation that the owners or charters are citizens of or incorporated within, are discriminating against American vessels by excluding U.S. citizens and resident aliens from U.S. vessels engaged in offshore activities off of its shore. It is recommended that applicants for these exemptions consult 33 CFR 141 prior to submitting an exemption request.

(1) Provisions For Bareboat Chartered Vessels.

Ownership and control of an OCS unit can be significantly altered by bareboat charter. [e.g. the owner/operator of a foreign vessel bareboat chartered to a U.S. citizen or corporation must employ U.S. citizens/resident aliens. Or if a foreign-flagged, American owned vessel is under a long term bareboat charter to a foreign citizen or corporation, it may be eligible for an exemption. (See

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B1.H.5.c of this Chapter for additional guidance.)] Refer questions involving bareboat charter to Commandant (CG-CVC).

3. Subsidy Vessels.

Citizenship requirements for U.S. vessels for which a construction or operating differential subsidy has been granted are stated in 46 U.S.C. 8103(c) and (d).

4. Commercial Fishing Vessels.

The citizenship requirements applicable to fishing industry vessels are based on the specific class of vessel and its area of operation.

a. Within U.S. Exclusive Economic Zone (EEZ).

46 U.S.C. 8103(i) provides that each unlicensed seaman on board a U.S. flagged commercial fishing, fish processing or fish tender vessel that is engaged in the fisheries in the navigable waters of the United States or within the EEZ must be:

- (1) a citizen of the U.S.;
- (2) an alien admitted to the U.S. for permanent residence;
- (3) any other alien allowed to be employed under the Immigration and Nationality Act 8 U.S.C. 1101 et seq; or
- (4) an alien allowed to be employed under the immigration laws of the Commonwealth of the Northern Mariana Islands if the vessel is permanently stationed at a port within the Commonwealth and the vessel is engaged in the fisheries within the exclusive economic zone surrounding the Commonwealth or another United States territory or possession.

This provision allows 100% of the unlicensed seamen employed on such vessels operating within our EEZ to be resident aliens. However, not more than 25% of the unlicensed seamen on each vessel may be non-resident aliens identified in subparagraph B1.H.4.a.(3) above. (As noted previously in paragraph B1.H.2.a, a fishing vessel fishing exclusively for highly migratory species is exempt from these requirements.)

b. Outside U.S. EEZ.

A fish processing vessel and fish tender vessel operating outside the U.S. EEZ must meet the more stringent citizenship requirements of 46 U.S.C. 8103(b). A combination catcher/processor is considered a fish processing vessel unless it engages exclusively in fishing without processing any catch. A fishing vessel fishing outside the EEZ is exempt from the citizenship requirements for unlicensed seamen. (See Chapter B7 of this Volume for more information.)

c. Distant Water Tuna Fleet.

The Coast Guard and Marine Transportation Act (CGMTA) of 2006 (Pub. L. 109-241, Sec. 421), as amended by the 2010 Coast Guard Authorization Act (CGAA, Pub.

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L. 111-281, Sec. 904) and the Coast Guard and Maritime Transportation Act of 2012 (Pub. L. 109-241, Sec. 701), specifies the requirements, restrictions and limitations for a foreign citizen manning exemption on Distant Water Tuna Fleet (D WTF) purse seine fishing vessels licensed to fish under the 1987 South Pacific Tuna Treaty (SPTT). Owners/operators of these vessels should provide documentation, in accordance with the established Commandant (CG-CVC) procedure, to validate and receive a determination for credential equivalency and foreign citizen manning exemption applicable to their vessel. Those vessels that are found to satisfy the requirements and provisions of the CGMTA 2006, as amended, will receive a foreign citizen manning exemption letter from the Coast Guard, authorizing the use of foreign citizens to meet U.S. manning requirements (excluding the master).

5. Waivers.

46 U.S.C. 8103(b)(3) authorizes the Secretary to waive a citizenship requirement, other than the requirement that applies to the master of a documented vessel, with respect to an offshore supply vessel or other similarly engaged vessel that operates from a foreign port; a mobile offshore drilling unit or other vessel engaged in support of exploration, exploitation, or production of offshore mineral energy resources operating beyond the waters above the U.S. OCS; and any other vessels if the Secretary determines, after investigation, that qualified seamen who are citizens of the United States are not available. Under the Act of December 27, 1950, (46 App. U.S.C. 1 note; 64 Stat. 1120), "An Act to authorize the waiver of the navigation and vessel-inspection laws" the Coast Guard is directed to waive compliance of the navigation and vessel-inspection laws upon the request of the Secretary of Defense, to the extent deemed necessary in the interest of national defense by the Secretary of Defense. 43 U.S.C. 1356 authorizes "exemptions" from citizenship requirements for vessels operating on waters above the U.S. OCS.

a. Offshore Supply Vessels (OSVs) And Mobile Offshore Drilling Units (MODUs).

46 U.S.C. 8103(b)(3)(A) and (B) as implemented by 46 CFR 15.720, authorize OSVs operating from foreign ports and MODUs operating beyond the waters above the U.S. OCS, to employ over 25% of crew as aliens lawfully admitted for permanent residence. As noted below, this general waiver does not apply if the OSV or MODU, though it has departed from a foreign port, engages in operations on the U.S. OCS. In these cases, the vessel may be subject to the separate citizenship requirements of the Outer Continental Shelf Lands Act, 43 U.S.C. 1356(c). See subparagraph 20.H.5.e.(1) below, 33 CFR 141, and NVIC 7-84 for guidelines on exceptions from OCS citizenship requirements and procedures relating to waivers from these requirements. U.S. vessels operating under the waivers provided for under 46 U.S.C. 8103(b)(3)(A) or (B) do not have secure areas (see 33 CFR 101.105) and therefore are not required to observe TWIC requirements. However, all other MTSA requirements remain unchanged. This waiver allows offshore supply vessels and mobile offshore drilling units to employ foreign crew when operating from a foreign port or beyond the Outer Continental Shelf (see 72 FR 1652-AA41, 16 [January 25, 2007]). However, when these vessels are not operating under these waivers (e.g., within the U.S. Outer Continental Shelf and shoreward), they do have secure areas and are required to comply with TWIC requirements.

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NOTE 1: Section 617 of the Coast Guard Authorization Act of 2010 (PL 111-281) amended 46 U.S.C. 2101(19) by removing the tonnage limitation in the definition of ‘offshore supply vessel.’ As a result, OSVs as defined under 46 U.S.C. 2101(19) are covered under this waiver, while operating from a foreign port, regardless of tonnage limitation (46 CFR 15.720(b)(1)). The 1,600 GRT (GT ITC if GRT is not assigned) limitation specified in 46 U.S.C. 8103(b)(3)(A) pertains to other similarly engaged vessels, which are not covered under 46 CFR 15.720(b). For other vessels in service similarly engaged, see Section H.5.b. of this Chapter.

NOTE 2: The term OSV, as used in this section, includes those vessels certificated under Subchapters L, I and T as noted in 46 CFR 125.100(b), as well as crew boats certificated as small passenger vessels when carrying individuals other than those defined in 46 U.S.C. 2101(21) [see H.R. Rep. No 98-338, at 138 (1983) (commenting on Section 3301 of P.L. 98-89 (S. 46))] while engaged in support of exploration, exploitation or production of offshore mineral or energy resources. However, it does not include multi-service (Certificated) vessels operating in any service other than as an OSV (see Chapter B2, Section V). For other vessels in service similarly engaged, see Section H.5.b. of this Chapter.

- (1) This waiver was necessary to allow the described vessels to operate in areas subject to foreign jurisdiction, not necessarily for global circumnavigation, where local citizenship requirements may apply and where the recruitment of U.S. citizens may be impractical. Due to the limited possibilities for employment of non-U.S. credentialed officers in most segments of the maritime industry, the U.S. has not entered into agreements with other Parties that would allow the endorsement of certificates issued in accordance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), as amended. In consideration of this conflict and until such a time that the U.S. fully implements STCW Regulation I/10, through 46 CFR Part 11 Subpart J, owners/operators of vessels subject to 46 CFR 15.720(b) may request that the cognizant OCM I add the following endorsement to the COI;

WHEN OPERATING FROM A FOREIGN PORT, NOT ON U.S. WATERS, FOREIGN NATIONALS WITH VALID STCW CERTIFICATES, ISSUED BY A COUNTRY DEEMED BY THE IMO TO BE GIVING FULL AND COMPLETE EFFECT TO THE STCW CONVENTION, AS AMENDED, MAY SERVE AS AN OFFICER WITHOUT ADDITIONAL ENDORSEMENT, PROVIDED THE MASTER ADHERES TO TITLE 46, CODE OF FEDERAL REGULATIONS (CFR) 15.720(D). THE MASTER OF THE VESSEL MUST BE A U.S. CITIZEN, DULY CERTIFICATED BY THE UNITED STATES.

THIS ENDORSEMENT ESTABLISHES CONFORMITY WITH THE SAFE MANNING REQUIREMENTS OF THE UNITED STATES PERTAINING TO

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46 CFR 15.720(B) IN FULL CONSIDERATION OF THE GUIDING PRINCIPLES FOR PORT STATE CONTROL (APPENDIX 11, IMO RESOLUTION 1052(27), AS REVISED).

Failure to comply with the COI will constitute a violation of 46 CFR 15.515. While operating within the terms of this endorsement, the Master should pay due regard to paragraphs (2) and (3) below. The Coast Guard will advise the maritime industry when the United States has entered into an agreement for the recognition, by endorsement, of certificates issued by or under the authority of another Party.

- (2) Vessel owners/operators should be cognizant of the citizenship waiver limitations for vessels returning to the U.S. after operating from a foreign port. The citizenship waiver found in 46 CFR 15.720(b)(1) applies only to OSVs operating from a foreign port. While it is beyond the scope of this guidance to describe every situation that constitutes "operating from a foreign port," any voyage that begins, terminates or includes intermediate port calls at a U.S. port or place is not considered "operating from a foreign port." The citizenship waivers in 46 CFR 15.720(b) do not apply to any vessel operating in the waters above the U.S. OCS. See 46 CFR 15.720(c). The term "operating" in that subsection is not limited solely to resource exploration or exploitation activities but includes field or ocean transits. Subject vessels must be manned with a crew that is fully compliant with the U.S. citizenship, credentialing, and Transportation Worker Identification Credential (TWIC) requirements.
- (3) 46 CFR 15.720(d) requires the master to assure that any replacements of crewmembers by non-U.S. citizens be with an individual who holds a credential that is equivalent in experience, training, and other qualifications to the U.S. credential required for the position. The master of the vessel should ensure that the mariner's qualifications as stated on his or her STCW endorsement are equivalent or superior to the officer endorsement qualifications required by the vessel's COI. Operators of vessels required to comply with the provisions of SOLAS Chapter IX are reminded that, in accordance with clause 6.2 of the ISM Code, it is the responsibility of the Company to "ensure that each vessel is manned with qualified, certificated and medically fit seafarers in accordance with national and international standards."
- b. Other Vessels Engaged In OCS Activities.
The above general waiver only applies to OSVs and MODUs. Vessels of less than 1,600 GRT (GT ITC if GRT is not assigned), which are not OSVs, but are "similarly engaged" and operated from a foreign port; and vessels which are not MODUs, but are nonetheless engaged in support of exploration, exploitation or production of offshore energy resources beyond the waters above the U.S. OCS must apply to Commandant (CG-CVC) for an individual waiver. For additional clarification on

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tonnage applicability see paragraph B2.A.2. The CG-CVC waiver should be similarly endorsed in accordance with paragraph B1.H.5.a(1).

c. Miscellaneous Vessel Types.

Vessel operators of any other vessel may apply for a waiver under subsection 8103(b)(3)(C) when "qualified seamen who are citizens of the United States are not available." Due to the availability of U.S. merchant mariners, requests for waivers under this section are rare. These requests usually must be supported by Department of Labor (DOL) certifications that qualified citizens cannot be found for the identified positions.

d. Commercial Fishing Vessels.

Section 8103(i) of title 46 U.S.C. allows 100% of the unlicensed seamen on commercial fishing vessels operating inside the U.S. EEZ to be permanent resident aliens. There is no waiver of citizenship requirements necessary for such vessels. Commercial fishing vessels operating inside the U.S. EEZ wishing to employ more than 25% of the unlicensed crew who are non-resident aliens (Section 8103(i)(2)) should request a waiver in accordance with 46 CFR Part 28 Subpart I. Also, fish processing vessels and fish tender vessels operating outside the EEZ are required to meet the statutory requirements of Section 8103(b) and may request a waiver in accordance with 46 CFR Part 28 Subpart I.

e. OCS Citizenship "Exemptions" (Waivers).

43 U.S.C. 1356 and 33 CFR 141 provide three individual classes of exemptions for vessels and other units (including facilities, rigs, platforms or structures), engaged in OCS activities in waters above the United States OCS.

(1) U.S. Controlled Or Owned Vessels/Units.

A temporary exemption may be granted to U.S. controlled or owned vessels/units if there are not a sufficient number of U.S. citizens or resident aliens qualified and available for work. Congress has made the Coast Guard the agency responsible for accepting such waiver requests and granting such waivers if no U.S. citizens or resident aliens can be located for employment. (Refer to NVIC 7-84 for guidelines on exceptions from OCS citizenship requirements and procedures relating to waivers from these requirements.)

(2) National Registry Manning Requirement.

A foreign-flag, American-owned vessel/unit may receive an exemption for the marine crew from the citizenship requirements if the flag country of the vessel had a national registry manning requirement in effect before 18 September 1978 that required the flag country's nationals aboard vessels/units flying its flag. Also, contractual agreements made on an individual basis for a specific vessel may warrant the issuance of an exemption if such agreements were in effect before 18 September 1978.

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The President of the United States may grant an exemption for any position aboard a vessel if he determines that employment of American citizens or resident aliens would not be consistent with the national interest. This exemption would potentially be applied to address a national emergency or circumstances involving special foreign policy implications.

6. Enforcement.

Whenever a question arises as to whether or not a particular individual is properly documented as a permanent resident alien or other alien allowed to work, the Coast Guard officer should consult with local officials of the USCIS. Coast Guard units that are normally involved in enforcement of laws relating to fisheries should establish contact with the local INS office to discuss how questions concerning aliens will be addressed when they arise.

I. Crew Vacancies And "Sailing Short."

(See 46 CFR 15.725)

1. Introduction.

46 U.S.C. 8101(e) permits a master to "sail short," e.g., without meeting the manning requirements stated on the COI, under certain unusual circumstances. At the outset of a voyage a vessel should "possess" the complement of credentialed officers and crewmembers stipulated on the COI. The Shipping Articles, Form CG-705A, if required, would provide acceptable evidence of this. When vacancies occur at or after the time the crew is required to be aboard as specified in the Shipping Articles, the vessel may sail short, provided the vacancy was without the consent, fault, or collusion of the master, owner, or any other person interested in the vessel, and the master has made a conscientious effort to find a qualified replacement. In addition, the master must be satisfied that the vessel is safe to make the intended voyage.

2. Restrictions.

Convenience-type discharges, vacation time granted in accordance with collective bargaining agreements, etc., are considered "consent" actions and, therefore, not appropriate reasons for sailing short. Desertion, failure to join, hospitalization, etc., are considered "no consent" cases and, may be grounds for sailing short if the master considers the remaining complement sufficient. However, at each port or place called at during the voyage (including the port of departure), the master has an obligation to obtain qualified replacements if they are available. The master need not obtain permission to sail short, but must report the situation in writing within 12 hours of arrival at the port of destination. The master's decision to sail short is subject to the OCMI's review and appropriate administrative action should be taken if warranted (see the Commandant's Decisions on Appeal, Nos. 2136 (Dillon) and 2172 (Chapman)).

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NOTE: The difference between the sailing-short provision and a national defense waiver is based upon timing and purpose. The waiver is a shortage sanctioned for national defense considerations, and is obtained before the voyage. Sailing short is based solely on the master's judgment, and is the subject of an after-the-fact report, and is not based on national defense considerations.

3. Filling Vacancies With Foreign Crewmembers.

46 U.S.C. 8103(e) provides that if a documented vessel is "deprived for any reason of the services of an individual (except the master and the radio officer)" while on a foreign voyage, the resulting vacancy can be filled with an individual not a citizen of the United States "until the vessel's return to a port at which in the most expeditious manner a replacement who is a citizen of the United States can be obtained." The non-U.S. citizen crewmember should hold an equivalent certificate of competency appropriate for the position being filled. The vessel would be expected to replace the non-U.S. citizen crewmember at any subsequent port call where a qualified U.S. citizen could be dispatched to meet the vessel. Operators are reminded that, whenever a vessel is deprived of the service of a member of its complement and the master or person in charge is unable to find appropriately credentialed personnel to man the vessel, a report of sailing short must be filed in writing with the Officer in Charge, Marine Inspection (OCMI) having cognizance for inspection in the area in which the vessel is operating, or the OCMI within whose jurisdiction the voyage is completed. See 46 CFR 15.725 and paragraph B.1.H.5.a.(2). Vessels that have "secure areas" and are required to comply with the TWIC requirements should refer to the applicable procedures on security measures for access control per 33 CFR 104.265.

J. Maintenance Department.

1. Background.

In recent years, labor-saving devices and operational innovations have been introduced on merchant vessels that permit adjustments in the composition of the minimum crews required by the Coast Guard. These adjustments provide the vessel's master the flexibility to use the crew more effectively while still ensuring that sufficient qualified personnel are carried for continued safe operation of a vessel. Such adjustments may include maintenance-persons within the deck and engineering departments, or through the formation of a maintenance department. Personnel so assigned would perform duties on a regular work day basis, and would not be considered members of an established watch, as defined in 46 CFR 15.705.

2. Manning Factors.

The OCMI's authority for approving requests for changes in the required crew composition is contained in 46 CFR 15.501 and 46 U.S.C. 8101. These sections state that the COI issued to an inspected vessel specifies the minimum complement of licensed individuals and crew considered necessary for the safe operation of the vessel. Among the factors to be considered by the OCMI in determining the minimum crew complement are: installed equipment, degree of automation, use of labor saving devices, workhour limits, and the organizational structure of the vessel.

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A modern vessel with a traditional deck/engine department organization may typically require 6 ABs and 3 QMEDs. When permitted by the COI, some of the individuals in a vessel's required crew complement may be engaged as maintenance-persons (deck or engine). All personnel so designated will hold ratings as AB for deck maintenance-person or an appropriate rating for engine maintenance-person. Deck or engine personnel assigned to their respective departments are subject to the crossover prohibition of 46 U.S.C. 8104(e). If the vessel establishes an acceptable maintenance department, the persons assigned to the maintenance department are available as a vessel's maintenance crew and are not subject to the crossover prohibition. These personnel may then be employed in a manner best satisfying the vessel's needs that is left to the discretion of the vessel master provided the master operates the vessel in accordance with the approved automation plan. Vessels reorganized with a maintenance department or maintenance-persons assigned to deck and engine departments would normally require credentialed ratings including 3 ABs in the deck department, and at least 5 maintenance-persons. (See Chapter B4 of this Volume for further discussion and sample manning scales for vessels which employ maintenance-persons as required crew.)

4. Watch Augmentation.

The required personnel in the maintenance department shall hold appropriate rating endorsements (AB, QMED, etc.) so that they may be used by the vessel's master to augment navigational or machinery space watches should the need arise. For those personnel not assigned to the maintenance department, watch assignments would be governed by departmental affiliation, except under circumstances noted in 46 U.S.C. 8104(f). For personnel assigned to the maintenance department, watch augmentation will be based on individual qualifications. For example, an individual who holds both deck and engine qualifying ratings assigned to the maintenance department may be assigned to deck or engine watches. During periods in which these maintenance-persons are used to augment navigational or machinery space watches, they become part of the watch and are subject to successive watch rotation (46 CFR 15.705). Engagement of maintenance-persons with the intention of assigning any individual alternately between deck and engineering watch sections on a routine basis would be considered a violation of 46 U.S.C. 8104(e).

5. Maintenance Department Request.

A request for implementation of a maintenance department on an inspected vessel will require complete documentation from the vessel's operator describing how such a department will function within the shipboard management arrangements. The request must be made to the OCMI who last certificated the vessel or is currently conducting an inspection for certification. The documentation must include an operating manual for the vessel that describes the structure of the maintenance department, qualifications of the maintenance-persons, the responsibilities and duties of all vessel personnel when the maintenance department concept is implemented, various operating conditions under

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which personnel would be rotated out of the department (e.g., watchstanding augmentation), and a planned maintenance program. For vessels subject to the ISM Code, this information can be included in a revised section of the Safety Management System and submitted in lieu of a separate operating manual. (Consult Chapter B4 for additional information concerning Maintenance Departments.)

K. Workhour Limits (Domestic).

(See Chapter B5 of this Volume for additional discussion regarding the applicability of STCW requirements.)

1. Tankers.

The Oil Pollution Act of 1990 (OPA 90) amended 46 U.S.C. 8104 by adding a new Subsection (n) which reads as follows: "On a tanker, a licensed individual or seaman may not be permitted to work more than 15 hours in any 24 hour period, or more than 36 hours in any 72-hour period, except in an emergency or a drill. In this subsection, "work" includes any administrative duties associated with the vessel whether performed on board the vessel or onshore."

2. Other Vessels.

Various sections of 46 U.S.C. 8104 limit the number of hours that credentialed officers and/or crewmembers may be required to work on certain classes of vessels. This does not preclude seamen from voluntarily working beyond those limits and possibly becoming fatigued from excessive hours of overtime. OCMI's should consider all relevant information described in B1.C in establishing required manning levels. While there may be no definitive, scientific basis for a maximum workhour limit for vessel crewmembers, the OCMI has the discretion to impose manning levels based on a specified reasonable workhour limit taking into account fatigue and other human factors. A twelve hour work day, applied in a manner similar to the above workhour limit for tankers, is considered a reasonable workhour limit for other classes of vessels. It is recommended that the OCMI consider this workhour limit in establishing manning levels for non-tankers, adjusting for vessel specific factors that might either alleviate or exacerbate fatigue. Likewise, the OCMI may appropriately consider working conditions and workhour limits established through a collective bargaining agreement in arriving at a final manning determination. (See Chapter B5 of this Volume for additional discussion regarding working conditions.)

3. Enforcement.

During inspection activities, Coast Guard personnel shall:

- a. Make general inquiries concerning the working conditions on board the vessel.
- b. Make a specific effort to ascertain whether the vessel's crew is complying with the applicable watchkeeping provisions and rest requirements. A review of vessel logs, maintenance records, and crew interviews with the captain and crew may be

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conducted at routine vessel inspections to validate adequacy of the manning level to maintain the vessel in safe operating condition. Questions asked during interviews should be framed to elicit objective responses that can be used to ascertain compliance with applicable work and rest requirements.

- (1) Ensure that any indication that the applicable watchkeeping provisions and rest requirements are not complied with, or that workhours have been or may be exceeded, or that required maintenance has not been performed because of inadequate manpower is brought to the attention of the OCMI. The OCMI should review the vessel's manning complement and determine whether the required complement should be modified to ensure that the vessel can be safely operated within the applicable requirements. Any modifications should be discussed with the owner/operator.
- (2) Ensure that any resultant modifications are reflected on the COI as the minimum required manning.

See Section B.5.F.3 for additional discussion on U.S. Coast Guard responsibilities, as well as Sections B6.A.4 and 5 for automated systems.

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PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES****A. Introduction.**

1. Part B, Chapters 1-7 (legacy Chapters 20-26), has been structured to interlink various elements affecting the safe manning and watchkeeping on U.S. vessels and should be referenced comprehensively. Refer to paragraph B1.A for a summary of all Chapters. This Chapter is intended to assist the Officer In Charge, Marine Inspection (OCMI) in the translation of the various statutes, regulations, court decisions, and practices into minimum manning requirements on a vessel's Certificate of Inspection (COI). Sample manning scales are presented below for both general and specific classes of vessels. It must be clearly understood that these scales are stated for conventional (NON-AUTOMATED) vessels, and do not invalidate the basic legal requirements outlined in Chapter B1 of this Volume. The OCMI is not compelled to assign manning levels according to the sample scales presented below, as they are neither mandatory, nor all inclusive. They are representative of specific classes of certificate vessels. The OCMI should consider the manning level recommended by the appropriate scale as a starting point, in conjunction with the manning proposal (Section B1.D), and then determine whether fewer or more personnel are required for the safe operation of the vessel based on local circumstances and other relevant considerations which are spelled out in Section B1.C. Guidance regarding the proper entry of COI manning data is provided in Section A. Chapter 3.H. of the Marine Safety Manual, Volume II. Where manning reductions are requested or contemplated by virtue of vessel automation considerations, the OCMI should also follow the guidance in Chapter B6 of this Volume. Chapter B3 provides supplementary guidance on the manning requirements for credentialed officers. Chapter B4 provides additional guidance on manning requirements for credentialed ratings and non-credentialed crew. Manning of special or unique vessels shall be coordinated with Commandant (CG-CVC). Inquiries and correspondence concerning manning requirements should be directed to Commandant (CG-CVC).
 2. The regulatory text of Title 46 CFR Chapter I, Subchapter B, referenced throughout Part B, Chapters 1-7 of this Volume uses the term "gross tons." In each relevant instance this term refers to the gross tonnage under the Regulatory Measurement System (GRT), if assigned, and that vessels without an assigned GRT use their gross tonnage under the Convention Measurement System (GT ITC) to apply provisions dependent on "gross tons."
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B. Mechanically-Propelled Passenger Vessels Of 100 GRT Or More.

1. Sample Scales.

a. Ocean Or Coastwise.

1-Master	* -Patrolman or Watchman
*1-Chief Mate	*1-Chief Engineer
*1-2nd Mate	*1-1st Assistant Engineer
*1-3rd Mate	*1-2nd Assistant Engineer
*6-Able Seamen	*1-3rd Assistant Engineer
*3-Ordinary Seamen	*3-Firemen/Watertenders
*3-Radio Officers	*3-Oilers
* -Certificated Lifeboatmen	

b. Great Lakes.

1-Master/1st Class Pilot	*1-Chief Engineer
3-Mates/1st Class Pilots	*1-1st Assistant Engineer
*6-Able Seamen	*1-2nd Assistant Engineer
*3-Ordinary Seamen	*1-3rd Assistant Engineer
*1-Patrolman or Watchman	*3-Firemen/Watertenders
* -Certificated Lifeboatmen	*3-Oilers

c. Lakes, Bays, And Sounds (Except Great Lakes).

(1) Crew (General Operations).

1-Master/1st Class Pilot	*1-Patrolman or Watchman
*1-Mate/1st Class Pilot	1-Chief Engineer
*4-Able Seamen	*1-1st Assistant Engineer
*2-Ordinary Seamen	*2-Fireman/Watertenders
* -Certificated Lifeboatmen	*2-Oilers

(2) Crew (12-Hour Operation).

1-Master/1st Class Pilot	*1-Patrolman or Watchman
*1-Inland Mate	*1-Chief Engineer
*1-Inland Mate	*1-Fireman/Watertender
*2-Able Seamen	*1-Oiler
*1-Ordinary Seaman	
* -Certificated Lifeboatmen	

d. Rivers.

1-Master/1st Class Pilot	*1-Chief Engineer
*1-1st Class Pilot	*1-1st Assistant Engineer
*1-Mate	*2-Firemen/Watertenders (NC)
*1-Patrolman or Watchman	*2-Oilers (NC)
*8-Deckhands	
* Denotes Variables	

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**2. Variables.a. Mates.

The number of credentialed mates required on inspected oceangoing or coastwise vessels depends on the gross tonnage of the vessel (see 46 U.S.C. 8301 and 46 CFR 15.810). Mates on Great Lakes Vessels must also possess First Class Pilot endorsements, (46 CFR 15.812).

b. Mate/First Class Pilots.

On inland vessels a sufficient number of Mates/First Class Pilots should be provided to divide watchkeeping duties into at least two watches when the vessel operates more than 12 hours in a 24 hour period.

c. Able Seamen (ABs).

Depending on the size of the vessel and its needs for safe navigation, this number may vary. Except for vessels on rivers or lakes (other than the Great Lakes), at least 65 percent of the deck crew must be ABs (see 46 U.S.C. 8702, 46 CFR 15.840, and Chapter B4).

d. Ordinary Seamen.

This number will vary in proportion to total deck crew.

e. ABs And Ordinary Seamen.

On ocean or coastwise routes, the number of ABs and ordinary seamen carried must be sufficient for the watch system provisions of 46 U.S.C. 8104 and 46 CFR 15.840. Deckhands may be permitted in lieu of ABs and ordinary seamen on river routes. A specially trained ordinary seaman may be substituted for able seaman in certain situations. If an ordinary seaman receives additional lookout procedure training, it is within the discretion of the local OCMI to allow the substitution of an able seaman with a specially trained ordinary seaman and to amend the COI to reflect the situation. But under no circumstances is the OCMI to amend a COI to reflect a manning scale which contradicts 46 U.S.C. 8702(b), which mandates that 65% of the deck crew shall be an able seaman. Reference Section B4.D.1 for additional information concerning the substitution of able seamen with specially trained ordinary seamen.

f. Certificated Lifeboatmen.

The number of certificated lifeboatmen must be separately stated on the COI. This number will vary depending on the lifeboat and life raft requirements for each vessel, in accordance with the regulations (see 46 CFR 15.845 and 199.100). There must be a sufficient number of persons certified as lifeboatmen on board the vessel for mustering and assisting untrained persons. There must be a sufficient number of deck officers, able seamen, or persons certificated as lifeboatman on board the vessel to operate the survival craft and launching arrangements required for abandonment by the total number of persons on board. There must be one person placed in charge of each survival craft to be used. The person in charge must be a deck officer, able seaman, or other person certificated as a lifeboatman. The OCMI, considering the nature of the voyage, the number of persons permitted on board, and the characteristics of the vessel, may permit persons practiced in the handling and

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operation of liferafts or inflatable buoyant apparatus to be placed in charge of liferafts or inflatable buoyant apparatus. There must be a second-in-command designated for each lifeboat. This person should be a deck officer, able seaman, or other person who is certificated as a lifeboatman. For example, the required number of lifeboatmen for a vessel equipped with two lifeboats (one on each side of the vessel) would be four (one primary and one secondary, per lifeboat). Alternatives for passenger vessels in a specified service can be found in 46 CFR 199.630.

- g. Patrolmen.
The number of patrolmen is determined by the number of patrol routes required to cover all parts of the vessel accessible to passengers or crew, so that each space will be covered at least once every hour from 10 p.m. to 6 a.m. (46 CFR 78.30-10; 46 CFR 15.855).
 - h. Watchmen.
The number of watchmen is determined by the need to provide a suitable watch to be stationed in the passenger accommodation areas on each deck during the night (46 CFR 78.30-15; 46 CFR 15.855).
 - i. Credentialed Engineers. See Chapter B3 of this Volume.
 - j. Firemen/Watertenders And Oilers.
The number and specific ratings will vary based on the number and location of boilers, type of fuel, number of furnaces, arrangement of machinery spaces, type and degree of automation, and (for oceangoing, coastwise, and Great Lakes vessels) the watch provisions of 46 U.S.C. 8104. In the case of motor vessels, no firemen/watertenders are normally required. For vessels not required to carry credentialed personnel in accordance with 46 U.S.C. 8701 and 8702, it is appropriate to include the ratings by name on the COI, followed by "NC" (Not Credentialed).
 - k. GMDSS Radio Operators.
As discussed in 46 CFR 15.817 every person in the required complement of deck officers, including the master, on seagoing vessels equipped with a GMDSS, except those vessels listed in 46 CFR 15.105(f) and (g), must provide evidence of a valid STCW endorsement as GMDSS radio operator. One of the operators must be designated by the vessel's master as assigned to communicate during a distress situation. Vessels voluntarily relying on the at-sea maintenance provision of the GMDSS must have onboard a licensed GMDSS Radio Maintainer. There is no limitation for who in the crew can be designated to perform this function so long as they are duly certified. Vessels without GMDSS will still require radio officers as determined by the FCC.
3. Passenger Vessel Safety Act of 1993(PVSA), Exemption [46 CFR 70.05-18, 175.118].
All officers must be endorsed for the appropriate vessel tonnage. Specific crewing requirements for vessels exempted under the PVSA can be found in 46 CFR 175.118(c)(3). See Section C. of this Chapter for the Small Passenger Vessel (Under 100 GRT) sample manning scales.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**C. Small Passenger Vessels (SPVs) (Under 100 GRT).

The types, sizes, and operating conditions of small passenger vessels are so varied among the OCMI zones, and within each OCMI zone it would be difficult, if not impossible, to develop a uniform national manning standard for the entire class of vessels. The following manning scales and guidance are provided to assist the OCMI in determining the manning requirements for small passenger vessels. The variations within this vessel class demand the OCMI evaluate each vessel and exercise good judgment in establishing the minimum safe manning. It is emphasized that the OCMI is not compelled to assign manning according to the sample scales in this section as they are neither mandatory, nor all inclusive. The OCMI should consider the manning levels presented as a starting point then determine whether fewer or more personnel are required for the safe operation of the vessel based on local conditions and other considerations noted in Section B1.C. The scales are considered a valid reference that could be quoted to a prospective builder or Small Passenger Vessel (SPV) buyer as a conceptual manning level.

1. Sample Scales.a. Crew (General Operations).

1 Master

*1 crewmember for each
passenger deck

*1 Mate

*Additional deckhands based
on number of passengers on board and
hours of operations (See table in
Section B below)*** Denotes Variables**

- (1) Crewmember. A crewmember includes credentialed officers, ratings, and deckhands required by the Certificate of Inspection. Navigating bridge configuration and other local conditions should be considered by the OCMI in determining whether the credentialed officer in charge of the navigating watch is capable of adequately observing and directing passengers on the bridge deck without assistance.
- (2) Passenger Deck. A passenger deck is a level accessible to and used by passengers when the vessel is underway. A portion of a deck used only for passage between levels such as a stairway landing, lobby or vestibule is not a passenger accessible deck for manning purposes. In addition, partial decks may be monitored by a crewmember assigned to a full passenger deck provided the crewmember makes regular rounds of the partial deck.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**b. Table Of Additional Deckhands.

PASSENGERS ON BOARD	NOT MORE THAN 12 HOUR OPERATION	MORE THAN 12 HOUR OPERATION
0-149	0	1
150-299	1	2
300-499	2	4
500-799	3	6
800 & Up	4	8

c. COI Endorsements.

For vessels that carry varying numbers of passengers the OCMI should provide a sliding scale of the total number of deckhands required indicating the number of passengers carried. When preparing the manning section of the COI, the vessel's regular operating hours should be considered. If the operation is more than 12 hours, a determination should be made as to whether there are adequate facilities for the off watch crew to rest. If the vessel's general operation is 12 hours or less, or there are not adequate facilities for the off watch crew to rest during operations of more than 12 hours, the COI should be prepared with a 12 hour crew complement in the manning blocks and the following endorsement under the Route Permitted and Conditions of Operations section of the COI:

IF THE VESSEL IS AWAY FROM THE DOCK, OR PASSENGERS ARE ON BOARD OR HAVE ACCESS TO THE VESSEL FOR A PERIOD EXCEEDING 12 HOURS IN A 24 HOUR PERIOD AN ALTERNATE CREW SHALL BE PROVIDED.

The vessel that routinely operates in excess of 12 hours in a 24 hour period and has adequate facilities for the off watch crew to rest, should be issued a COI with a 24 hour crew in the manning blocks. If the vessel owner uses an alternate crew arrangement then the alternate crew endorsement should be used.

d. High Capacity Small Passenger Vessels.

The increased size of small passenger vessels has resulted in the carriage of great numbers of passengers and will require manning above the scales listed above. This determination can best be made by the OCMI certifying the vessel based on the vessel's characteristics, route, number of passengers and crew required to successfully respond to all operational and emergency situations. The operation of these high capacity, small passenger vessels on certain routes may call for inclusion of a radar observer endorsement on master and mates credentials.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**2. Variables.a. Mates.

The requirement for credentialed mates on vessels of less than 100 GRT is found in 46 CFR 15.810. At least one mate is required on vessels engaged in voyages exceeding 12 hours in duration (see 46 CFR 15.810(b)(5)).

(1) Ocean And Coastwise Routes.

If operational safety is unaffected the OCMI may choose not to require a mate on vessels operating not more than 12 hours in a 24 hour period provided; (1) the number of passengers on board is less than 400, or (2) the vessel accommodates less than 50 overnight passengers.

(2) Great Lakes And Inland Service, And Restricted Routes.

The OCMI may delete the mate on vessels operating not more than 12 hours in a 24 hour period under the same conditions as noted under ocean and coastwise vessels. Additionally, the OCMI having considered all safety issues (e.g., the uniqueness of the operation, crew qualifications, the restrictiveness of the route) may choose not to require a mate regardless of the number of passengers carried.

(3) Less Than 12 Hours.

A credentialed mate on vessels having voyages of less than 12 hours may be engaged to serve as the senior deckhand. He or she would be available to take over navigational responsibilities and also be present to supervise other operational and emergency concerns.

The above considerations notwithstanding, the mate should be required on all vessels carrying more than 150 passengers and/or having overnight accommodations for more than 49 passengers. A designated senior deckhand may replace the mate provided he or she is qualified under NVIC 1-91, as amended, guidelines. Crewmembers qualified as senior deckhand should be designated in writing by the master with a copy retained on board the vessel. A senior deckhand shall be capable of directing the emergency response actions of the vessel's crew. In the event the master becomes incapacitated, a senior deckhand must be capable of maneuvering the vessel and returning it to a position of safety.

b. Deckhands.

The authority to determine the complement (number) of deckhands required on small passenger vessels is 46 U.S.C. 8101. The Coast Guard does not prescribe deckhand qualifications. NVIC 1-91, as amended, provides guidance on recommended qualifications and training for deckhands on small passenger vessels.

There should normally be a deckhand assigned for each deck to which passengers have access, except when the master and/or mate of a vessel can adequately observe and direct the passengers on one deck. The OCMI is not compelled to require a deckhand assigned to that same deck to assist the master. The OCMI is not bound to the requirements of Table B2.C.1.b but retains the discretionary authority to assign fewer deckhands, provided that a satisfactory level of operational safety is maintained.

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When determining the minimum number of deckhands required the OCMI must consider the following; (1) local circumstances, (2) route, (3) proximity to shore, (4) assistance availability, (5) voyage length, (6) vessel design and construction, (7) crew capabilities, and (8), any other related factors. When applicable, a company's safety record and its training and qualification programs should also be considered in establishing deckhand requirements.

The OCMI must be satisfied that the unlicensed crew is properly trained to perform vessel operations. In general this should be accomplished during the vessel inspection process including the witnessing of performance of emergency drills, the questioning of the crew on duties assigned and/or the review of the company training program. A smaller well trained and qualified crew may be much more capable than a larger number of less qualified deckhands.

The OCMI should consider all variables which are a result of the vessel's design and function, in addition to taking into account an organization's operational structure and policies. For instance, a sailing vessel with extensive rigging or a passenger/cargo vessel using its crew for stevedoring may require additional deckhands. Conversely, certain vessels such as high capacity passenger vessels or vessels operating on restricted routes may require fewer deckhands. If safety remains unaffected, the OCMI may allow a portion or all of the deckhands to perform other duties, such as concessionaire or waiter. These persons must at all times be capable of responding readily to their assigned emergency duties and other deck department related functions. For public health reasons cooks and food handlers should not normally perform or be assigned to deckhand duties.

c. Machinery Operation.

When determining the manning levels for Small Passenger Vessels the OCMI should consider what levels of engineering skills are necessary to operate the vessel safely on its intended route. The OCMI must ensure that owners/operators of Small Passenger Vessels employ someone having a good working operational knowledge of the following; (1) main and auxiliary machinery, (2) steering systems, (3) alarms and monitoring systems, (4) fueling techniques, and (5), emergency procedures. Based on vessel size and engineering complexity, the following levels of engineering expertise should be considered:

(1) Simple Systems.

On vessels with simple engineering systems, it may be necessary that only the master and/or deckhand have these skills.

(2) Complex Systems.

On vessels with more complex engineering systems or vessels that do not carry a mate, deckhands may need special training in routine and emergency engineering tasks.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES****(3) Main And Auxiliary Systems.**

On vessels with large main and auxiliary engineering systems, multiple decks, extended routes, or other similar conditions, it may be necessary that the OCMI place a requirement on the COI for one or more credentialed engineers (see 46 CFR 15.825(b)). Chapter B3 of this Volume discusses Coast Guard policy for credentialed engineers on vessels of less than 300 GRT.

3. Drills.

The use of drills is suggested to ensure that manning levels on vessels are sufficient for emergency situations. The vessel master or mate directs the drills; Coast Guard marine inspectors witness and evaluate the drills. In addition, drills should not place the vessel or any crewmembers in jeopardy. Crewmembers should not be allowed to enter the water. Crewmembers should not maneuver the vessel without direct supervision of the master or a credentialed mate.

4. Launches And Water-Taxi Vessels.

Many unusual hazards exist in launch service or water-taxi operations that are not normally encountered by excursion passenger vessels. These hazards are more pronounced on vessels where the master is the only crewmember. Casualty analysis has revealed the following potential hazards of "solo" operation:

a. Debarking Alongside.

The operator is unable to control or assist debarking passengers when alongside an anchored vessel, as he/she must remain at the controls;

b. Intoxicated Passengers.

Persons returning from shore who are under the influence of alcohol may require supervision and assistance. A single operator cannot provide this aid while underway or maneuvering alongside;

c. Language Difficulties.

A foreign passenger may not understand English well and may not be able to alert the operator of an emergency situation or fully understand verbal instructions. A deckhand would be able to assist passengers and visually demonstrate emergency procedures if necessary; and

d. Man Overboard.

It may be extremely difficult for a single operator to maneuver a vessel alongside a person in the water and to recover a person from the water. The OCMI should consider the above hazards when prescribing manning levels for these vessels. The need for a deckhand should be closely evaluated. Commuter type launches and water taxis operating on dedicated runs may not experience all of the above hazards. In certain situations, one-person operation may be acceptable.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES****D. Passenger-Carrying Barges Under Tow.****1. General.**

Inspected passenger-carrying barges shall be required to carry a credentialed master, mate and number of able seamen, ordinary seamen, or deckhands. With the exception of credentialed officers, credentialed seamen are not required on inland passenger-carrying barges as provided for in 46 U.S.C. 8701. Unless stated otherwise, many of the principals and terms stated in Section C of this Chapter apply.

2. Dual-Mode Passenger-Carrying Vessel Combinations (Inland Waters).

Dual-mode passenger-carrying vessel combinations are those where a towing vessel and a barge are coupled by conventional means and where the operator of the towing vessel navigates the combined units from the towing vessel. Except for navigation, barge operations will be considered as independent of the towing vessel's systems and equipment. It should be noted that the towing vessel could be another passenger vessel, a towing vessel (inspected or uninspected), or another inspected vessel. Nevertheless, manning will be considered separately for each vessel; the towing vessel will be manned for the route and type of operation as appropriate and the barge will be manned as an inspected passenger vessel under the appropriate Subchapter.

a. Dual-mode passenger-carrying vessel combinations, in which an inspected vessel is used as the towing vessel, may be operated by;

(1) Where the towing vessel is a passenger or other inspected vessel of greater than 200 GRT, masters and mates of inspected vessels of appropriate route and tonnage may operate such vessels with a completed TOAR and 30 or 90 days of familiarization, as appropriate; or,

(2) Where the towing vessel is a passenger or other inspected vessel of 200 GRT or less, masters and mates of towing vessels of an appropriate route OR masters and mates of inspected vessels of appropriate route and tonnage may operate such vessels. Any additional requirements for masters and mates of inspected vessels are to be determined by the local OCMI on a case-by-case.

b. At the discretion of the OCMI, dual-mode passenger-carrying vessel combinations, in which an uninspected towing vessel is used, may be operated by;

(1) Masters and mates of towing vessels of an appropriate route;

(2) For towing vessels of greater than 200 GRT, masters and mates of inspected vessels of appropriate route and tonnage may operate such vessels with a completed TOAR and 30 or 90 days of familiarization, as appropriate (see 46 CFR 11.464/11.465); or,

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- (3) For towing vessels of 200 GRT or less, masters and mates of towing vessels of an appropriate route OR masters and mates of inspected vessels of appropriate route and tonnage may operate such vessels. Any additional requirements for masters and mates of inspected vessels are to be determined by the local OCMI on a case-by-case basis.

NOTE: (See 68 FR 1999-6224, 116 [June 17, 2003])

Barge.

- | | |
|----------|---|
| 1 Master | *1 Deckhand for each passenger deck |
| *1 Mate | * Additional deckhands based on number of passengers on board and hours of operations
(See table in Section D.3 below) |

NOTE: The towing vessel must be operated by at least one appropriately credentialed officer for each 12 hours of operation.

3. Table Of Additional Deckhands.

PASSENGERS ON BOARD	NOT MORE THAN 12 HOUR OPERATION	MORE THAN 12 HOUR OPERATION
0-149	0	1
150-299	1	2
300-499	2	4
500-799	3	6
800 & Up	4	8

* **Denotes Variables**

4. Variables.a. Master.

On inspected passenger-carrying barges there must be at least one master for the barge credentialed under 46 CFR Part 11. Any required mates will be credentialed under the same section. The credential must be endorsed for the gross tonnage of the passenger-carrying barge. Any credential of comparable tonnage authorizing service on a self-propelled inspected vessel would also satisfy the requirement.

(1) Master In Charge Of Towing Vessel And Passenger-Carrying Barge.

A master for the passenger-carrying barge may not be required in situations where the OCMI considers that the responsibilities for both the towing vessel and the passenger-carrying barge can be safely vested in one individual on the towing vessel. The passenger-carrying barge's COI must be endorsed to indicate the

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conditions when a master for the passenger-carrying barge is not required. For combined units (i.e. towing vessel and passenger-carrying barge) with an aggregate tonnage greater than 200 GRT, the COI will also require the master of the combined unit to hold a credential as master of inspected, self-propelled vessels of sufficient scope (e.g. route, aggregate tonnage, TOAR, familiarization) authorizing service on both vessels (see paragraph D.5 of this Chapter below). Alternatively, for the combined unit, the Coast Guard may consider a restricted endorsement under 46 CFR 11.201(1) to satisfy the unique qualification requirements of an applicant or distinct group of mariners. This would require coordination with the OCMI and NMC. The authority granted by this officer endorsement will be restricted to reflect any modifications made under the authority of 46 CFR 11.201(1). The unlicensed towing vessel crewmembers may not be used to satisfy the crew requirements on the passenger-carrying barge.

b. Mates.

The OCMI may not require a mate on passenger-carrying barges operating not more than 12 hours in a 24 hour period when the passengers on board do not exceed 399, and/or there are overnight accommodations for not more than 49 passengers; or regardless of the number of passengers in any case where, because of the nature of the route, operating conditions, crew qualifications, or other factors the OCMI considers it safe to do so. In determining whether not to require the mate for the 12-hour or less operation, on vessels less than 100 GRT, the OCMI should consider whether there is an assigned senior deckhand as described in the NVIC 1-91, as amended, "Recommended Qualifications For Small Passenger Vessel Deckhands." The senior deckhand should be designated in writing by the master with a copy retained aboard the passenger-carrying barge. The senior deckhand shall be capable of directing the crew in an emergency and assuming the master's responsibilities, if the master becomes incapacitated.

c. Deckhands.

The criteria in Section B2.D.2 should be used as a guide in determining the number of deckhands required. Passenger-carrying barges of unique design or restricted operations may require different manning scales. In addition, the method of towing may indicate a different requirement for the number of deckhands. The OCMI will provide on the COI a sliding scale detailing the deckhand requirements for barges that carry varying numbers of passengers. The number of deckhands required will be based on the number of decks and passengers carried. Paragraph C.2.b of this Chapter may be referenced for a more detailed discussion.

d. Multiple Passenger-Carrying Barge Combinations.

For multiple passenger-carrying barge combinations an OCMI may assign manning scales based on the separate units or as a single scale for the combined unit. In some cases it may not be necessary or practical to have a separate crew for each passenger-carrying barge. When assigning one crew to a multiple passenger-carrying barge combination, the OCMI should ensure that there is at least one crewmember for each

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passenger-carrying barge when the tow is underway, and sufficient crewmembers for a roving patrol whenever the tow is docked with passengers on board.

e. Machinery Operation.

Passenger-carrying barges under tow should not be operated unless some member of the crew has a good working knowledge of the operation and use of the auxiliary machinery, alarms, electrical systems, and emergency procedures. The OCMI must ensure that the owners/operators crew the vessels with individuals having these qualifications. In most cases the master of the barge or a properly trained deckhand would meet this requirement.

5. Push-Mode Passenger-Carrying Integrated Towing Vessel-Barge Combinations (ITB) (Inland Waters).

Push-mode passenger-carrying integrated towing vessel-barge combinations are those in which a specially designed propulsion unit (towing vessel) is mated to the passenger-carrying barge. The navigation and operation of the combined unit can be accomplished from a control station located on the passenger-carrying barge. The barge cannot operate independently of the towing vessel, which provides its power and other passenger services. These push-mode passenger-carrying ITB combinations are designed, outfitted and intended to operate as a single unit and therefore will be manned as a single vessel. The master and mates must hold inspected vessel credentials with tonnage limitations appropriate to the aggregate tonnage of the towing vessel and barge combination (see NVIC 2-81, as amended). Masters and mates of inspected vessels greater than 200 GRT may operate such vessels with a completed TOAR and 30 or 90 days of familiarization, as appropriate (see 46 CFR 11.464/465). The rare scenario of a push-mode passenger-carrying integrated towing vessel-barge combination of 200 GRT or less is best handled by the local OCMI on a case-by-case.

Combined Unit.

1 Master	1 Deckhand for each passenger deck
*1 Mate	* Additional deckhands based on the number of passengers on board and hours of operations (See table in Section B2.D.3)

- * **Variables described in Section B2.D.4 above may be generally applied to these integrated towing vessel-barge combinations.**

As the statutory and regulatory requirements for push-mode ITBs are based on the aggregate tonnage of the combination, vessels of this class could equal or exceed 1,600 GRT. Accordingly, the OCMI may reference Section G.1 of this Chapter or any other section for manning levels consistent with a conventional vessel of the same tonnage, route, and service.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**6. COI Endorsements.

In preparing the manning section of the COI, the regular operation of the passenger-carrying barge should be reviewed to determine whether the operation is more than 12 hours. If the operation is more than 12 hours, a determination should be made as to whether there are adequate facilities for the off watch crew to rest. On vessels where there are no adequate facilities for the off watch crew to rest, and on vessels that generally operate less than 12 hours, the COI should be prepared with a 12 hour crew in the manning blocks and the following endorsements:

IF THE VESSEL IS AWAY FROM THE DOCK, OR PASSENGERS ARE ON BOARD OR HAVE ACCESS TO THE VESSEL FOR A PERIOD EXCEEDING 12 HOURS IN A 24 HOUR PERIOD AN ALTERNATE CREW SHALL BE PROVIDED."

The COI on passenger-carrying barges that routinely operate in excess of 12 hours in a 24 hour period, and have adequate facilities for the off watch crew to rest, should be prepared with a 24 hour crew in the manning blocks unless the passenger-carrying barge owner requests to use an alternate crew arrangement. In this case the 12 hour alternate crew endorsement above should be used.

NOTE: If these vessels exceed 100 GRT and are on a voyage of over 600 nautical miles, they must comply with the requirements of 46 U.S.C. 8104(d).

7. Seagoing Passenger-Carrying Barges.

The manning and qualifications requirements for seagoing passenger-carrying barges will be handled on an individual basis. The OCMI will submit proposed manning for these vessels to Commandant (CG-CVC) for review. Insofar as practical, the required manning for these vessels should parallel that of inland vessels of similar tonnage, passenger capacity, and configuration. Special emphasis must be placed on ability of the crew to handle emergencies, control and care for passengers, and use all required lifesaving equipment.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**E. Mechanically-Propelled Cargo/Tank Vessels Of 100 GRT Or More.1. General.

Tank vessel manning standards are required by 46 U.S.C. 9102 to take into account a number of factors relating to the duties, qualifications, and training of officers and crew. These factors include standards related to vessel navigation, cargo handling, size and type of vessel, qualification by virtue of simulator training, maintenance functions, physical fitness criteria, as well as retraining and special training requirements. Section B1.C also addresses specific factors to be considered in manning determinations.

2. Sample Scales.a. Ocean And Coastwise.

1-Master	1-Chief Engineer
*1-Chief Mate	*1-1st Assistant Engineer
*1-2nd Mate	*1-2nd Assistant Engineer
*1-3rd Mate	*1-3rd Assistant Engineer
*6-Able Seamen	*3-Firemen/Watertenders
*3-Ordinary Seamen	*3-Oilers
*1-Radio Officer	*3-Tankermen
* -Certificated Lifeboatmen	

b. Great Lakes.

1-Master/1st Class Pilot	1-Chief Engineer
1-Chief Mate/1st Class Pilot	*1-1st Assistant Engineer
2-Mates/1st Class Pilots	*1-2nd Assistant Engineer
*6-Able Seamen	*1-3rd Assistant Engineer
*3-Ordinary Seamen	*3-Firemen/Watertenders
* -Certificated Lifeboatmen	*3-Oilers
	*3-Tankermen

c. Lakes, Bays, And Sounds.(1) Crew (General Operations).

1-Master/1st Class Pilot	1-Chief Engineer
1-1st Class Pilot	*1-1st Assistant Engineer
*4-Able Seamen	*2-Firemen/Watertenders
*2-Ordinary Seamen	*2-Oilers
* -Certificated Lifeboatmen	*2-Tankermen

(2) Crew (12-Hour Operation).

1-Master/1st Class Pilot	1-Chief Engineer
*2-Able Seamen	*1-Fireman/Watertender
*1-Ordinary Seaman	*1-Oiler
* -Certificated Lifeboatmen	*1-Tankerman

* **Denotes Variables**

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**3. Variables.a. Workhour Limits.

46 U.S.C. 8104(n) imposes maximum workhour limits for credentialed individuals and seamen on tankers. All tankers must ensure compliance with this provision.

b. Mates.

The number of credentialed mates required specifically by statute or regulation on oceangoing or coastwise vessels generally depends on the gross tonnage of the vessel (see 46 U.S.C. 8301 and 46 CFR 15.810). The workhour limitations may necessitate an additional mate be assigned to prevent the chief mate from exceeding limits due to cargo handling responsibilities.

c. Able Seamen (ABs).

Depending on the size and operation of a vessel and its needs for safe navigation, this number may vary. On certain vessels, sixty-five percent of unlicensed deck crew must be ABs (see 46 U.S.C. 8702, 46 CFR 15.840, and Chapter B4).

d. Ordinary Seamen.

This number will vary in proportion to the total deck crew.

e. ABs And Ordinary Seamen.

On oceangoing and coastwise vessels over 100 GRT, the number of ABs and ordinary seamen carried must be sufficient for the watch provisions of 46 U.S.C. 8104 and 46 CFR 15.705. Deckhands may be permitted on vessels restricted to inland routes.

f. Certificated Lifeboatmen.

The number of certificated lifeboatmen must be separately stated on the COI. The number will vary depending on the lifesaving equipment requirements for each vessel.

g. Credentialed Engineers.

See Chapter B3 of this Volume.

h. Firemen/Watertenders And Oilers.

The number and specific ratings will vary based on the number and location of boilers, type of fuel, number of furnaces, arrangement of machinery spaces, type and amount of automation, and, for oceangoing, coastwise, and Great Lakes vessels, the watch provisions of 46 U.S.C. 8104. In the case of motor vessels, no firemen/watertenders are normally required. Vessels operating exclusively on river routes are not required to carry credentialed personnel (see 46 U.S.C. 8701 and 8702), but it is appropriate to include the ratings by name on the COI followed by "NC" (Not Credentialed). Refer to Chapter B4 also.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**i. GMDSS Radio Operators.

As discussed in 46 CFR 15.817 every person in the required complement of deck officers, including the master, on seagoing vessels equipped with a GMDSS, except those vessels listed in 46 CFR 15.105(f) and (g), must provide evidence of a valid STCW endorsement as GMDSS radio operator. One of the operators must be designated by the vessel's master as assigned to communicate during a distress situation. Vessels voluntarily relying on the at-sea maintenance provision of the GMDSS must have onboard a licensed GMDSS Radio Maintainer. Vessels without GMDSS will still require radio officers as determined by the FCC.

j. Tankermen.

The OCMI enters, on the COI issued to each manned tank vessel subject to the regulations in 46 CFR, the number of crewmembers required to hold valid merchant mariners' documents or MMCs with the proper tankerman endorsement. Title 46 CFR, Table 15.860(a)(1) provides the minimal requirements for tankermen aboard manned tank vessels; Table 15.860(a)(2) provides the tankerman endorsements required for personnel aboard tankships. Tankermen are required aboard all vessels that carry oil or hazardous materials in bulk as cargo or residue (see 46 U.S.C. 8703). In consideration of footnote 5 in 46 CFR Table 30.01-5(d), vessels covered by Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of 46 CFR Chapter I, 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 must meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels). As indicated in 46 CFR 31.15-1, this includes the applicable manning provisions relating to tankermen endorsements required for personnel aboard tank vessels.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**F. Mechanically-Propelled Cargo/Tank Vessels Under 100 GRT.1. Sample Scales.a. General Operations.

1 Master, 1 Mate, *2 Deckhands, *2 Tankermen.

b. With 12-hour Operation Limit.

1 Master, *1 Deckhand, *1 Tankerman.

* **Denotes Variables**

2. Variables.a. Workhour Limits.

46 U.S.C. 8104(n) imposes maximum workhour limits for credentialed individuals and seamen on tankers. The person in charge of transfer operations on tank vessels with a cargo capacity of 250 barrels or more must be a credentialed engineer, pilot, or master/mate authorized for service on vessels of more than 200 GRT (33 CFR 155.710(a)). The number of credentialed officers required must account for this additional responsibility. The workhour limits prevail over another statute which may allow a specific number of designated crew.

b. Deckhands.

Due to the number of variables in the operation of this type of vessel, the specific deckhand requirements are left to the discretion of the certificating OCMI.

c. Tankermen.

The OCMI enters, on the COI issued to each manned tank vessel subject to the regulations in 46 CFR, the number of crewmembers required to hold valid MMCs with the proper tankerman endorsement. Title 46 CFR, Table 15.860(a)(1) provides the minimal requirements for tankermen aboard manned tank vessels; Table 15.860(a)(2) provides the tankerman endorsements required for personnel aboard tankships. Tankermen are required aboard all vessels that carry oil or hazardous materials in bulk as cargo or residue (see 46 U.S.C. 8703). In consideration of footnote 5 in 46 CFR Table 30.01-5(d), vessels covered by Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of 46 CFR Chapter I, 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 must meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels). As indicated in 46 CFR 31.15-1, this includes the applicable manning provisions relating to tankermen endorsements required for personnel aboard tank vessels.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**G. Integrated Tug-Barges (ITBs) [Refer to NVIC 2-81, as amended].1. Inspected Tugs And Dual-Mode Integrated Tug-Barges (ITBs).

Inspected tugs are subject to the provisions of 46 U.S.C. 8101, 8104, 8301 (and, depending upon the size or route, 46 U.S.C. 8304, 8701, and 8702). It should be noted that the number of mates required for oceangoing or coastwise tugs by 46 U.S.C. 8301 must be read as complementary to the watch provisions of 46 U.S.C. 8104. Should the voyage equal or exceed 600 miles, the master must also be in a watchstanding status.

1-Master
 *2-Licensed Mates
 *4-Able Seamen
 *2-Ordinary Seamen

1-Chief Engineer
 *2-Assistant Engineer
 *3-Oilers

NOTE: In many cases Articulated Tug-Barges (ATBs) are treated as two separate units (non integral). If the tug of a dual-mode unit is inspected then paragraph G.1 is applicable. If the tug of a dual-mode unit is uninspected, then refer to paragraph B.7.B. If the unit is push-mode, refer to paragraph G.2 below.

2. Push-Mode ITBs.

Inspected push-mode ITBs are subject to the provisions of 46 U.S.C. Chapter 37 (if applicable), 8101, 8104, 8301, 8303, 8304, 8701, and 8702. As statutory and regulatory requirements for push-mode ITBs are based on the aggregate tonnage of the combination, virtually all vessels of this class will equal or exceed 1,600 GRT.

1-Master
 1-Chief Mate
 2-Mates
 *6-Able Seamen
 *1-Radio Officer

1-Chief Engineer
 *2-Assistant Engineers
 *3-Oilers
 *3-Tankermen (if subject to 46 U.S.C. 3702) (as req. by FCC)

* Denotes Variables

3. Variables.a. First Class Pilot.

Master and mates must have FCP endorsements when navigating exclusively on the Great Lakes. In addition, when navigating on designated waters, the vessel must have a United States or Canadian registered pilot for the route being navigated. (46 U.S.C. 9302)

b. Mates.

If the gross tonnage of the tug in a Dual-Mode ITB or the combined tonnage of the Push-Type ITB exceed 1,000 GRT then three mates are required (46 U.S.C. 8301).

c. Engineers.

Most of these vessels are highly automated and the manning levels indicated may be reduced. Refer to Chapter B6.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**

- d. Able Seamen (ABs).
On oceangoing and Great Lakes vessels, the number of ABs and ordinary seamen carried must be sufficient for the watch provisions of 46 U.S.C. 8104 and 46 CFR 15.705. Two specially trained ordinary seaman may be substituted for a maximum of two able seamen. However, the provisions of 46 U.S.C. 8702(b) shall be met. See Chapter B4.
- e. GMDSS Radio Operators.
As discussed in 46 CFR 15.817 every person in the required complement of deck officers, including the master, on seagoing vessels equipped with a GMDSS, except those vessels listed in 46 CFR 15.105(f) and (g), must provide evidence of a valid STCW endorsement as GMDSS radio operator. One of the operators must be designated by the vessel's master as assigned to communicate during a distress situation. Vessels voluntarily relying on the at-sea maintenance provision of the GMDSS must have onboard a licensed GMDSS Radio Maintainer. Vessels without GMDSS will still require radio officers as determined by the FCC.
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PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES****H. Cargo And Miscellaneous Barges.****1. Seagoing Barges.****a. General.**

The determination as to whether or not a seagoing barge must be manned shall be made by the OCMI (see 46 CFR 15.801). These vessels must comply with the watch provisions of 46 U.S.C. 8104 when the manning levels prescribed are based on safety considerations. In this regard, the duties of riding personnel should include periodic checks of the towing gear, security of cargo, navigation lights, etc. These are safety-oriented functions amenable to a watch routine, as opposed to maintenance functions such as painting.

b. OCMI's Evaluation.

Should the OCMI decide that safety is the primary task of the riding crew, the number of personnel in the deck department shall be sufficient to meet the watch system requirements of 46 U.S.C. 8104 (two watches for voyages of less than 600 nautical miles, three watches for voyages of 600 nautical miles or more). In all such cases, the deck crew must be composed of at least 65 percent ABs, as required by 46 U.S.C. 8702.

(1) Voyages Of Less Than 600 NM.

*2 Able seamen, **other persons;

(2) Voyages Of 600 NM Or Greater.

*2 Able seamen, 1 ordinary seaman, **other persons.

* One of the crew must hold an appropriate tankerman certificate (aboard tank barges only).

** Other persons may be permitted, depending on the berthing accommodations and lifesaving devices available aboard the barge.

2. Dump Scows And Non-Self-Propelled Harbor Dredges, And Barges Changing Places Of Employment Beyond The Baseline.**a. Required Manning.**

Certain barges may be unmanned if so authorized by the OCMI. However, if a crew is required by the OCMI:

(1) Crewmembers.

All crewmembers must possess a merchant mariner credential (MMC) and be divided among required watches.

(2) Unlicensed Deck Crew.

Sixty-five percent of the deck department, exclusive of credentialed officers personnel, must be ABs.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**b. Permitted Manning.

When the OCMI does not deem it necessary to require a crew on subject barges, a crew may still be permitted, and in such cases:

(1) Maintenance Persons.

Barges may carry a person or persons as maintenance men with no duties connected with the navigation of the vessel. A sample endorsement that may be used on the COI:

CERTIFICATED WITHOUT A NAVIGATING CREW. THE VESSEL MAY CARRY ONE PERSON AS MAINTENANCE MAN AND OPERATOR OF THE DUMPING MECHANISM, WITH NO DUTIES CONNECTED WITH THE NAVIGATION OF THE VESSEL.

(2) Citizenship.

Seventy-five percent of the personnel of this "permitted" crew must be U.S. citizens; and

(3) MMC Requirement. All crewmembers must be in possession of MMCs.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES****I. Public Vessels.****1. Army Corps Of Engineers (USACE) Vessels.**

The manning requirements for inspected USACE vessels are stated on the COI, in the same manner as for other inspected vessels. Inspected USACE dredges are certificated for service on various routes and manned accordingly. Hopper dredges often operate for extended periods in protected waters, entering exposed waters only to change operating sites or to dump spoil. It is the USACE's policy to allow as many crewmembers on liberty as feasible when the vessel is engaged in dredging operations of this type. Accordingly, the COI should be endorsed to provide for a minimal crew while the vessel is dredging or dumping. This will permit the vessel to make short voyages, less than two watch rotations, for dumping purposes with a reduced crew aboard. The scales are provided below, as appropriate.

a. Lakes, Bays, Sounds, And Rivers.

While dredging in lakes, bays, sounds, rivers, or on short coastwise voyages for the purpose of dumping, at least the following persons shall be on board the vessel:

1-Master	1-Chief Engineer
1-Mate	*1-Assistant Engineer
2-Able Seamen	*1-Fireman/Watertender
1-Ordinary Seaman	1-Oiler

b. Great Lakes.

While operating in the Great Lakes, or their connecting and tributary waters, for the purpose of dredging or dumping, the minimum manning shall be:

1-Master and First Class Pilot	1-Chief Engineer
1-Mate/First Class Pilot	*1-Assistant Engineer
2-Able Seamen	*1-Oiler
	1-Ordinary Seaman

*** Denotes variable depending upon mode of propulsion and/or level of automation.**

2. Military Sealift Command (MSC) Vessels.

These vessels are typically civilian-manned. Manning should be established using Section B2.E as a guide. In addition, the OCMI should consult Volume II, Section B Chapter 5 of this manual and any MOA in force between the USCG and MSC.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES****J. School Vessels Operated By The U.S. Merchant Marine/State Maritime Academies (SMA).****1. Mechanically-Propelled Vessels Of 100 GRT Or More.**

The COI shall specify the minimum complement of officers and crew necessary for the safe navigation of a school vessel (46 CFR 167.60-15). Unless expressly authorized and alternatively endorsed, cadets are not authorized to fill any other position required by the COI. Certain academy training programs have been approved to allow cadets to qualify for rating endorsements restricted to service on a specific vessel. However, cadets cannot fill a position required by the COI unless they hold a valid MMC duly endorsed to reflect the rating in accordance with the program approval issued by the NMC. The following guidelines are offered to promote uniform manning levels for school vessels. However, the OCMI shall exercise discretion, within the minimum requirements of the law, in this regard, particularly for smaller vessels operating on limited routes.

a. Credentialed Officers.

One master, three licensed mates, one chief engineer, three assistant engineers, and one radio officer, as applicable (see 46 CFR 310.5 concerning state training vessels). For vessels operated exclusively in Great Lakes service, a master/first class pilot and first class pilots shall be employed in lieu of mates.

b. Unlicensed Deck Crew.

Three ABs (one per watch), to act as supervisors of cadets and to fulfill the requirement of 46 U.S.C. 8702 for an AB at the helm in congested waters, periods of reduced visibility and adverse weather, and other hazardous circumstances.

c. Unlicensed Engine Room Personnel.

Three firemen/watertenders or oilers (one per watch), to act as supervisors of cadets and to assist the engineer of the watch.

d. Lookouts.

If the master deems them competent, cadets may be used as lookouts.

e. Lifeboatmen.

The requirements of 46 CFR 199.100 shall be fully met. Cadets may fill the billets for lifeboatmen, provided they are qualified and endorsements to this effect are included on their credential, including, if appropriate, STCW endorsements for Proficiency in Survival Craft.

2. School Vessels Under 100 GRT.

See Chapter B3 of this Volume.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES****K. Sailing School Vessels.**

Sailing school vessels must operate with properly credentialed and certificated individuals, as required by statutes and regulations. These individuals provide the necessary base of experience to fulfill leadership roles during emergencies, and to otherwise assure the vessel's safe handling.

1. OCMI Considerations.

In determining the manning needed to safely operate the vessel, the OCMI shall take into consideration the vessel's route and specific characteristics, including the number of masts, type of sails, and number of persons needed for evolutions. Vessels equipped with more than one mast must carry a seaman (AB or deckhand, as appropriate) for each mast, and an additional AB for each square-rigged mast. On ketches and yawls where the second mast is used for balancing purposes, the OCMI may waive the additional seaman, if it is believed that the vessel can be operated with a smaller crew.

2. Deck Crew.

The maximum number of people needed in the deck crew will be figured as noted above, or as required by watchkeeping requirements, whichever is greater. On vessels 100 GRT and above, except those navigating exclusively on rivers or lakes (except the Great Lakes), the unlicensed crew must hold credentials and at least 65 percent must be endorsed as ABs. If propelling machinery is installed aboard seagoing sailing school vessels of 300 GRT or more, a credentialed engineer must be carried. On ocean or coastwise or Great Lakes vessels of 100 GRT or more, the 3-watch standard applies.

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L. Offshore Supply Vessels (OSVs).

1. < 500 GRT or 6,000 GT ITC [For OSVs less than 100 GRT, see 46 CFR 15.810 (b)(5).]

a. Voyages Of 600 Miles And More.

1-Master	*1-Chief Engineer
2-Mates	*2-Assistant Engineers
*3-Able Seamen-OSV	*3-Oilers
	*1-Tankerman

b. Voyages Of Less Than 600 Miles.

1-Master	*1-Chief Engineer
1-Mate	*1-Assistant Engineers
*2-Able Seaman-OSV	*3-Oilers
	*1-Tankerman

2. ≥ 500 GRT or 6,000 GT ITC

a. Voyages Of 600 Miles And More.

1-Master	*1-Chief Engineer
3-Mates	*3-Assistant Engineers
*3-Able Seamen-Limited	*3-Oilers
	*1-Tankerman

b. Voyages Of Less Than 600 Miles.

1-Master	*1-Chief Engineer
2-Mates	*2-Assistant Engineers
*3-Able Seaman-Limited	*3-Oilers
	*1-Tankerman

3. Liftboats ≥ 100 GRT.

See Chapter B2.L.1.

4. Liftboats < 100 GRT.

a. Oceans, Coastwise or Lakes, Bays & Sounds (Voyage > 12 hours of operation in a 24 hour period).

1-Master, 1-Mate, 2-Deckhands

b. Oceans & Coastwise Route – Rescue Boat Required (Voyages < 12 hours of operation in a 24 hour period).

1-Master, 2-Deckhands

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**c. Lakes, Bays & Sounds Route – Rescue Boat Required.

1-Master, 2-Deckhands

d. Lakes, Bays & Sounds Route – No Rescue Boat Required.

1-Master, 1-Deckhand

*** Denotes Variables**5. Variables.a. Engineers.

Number of engineering personnel dependent on level of automation. Refer to Chapter B6 and NVIC 1-78, as amended, for specific guidance. A designated duty engineer (DDE) can serve as a Chief or Assistant Engineer, subject to the restrictions of their endorsement, on vessels of not more than 500 GRT. Engineroom ratings (i.e. Oilers) are not subject to the two watch provisions of 46 U.S.C. 8104(g).

b. Tankermen.

Generally, tankermen are required aboard all vessels that carry oil or hazardous materials in bulk as cargo or residue, and the number required shall be noted on the COI. However, the following are additional factors to be considered with OSVs depending on the quantity and type of materials carried.

- (1) OSVs with a capacity of at least 250 barrels oil or hazardous material in bulk (e.g., oil based drilling mud) within cargo tanks or portable tanks must have a credentialed master, mate, engineer, or pilot as the person in charge of transfer operations.
- (2) OSVs which do not carry oil or hazardous materials in bulk as cargo, but carry fuel within the fuel supply tanks for transfer to an offshore facility may have either a certified tankerman or a licensed master, mate, pilot or engineer as the person in charge of transfer operations.
- (3) OSVs with a cargo capacity exceeding 20 percent of its deadweight tonnage are considered tankers and must meet the more stringent manning scales in Sections B2.E or B2.F.

c. Able Seamen (ABs).

The OCMI may consider allowing specially trained ordinary seaman (OS) meeting the requirements of NVIC 3-83 as substitutes for up to 35 or 50 percent, respectively, of the required ABs on domestic voyages as provided by 46 USC 8702(b)(2) (see Chapter B4). Reference Section B.1.a.(3) of Chapter B4 for additional information concerning the substitution of able seamen with specially trained ordinary seamen on voyages subject to STCW.

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M. Oil Spill Response Vessels (OSRVs).

1. General.

It is expected that many OSRVs will be converted Offshore Supply Vessels (OSVs). OSVs manning scales are not considered appropriate for this new class of vessels. OSRVs will require a 24-hour day capability when engaged in spill response. OSRVs are technically tankers, as defined by 46 U.S.C. 2101(38), and therefore are subject to the workhour limitations imposed by 46 U.S.C. 8104(n). Existing automated OSVs being converted to OSRVs shall be reevaluated for a determination of appropriate manning levels. Manning reductions based on automation shall be handled according to existing regulations and policies. The sample scales below are stated for conventional (non-automated) Oil Spill Recovery Vessels in restricted ocean service; vessels limited to inland routes could have reduced manning levels provided workhour limitations are not exceeded.

2. Sample Scales.

a. Oil Spill Response Vessels Of 500 GRT Or More.

These vessels should be manned similarly to a tank vessel (see Section B2.E.1).

b. Oil Spill Response Vessels Between 100 And 500 GRT.

1-Master	*1-Chief Engineer
*2-Mates	*2-Assistant Engineers
*3-Able Seamen	*3-Oilers
*2-Tankermen	

c. Oil Spill Response Vessels Of 100 GRT And Less.

1-Master
 *1-Mate
 2-Deckhands
 *2-Tankermen

*** Denotes Variables**

3. Variables.

a. Mates.

At least two mates must be assigned on a seagoing inspected OSRV vessel when engaged in an operation over 12 hours in duration. One mate is required when engaged in an operation of less than 12 hours. The watches may be divided into at least two watches when engaged in an operation less than 12 hours in duration. The above scales presume that the master will also stand watches; if the overall

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**

responsibilities of the master preclude watchstanding, then an additional mate is required for vessels operating in excess of 12 hours.

b. Able Seamen (ABs).

At least 65 percent of the unlicensed deck crew on seagoing vessels over 100 GRT must hold endorsements for AB. Endorsement as AB-Special is the minimum AB qualification allowed by 46 U.S.C. 7312. The OCMI may consider allowing specially trained ordinary seaman (OS) meeting the requirements of NVIC 3-83 as substitutes for up to 35 percent of the required ABs on domestic voyages. Reference Section D.1. of Chapter B4 for additional information concerning the substitution of able seamen with specially trained ordinary seamen. On vessels engaged on voyages of less than 12 hours, 2 ABs may be permitted since the vessel may operate on a two watch schedule. However, the OCMI must consider the ability of the reduced crew to remain within the workhour limits of 46 U.S.C. 8104(n). The OCMI should assess the need for an additional number of ABs to be included in the required manning level. This may be required for vessels operating in an area routinely subject to inclement weather which requires additional lookouts to maintain an adequate watch, or on vessels requiring dedicated helmsmen to be assigned.

c. Engineers.

All OSRVs propelled by machinery of at least 300 GRT, regardless of route, require a credentialed engineer. Seagoing self-propelled inspected vessels of at least 200 GRT require a credentialed chief engineer, and other credentialed engineers as may be necessary to stand watches. Manning requirements for licensed engineers are found in 46 CFR 15.820 and 15.825. The scales represent a three-watch manning schedule for non-automated engineering propulsion plants. Depending on the level of sophistication of installed engineering automated control and monitoring systems, the credentialed engineering officers and ratings may be reduced based on the system's review and approval in accordance with 46 CFR Part 62 and other existing policy.

d. Tankermen.

Tankermen are required aboard these vessels whenever any transfer operations are conducted. At least two additional tankermen separate from the navigating crew are considered necessary for these operations to comply with the workhour limitations addressed in paragraph 1 of this Section. These additional tankermen might be provided as part of the incident response crew, or the owner may opt to have the additional qualified tankermen as part of the permanent crew. An individual holding an endorsement as restricted tankerman under 46 CFR 13.111 may be utilized to satisfy the tankerman requirement, subject to any restrictions on the tankerman endorsement.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**N. Oil Spill Response Barges (OSRBs).1. Manning.

Title 46, United States Code, Chapter 87 allows the Secretary to prescribe the individuals serving on board an OSRV, (including an OSRB) who must hold a credential. Some OSRBs have been outfitted with skimming equipment having the capability to recover and store recovered oily liquids in bulk. This necessitates placing persons onboard the vessel for the safe operation of the barge and its machinery/equipment. Those persons who are assigned to the vessel, engage in the business of the vessel, and are part of the routine underway operations of the vessel are required to hold a valid credential. The number of persons required is determined by the cognizant Officer-in-Charge, Marine Inspection using the policy found in this section. When the vessel is in operation for training exercises and drills, and the evolution is less than 12 hours in duration the persons associated with the safe operation of the vessel may be reduced.

a. ABs and Ordinary Seaman.

At least 65 percent of the unlicensed deck crew on seagoing vessels over 100 GRT must hold endorsements for AB. The alternatives for ABs as found in the provision of Section B2.M.3.b. may be employed by the OCMI. The OCMI must consider the vessel's operation, work hour considerations and prevailing weather conditions when determining the proper number of deck crew.

b. Watchmen.

When the OSRB is outfitted with crew shelters/quarters and industrial workers have access to the vessel, a suitable number of watchmen shall be provided but will not be less than two.

c. Certificated Lifeboatmen

The number of certificated lifeboatmen must be separately stated on the COI. This number will vary depending on the lifeboat and life raft requirements for each vessel, in accordance with the regulations

d. Tankermen/Persons-In-Charge.

When required, these crewmembers shall be separate from the deck crew in order to comply with the workhour limitations. The vessel's COI should reflect this condition of operation.

2. Crew Quarters and Shelters.

The construction and structural fire protection standards for accommodations should meet the requirements found in 46 CFR, Subchapter D.

3. Persons in Addition to the Crew (PACs).

To sustain operations during oil spill response, workers will be present aboard the OSRB to recover oil, but will necessarily be part of the underway operating crew assigned to the vessel. These workers are deemed industrial workers and are not required to hold an MMC as are on board the vessel for the sole purpose of carrying out the industrial business or function of the vessel. These personnel will need to have access to the vessel as a work and training platform. For response operations, training purposes, and drills the total persons carried shall be determined by the OCMI but may not exceed a total capacity of primary lifesaving equipment on board the vessel, nor shall they adversely impact the

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vessel's stability. Unless the barge is specifically designed and constructed for the carriage of personnel, the following applies: On all voyages beyond the boundary line, all persons shall be transported on the attending vessel and transferred to the OSRB from the attending vessel upon arrival at the training/response site. All personnel transfers shall be conducted when the attending vessel master deems conditions safe for transfers. Adequate primary lifesaving equipment shall be on board the vessel for all persons carried. The OSRB will provide no overnight accommodations for the PACs, unless the provisions in paragraph B2.N.2. are met.

4. Attending Vessel.

When the OSRB is underway with persons onboard, engaged in oil spill operations, drills, or training exercises, a vessel must be in attendance at all times. The attending vessel must be capable of receiving all persons aboard in the event of an emergency evacuation, and shall be equipped as a standby vessel in accordance with 33 CFR 143.405. The attending vessel does not have to meet the multiple propellers or propulsion devices requirement of 33 CFR 143.405 provided the vessel can demonstrate it has adequate maneuvering capabilities.

5. Lightering and Discharges to Shoreside Reception Facility.

The OSRB is generally a tank barge that changed service to Oil Spill Recovery Barge. During an oil response, it is likely that these barges may be employed as lightering barges receiving recovered oil from other oil recovery vessels and then discharging their cargo to a shore facility. The person-in-charge of all oily liquid transfers shall have a tankerman endorsement for the grade(s) of cargo transferred that is appropriate for the vessel. A restricted tankerman endorsement in accordance with 46 CFR 13.111 is acceptable for these vessels. When engaged in lightering or oily liquid transfers, a minimum of two (2) persons-in-charge shall be on board the vessel. When lightering/transfer operations are less than 12 hours in duration only one person-in-charge is required. The persons-in-charge are only required during transfer operations and not for recovering oil. This requirement is an operational restriction and should be placed in the operating details of the COI. The following verbiage shall be used on the OSRB COI:

WHEN TRANSFERRING RECOVERED OILY LIQUIDS OR OIL TO OR FROM ANOTHER VESSEL OR FACILITY, A TANKERMAN-PERSON-IN-CHARGE SHALL BE PROVIDED."

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O. Mobile Offshore Drilling Units (MODUs).

1. Sample Scales.

a. Drillships On Location (Moored with anchors placed in the drilling configuration).

1-Master (With OIM Endorsement)	1-Chief Engineer
1-Mate	*1-Assistant Engineer
2-Able Seamen	*2-Oilers
1-Radio Officer (If required by the FCC)	1-Ordinary Seaman

b. Drillships Underway-Voyage Of More Than 72 Hours.

1-Master	1-Chief Engineer
1-Chief Mate	*3-Assistant Engineers
1-Second Mate	*3-Oilers
1-Third Mate	*6-Able Seamen
1-Radio Officer (If required by the FCC)	*3-Ordinary Seamen

* **Denotes Variables**

c. Drillships Underway-Voyage Of More Than 16 But Not More Than 72 Hours.

1-Master	1-Chief Engineer
2-Mates	*2-Assistant Engineers
4-Able Seamen	*3-Oilers
1-Radio Officer (If required by the FCC)	*2-Ordinary Seamen

d. Drillships Underway-Voyage Of Not More Than 16 Hours.

1-Master	1-Chief Engineer
1-Mate	*1-Assistant Engineer
4-Able Seamen	*2-Oilers
*2-Ordinary Seamen	
1-Radio Officer (If required by the FCC)	

NOTE: When engaged on a voyage of not more than 8 hours, the crew may be reduced by 2 able seamen, 1 ordinary seaman, and 1 oiler.

e. Self-Propelled Surface Units (Other Than Drillships) Underway-Voyage Of More Than 72 Hours.

1-Master (With OIM Endorsement)	1-Chief Engineer
1-Chief Mate (With BS or BCO Endorsement)	*3-Assistant Engineers
2-Mates (With BCO Endorsement)	*3-Oilers
1-Radio Officer (If required by the FCC)	*6-Able Seamen
	*3-Ordinary Seamen

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1-Master (With OIM Endorsement)	*1-Chief Engineer
2-Mates (With BCO Endorsement)	*2-Assistant Engineers
*2-Ordinary Seamen	*2-Oilers
1-Radio Officer (If required by the FCC)	4-Able Seamen

g. Self-Propelled Surface Units (Other Than Drillships) Underway-Voyage Of Not More Than 16 Hours.

1-Master (With OIM Endorsement)	*1-Chief Engineer
2-Mates (With BCO Endorsement)	*1-Assistant Engineer
*2-Ordinary Seamen	*2-Oilers
1-Radio Officer (If required by the FCC)	4-Able Seamen

NOTE: When engaged on a voyage of not more than 8 hours, the crew may be reduced by 2 able seamen, 1 ordinary seaman, and 1 oiler.

h. Self-Propelled Surface Units (Other Than Drillships) On Location Or Under Tow.

1-Master (With OIM Endorsement)	1-Chief Engineer
1-Mate (With BCO Endorsement)	*1-Assistant Engineer
1-Ballast Control Operator	*2-Oilers
1-Radio Officer (If required by the FCC)	2-Able Seamen
* Denotes Variables	1-Ordinary Seamen

i. Non-Self-Propelled MODUs (Excluding Bottom Bearing Units) On Location Or Under Tow.

1-Offshore Installation Manager
1-Barge Supervisor
2-Ballast Control Operators
2-Able Seamen
1-Ordinary Seaman

j. Non-Self-Propelled Bottom Bearing Units On Location Or Under Tow.

1-Offshore Installation Manager
2-Able Seamen
1-Ordinary Seaman

2. Variables.a. Offshore Installation Manager (OIM), Barge Supervisor (BS), And Ballast Control Operator (BCO).

Special MODU manning requirements may be found in 46 CFR 15.520 and 15.810.

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**b. ABs And Ordinary Seamen.

On ocean or coastwise routes, the number of ABs and ordinary seamen carried must be sufficient for the watch system provisions of 46 U.S.C. 8104 and 46 CFR 15.840. In addition, the OCMI must ensure sufficient lifeboatmen will be provided through manning levels established (46 CFR 15.845).

c. Engineers.

Individuals holding MODU engineer credentials may be substituted for the required credentialed engineers at the discretion of the OCMI.

P. Dredges.

Commercial dredges are subject to inspection and manning requirements either because they are propelled by steam or they are seagoing motor vessels. As such vessels are generally of 300 GRT or more, the standards in Section B2.E of this Volume should be used to establish manning scales for such vessels. Section B1.C also addresses specific factors to be considered in manning determinations. With regard to Section B2.W, dredges certificated for oceans routes, engaged in domestic service and not on a international voyage, may substitute an OICNW (Reg II/1) for the Chief Mate (Reg II/2) and an OICEW (Reg II/1) for the Second Engineer (U.S. 1st A/E) (Reg III/2).

Due to the diverse nature of dredging operations, COIs can be structured such that appropriate manning is specified for multiple voyage lengths and types under the Conditions of Operation. The following endorsement may be used when appropriate: "When engaged in dredging operations on lakes, bays, sounds, or rivers exclusively, or engaged on a coastwise voyage of less than 400 miles for the purpose of dumping dredge spoil, credentialed officers and certain crewmembers may be divided into at least two watches. The minimum manning shall be as follows:

1-Master	1-Chief Engineer
1-Mate	1-Assistant Engineer
2-Able Seamen	2-Firemen/Watertenders
1-Ordinary Seaman	2-Oilers

NOTE 1: Vessels operating exclusively on river routes are not required to carry credentialed personnel (see 46 U.S.C. 8701 and 8702). In such cases, it is appropriate to include the ratings by name on the COI followed by "NC" (Not Credentialed).

NOTE 2: For a distance of less than 400 miles, dredging operations can include those movements necessary to obtain fuel, stores, and for minor repairs.

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Any request for a manning scale for a nuclear-powered vessel shall be forwarded to Commandant (CG-CVC).

R. Motor-Propelled Oceangoing Yachts.1. Required Manning.

The statutory authority regarding the manning of seagoing motor-propelled yachts of 300 GRT or more is based on a combined reading of 46 U.S.C. 8101, 8301, and 8304. When certificating the vessel, consideration shall be given to manning, which includes the following:

1-Master	*1-Chief Engineer
*1-Licensed Mates	*1-Assistant Engineers
* -Able Seamen	* -Oilers
* -Deckhands	
* Denotes Variables	

S. Hydrofoils And Air Cushion Vehicles (ACVs) Under 100 GRT.1. Introduction.

The use of hydrofoils and ACVs in the U.S. has been limited to date. There are no regulations specifically addressing these vessels, and the Coast Guard's involvement has been only with those craft used as small passenger vessels. Until these vessels become more widely used, specific standards for operators cannot be established. The ultimate decision as to whether an applicant has adequate training and possesses sufficient knowledge and skill to operate a hydrofoil or ACV must rest with the OCMI. However, the following minimal requirements shall be applied:

a. Required Credential.

Possession of a credential endorsed as master for conventional passenger vessels of commensurate tonnage and, for vessels subject to the High-Speed Craft (HSC) Code, a type rating endorsement;

b. Required Course.

Successful completion of a course conducted by either the manufacturer or owner of the vessel, acceptable to the OCMI or approved by the National Maritime Center (NMC) for a HSC type rating endorsement; and

c. Operating Experience.

Completion of a period of operating experience, as required by the OCMI. For the first vessel of a particular type, the OCMI may make special arrangements for the initial operator to obtain operating experience.

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The Coast Guard does not currently provide formal approval of training courses for hydrofoil and ACV operators, other than those that are considered High-Speed Craft under the HSC Code. Although hydrofoils and ACVs may not be built and classed to the High Speed Craft Code, the training required for personnel on a HSC is an appropriate reference. Training should be substantially similar to that prescribed in NMC Policy Letter 6-01 or superseding policy (although the OCMI's discretion in this regard is not limited). The OCMI's prior review and acceptance of a training course's level of proficiency is appropriate; an inspector may be assigned to participate in or monitor such a course to evaluate its effectiveness.

3. Manning Standards.

A hydrofoil or ACV shall carry two credentialed individuals having radar observer endorsements on their credentials; this arrangement will allow one operator to monitor the radar while the other "cons" the vessel. The number of required deckhands shall be determined by the OCMI according to the size and arrangement of the vessel, its route(s), and its operation; a minimum of four deckhands is envisioned.

NOTE: This manning scale applies only to vessels under 100 GRT, operating up to 12 consecutive hours. Vessels operating for more than 12 hours at a time shall be required to carry another full crew for relief purposes.

T. Hydrofoils And ACVs Over 100 GRT.

Requests relative to personnel qualifications and manning scales for large hydrofoils and ACVs, other than those subject to inspection under 46 U.S.C. 3301, shall be forwarded with full background information to the Commandant (CG-CVC), via the district commander. Insofar as practical, the manning scales for such vessels shall parallel those of conventional vessels of similar trades, routes, and tonnages. Requirements for special training, radar observer endorsements, and two credentialed individuals per deck watch shall apply; unique machinery installations may require special training or engineering personnel.

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Currently, submersibles have only been inspected for service as passenger vessels. However, there are a number of uninspected vessels of this type, including uninspected passenger submersibles (carrying 6 or less passengers), oceanographic research and underwater survey submersibles. Eventually, there may be an expansion of services for this class of vessel which would necessitate inspection, such as its use as an industrial vessel. Coast Guard regulations do not currently address specific credentialing and manning requirements for submersibles. A manning and licensing proposal should be submitted to Commandant (CG-CVC) via the Officer-in-Charge, Marine Inspection (OCMI). This proposal should address the levels of personnel training and qualifications including certifications held, as well as the number of personnel considered necessary for the safe operation of the vessel. The credentialed officers as well as any crewmembers would be required to complete a comprehensive course prescribed by the vessel manufacturer. It is expected the course schedule should be similar to that noted in Section B2.S.2.

2. Sample Scale.a. Crew General Operation.

1-Master

*1-Mate

*Additional Deckhands based on
the number of passengers aboard
or service requirements

* **Denotes Variables**3. Variables.

At least two credentialed officers should be provided to ensure the vessel can be safely operated under all conditions. This ensures that at least one other person is capable of taking control of the vessel's navigation should the pilot become incapacitated, and also provides another individual for assisting and directing the passengers and required crew in the event of an emergency.

V. Multi-Service/Route Manning.

The COI (or SMD/SML) for a multi-service and/or route vessel should be structured such that appropriate manning is specified for each vessel service and voyage length, including any operational limitations. For example, when appropriate a COI (or SMD/SML) may include manning scales for voyages of 600 miles and more as well as voyages of less than 600 miles. Where desired, the company should include in the manning proposal (see Chapter B1). This highest manning level is specified in the 'manning block' and all subordinate levels detailed under the 'routes permitted and conditions of operations' section of the COI.

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The OCMI is responsible for determining acceptable manning levels for vessels inspected in their respective OCMI zones. When a multi-service vessel is not operating as an OSV, it is required to meet the manning requirements of the applicable service. Any vessel operating as a multi-service vessel should have the type of service entered into the vessel's log book or record. Although an official logbook is not required for all OSVs, tank, or cargo and miscellaneous vessels operating in domestic service, 46 CFR Subchapter L requires that an OSV without an official logbook have an unofficial log or record (46 CFR 131.610). This entry should be made each time the vessel changes service. The master is to ensure that the service of the vessel (either OSV, tank, or cargo and miscellaneous) is officially noted in the vessel's logbook or record. This requirement should be entered into the conditions of operation on the vessel's COI. See also D8(m) Policy Letter 09-2001.

W. Manning And STCW Certification Reference Tables (Seagoing Vessels).

The tables found in this Section provide guidance on the numbers of credentialed deck and engineer officers appropriate to different sizes of vessels (tonnage), trading areas, and aggregate propulsion power as well as STCW certification references. Additional tables are provided, pertaining to uninspected towing vessels (UTVs) and offshore supply vessels (OSVs). These tables do not address or provide guidance applicable to Mobile Offshore Drilling Units (MODUs). The number of ratings required should be determined by the factors summarized elsewhere in this Chapter. As the watchkeeping arrangements for the engineering department and the demands placed on personnel vary significantly according to the level of automation, these tables only provide guidance and are not all-inclusive. It must be clearly understood that these tables are stated for conventional (NON-AUTOMATED) vessels, and do not invalidate the basic legal requirements outlined in Chapter B1 of this Volume. OCMI's as well as owners/operators must take all relevant factors into account during the manning determination process. In consideration of the manning scale variables, the OCMI should give due regard to the company's manning proposal as discussed in Chapter B1. See Chapter B3, paragraph B.2 for discussion on STCW applicability.

The Manning and STCW Certification Reference Tables provide the format necessary to present the comprehensive relationship between U.S. manning regulations (GRT) and STCW Certification requirements (GT ITC). With limited exceptions, the Size of Vessel column, for determining the number of credentialed officers in the required complement, is based on GRT, including for dual-tonnage vessels, (See Chapter B3, paragraph B.1). For vessels measured solely under the Convention Measurement System, the GT ITC is used to apply manning requirements. For U.S. vessels of less than 1600 GRT operating exclusively to and from U.S. ports, the STCW Grade of Officer columns are based on GRT (See Chapter B3, paragraph B.3), otherwise the GT ITC is used if assigned.

NOTE: In addition to meeting the required provisions of STCW, mariners must also hold the corresponding domestic endorsement appropriate for the vessel and trading area (46 CFR 15.401). Reference 46 CFR 15.105(g) for certain vessels engaged on domestic, near-coastal voyages (See Chapter B3, paragraph B.2.d.).

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Figure B2-1: Deck Officer Table

Trading Area	Inspection Status	Size of Vessel (GRT)	Number; Grade of Officers to be carried – STCW 2010			
			Reg II/2 Master	Reg II/2 Ch.Mate	Reg II/1 OICNW	Reg II/3 OICNW
Unlimited	Inspected	≥1,000	1	1(e)	2(a)	-
Unlimited	Inspected	<1,000 ≥500	1	-	2	-
Unlimited	Inspected	<500 ≥100	1	-	2	-
Unlimited	Inspected	<100	1	-	1(c)	-
Unlimited	Uninspected	<300 ≥200	1	-	2(d)	-
Unlimited	Uninspected	<200	1	-	1(c)	-
Near-Coastal	Inspected	≥1,000	1	1(e)	2(a)	-
Near-Coastal	Inspected	<1,000 ≥500	1	-	2	-
Near-Coastal	Inspected	<500 ≥100	-	-	-	3(b)
Near-Coastal	Inspected	<100	-	-	-	2(b)(c)
Near-Coastal	Uninspected	<300 ≥200	-	-	-	3(b)(d)
Near-Coastal	Uninspected	<200	-	-	-	-(c)

Variables

- a. When on a voyage of less than 400 miles from port of departure to port of final destination, OICNW (mate) may be reduced to one.
- b. One must have an endorsement for the capacity of master.
- c. Vessels on voyages not exceeding 12 hours in duration may, if the OCMI determines it to be safe, be operated without mates. For uninspected vessels, see Chapter B7.
- d. An individual in charge of the navigation or maneuvering of a self-propelled, uninspected, documented, seagoing vessel of 200 GRT or over must hold an appropriate license or MMC authorizing service as mate.
- e. On vessels of less than 1600 GRT an OICNW (Reg II/1) may be substituted for the Chief Mate (Reg II/2).

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Figure B2-2: Engineer Officer Table

Trading Area	Inspection Status Size of Vessel (GRT)	Registered Propulsion Power kW (hp)	Number; Grade of Officers to be carried – STCW 2010			Total
			Chief Engineer	Second Engineer (U.S. 1 st A/E)	OICEW	
Unlimited	Inspected ≥1000	≥3,000kW (4,000hp)	1; III/2	1(i); III/2	2; III/1	4
Unlimited	Inspected <1000 ≥500	≥3,000kW (4,000hp)	1; III/2	1(i); III/2	2(a); III/1	4
Unlimited	Inspected <500 ≥100	≥3,000kW (4,000hp)	1; III/2(b)	1; III/2(b)	2(a); III/1(c)	4
Unlimited	Inspected <100	≥3,000kW (4,000hp)	(h)	-	(h)	
Unlimited	Inspected ≥1000	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3	1(i); III/3	2; III/1	4
Unlimited	Inspected <1000 ≥500	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3	1(i); III/3	2(a); III/1	4
Unlimited	Inspected <500 ≥100	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3(b)	1; III/3(b)	2(a); III/1(c)	4
Unlimited	Inspected <100	<3,000kW (4,000hp) ≥750kW (1000hp)	(h)	-	(h)	-
Unlimited	Uninspected <300 ≥200	≥3,000kW (4,000hp)	1; III/2(b)(d)	-	2; III/1(c)(e)	3

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Figure B2-2: Engineer Officer Table (Con't)

Trading Area	Inspection Status Size of Vessel (GRT)	Registered Propulsion Power kW (hp)	Number; Grade of Officers to be carried – STCW 2010			Total
			Chief Engineer	Second Engineer (U.S. 1 st A/E)	OICEW	
Unlimited	Uninspected <300 ≥200	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3(b)(d)	-	2; III/1(c)(e)	3
Unlimited	Uninspected <200	≥3,000kW (4,000hp)	(h); III/2(b)	-	(h); III/1(c)	See CH. B3 Para. E
Unlimited	Uninspected <200	<3,000kW (4,000hp) ≥750kW (1,000hp)	(h); III/3(b)	-	(h); III/1(c)	See CH. B3 Para. E
Near-Coastal	Inspected ≥1000	≥3,000kW (4,000hp)	1; III/2	1(i); III/2	2; III/1	4
Near-Coastal	Inspected <1000 ≥500	≥3,000kW (4,000hp)	1; III/2	1(i); III/2	2(a); III/1	4
Near-Coastal	Inspected <500 ≥100	≥3,000kW (4,000hp)	1; III/2(b)	1; III/2(b)	2(a); III/1(c)	4
Near-Coastal	Inspected <100	≥3,000kW (4,000hp)	(h)	-	(h)	-
Near-Coastal	Inspected ≥1000	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3	1(i); III/3	2; III/1	4
Near-Coastal	Inspected <1000 ≥500	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3	1(i); III/3	2(a); III/1	4
Near-Coastal	Inspected <500 ≥100	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3(f)	1; III/3(f)	2(a); III/1(g)	4

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Figure B2-2: Engineer Officer Table (Con't)

Trading Area	Inspection Status Size of Vessel (GRT)	Registered Propulsion Power kW (hp)	Number; Grade of Officers to be carried – STCW 2010			Total
			Chief Engineer	Second Engineer (U.S. 1 st A/E)	OICEW	
Near-Coastal	Inspected <100	<3,000kW (4,000hp) ≥750kW (1,000hp)	(h)	-	(h)	-
Near-Coastal	Uninspected <300 ≥200	≥3,000kW (4,000hp)	1; III/2(b)(d)	-	2; III/1(e)(g)	3
Near-Coastal	Uninspected <300 ≥200	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3(b)(f)	-	2; III/1(e)	3
Near-Coastal	Uninspected <200	≥3,000kW (4,000hp)	(h); III/2(b)	-	(h); III/1(c)	See CH. B3 Para. E
Near-Coastal	Uninspected <200	<3,000kW (4,000hp) ≥750kW (1,000hp)	(h); III/3(f)	-	(h); III/1(g)	See CH. B3 Para. E

Variables

- If the OCMI determines it to be safe and a three watch system can effectively be maintained, OICEW may be reduced to one.
- A designated duty engineer with no horse power limitation, endorsed in accordance with STCW III/2 or III/3 (propulsion power dependant), is authorized for service as chief engineer or second engineer (U.S. 1st A/E) on vessels of not more than 500 GRT on any waters.
- A designated duty engineer with no horse power limitation, endorsed in accordance with STCW III/1, is authorized for service as OICEW on vessels of not more than 500 GRT on any waters.
- An individual engaged or employed to perform the duties of chief engineer on a mechanically propelled, uninspected, seagoing, documented vessel of 200 GRT or over must hold an appropriately endorsed license or MMC authorizing service as a chief engineer.
- An individual in charge of an engineering watch on a mechanically propelled seagoing, documented vessel of 200 GRT or over must hold an appropriately endorsed license of MMC authorizing service as an assistant engineer.

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- f. A designated duty engineer limited to vessels of not more than 3000kW (4,000hp), endorsed in accordance with STCW III/3, is authorized for service as chief engineer or second engineer (U.S. 1st A/E) on vessels of not more than 500 GRT on near-coastal waters.
- g. A designated duty engineer limited to vessels of not more than 3000kW (4,000hp), endorsed in accordance with STCW III/1, is authorized for service as OICEW on vessels of not more than 500 GRT on near-coastal waters.
- h. 46 CFR 15.1103(a) may apply.
- i. On vessels of less than 1600 GRT an OICEW (Reg II/1) may be substituted for the Second Engineer (U.S. 1st A/E) (Reg III/2).

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Figure B2-3: Uninspected Towing Vessels (UTV) – Deck Officers

Trading Area	Watch System	Size of Vessel (GRT)	Number; Grade of Officers to be carried – STCW 2010			
			Reg II/2 Master	Reg II/2 Ch.Mate	Reg II/1 OICNW	Reg II/3 OICNW
Unlimited	3 (≥600 miles)	<300 ≥200	1(a)(d)	-	2(a)(b)(d)	-
Unlimited	2 (≥600 miles)	<200	1(a)(d)	-	1(a)(d)(e)	-
Unlimited	2 (<600)	<300 ≥200	1(a)(d)	-	1(a)(b)(d)	-
Unlimited	2 (<600)	<200	1(a)(d)	-	1(a)(d)	-
Near-Coastal	3 (≥600 miles)	<300 ≥200	-	-	-	3(a)(b)(c)(d)
Near-Coastal	2 (≥600 miles)	<200	-	-	-	2(a)(c)(d)(e)
Near-Coastal	2 (<600)	<300 ≥200	-	-	-	2(a)(b)(c)(d)
Near-Coastal	2 (<600)	<200	-	-	-	2(a)(c)(d)

Variables

- a. 46 CFR 15.610(a) applies.
- b. An individual in charge of the navigation or maneuvering of a self-propelled, uninspected, documented, seagoing vessel of 200 GRT or over must hold an appropriate license or MMC authorizing service as mate.
- c. One must have an endorsement for the capacity of master.
- d. 46 CFR 15.1103(a) applies.
- e. 46 CFR 15.705(d) applies. An additional Mate (Reg II/1 OICNW) should be considered to avoid potential conflicts with STCW hours of rest provisions. See Chapter B5, Section A.5.b. for additional information.

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Figure B2-4: Uninspected Towing Vessels (UTV) – Engineer Officers

Trading Area	Watch System	Size of Vessel (GRT)	Registered Propulsion Power kW (hp)	Number; Grade of Officers to be carried – STCW 2010			Total
				Chief Engineer	Second Engineer (U.S. 1 st A/E)	OICEW	
Unlimited	3 (≥600 miles)	<300 ≥200	≥3000kW (4000hp)	1; III/2(a)(c)	-	2; III/1(b)(d)	3
Unlimited	- (≥600 miles)	<200	≥3000kW (4000hp)	(g); III/2(a)	-	(g); III/1(b)	See CH. B3 Para. E
Unlimited	2 (<600)	<300 ≥200	≥3000kW (4000hp)	1; III/2(a)(c)	-	1; III/1(b)(d)	2
Unlimited	- (<600)	<200	≥3000kW (4000hp)	(g); III/2(a)	-	(g); III/1(b)	See CH. B3 Para. E
Unlimited	3 (≥600 miles)	<300 ≥200	<3000kW (4000hp) ≥750kW (1000hp)	1; III/3(a)(c)	-	2; III/1(b)(d)	3
Unlimited	- (≥600 miles)	<200	<3000kW (4000hp) ≥750kW (1000hp)	(g); III/3(a)	-	(g); III/1(b)	See CH. B3 Para. E
Unlimited	2 (<600)	<300 ≥200	<3000kW (4000hp) ≥750kW (1000hp)	1; III/3(a)(c)	-	1; III/1(b)(d)	2
Unlimited	- (<600)	<200	<3000kW (4000hp) ≥750kW (1000hp)	(g); III/3(a)	-	(g); III/1(b)	See CH. B3 Para. E
Near-Coastal	3 (≥600 miles)	<300 ≥200	≥3000kW (4000hp)	1; III/2(a)(c)		2; III/1(b)(d)	3
Near-Coastal	- (≥600 miles)	<200	≥3000kW (4000hp)	(g); III/2(e)	-	(g); III/1(f)	See CH. B3 Para. E

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Figure B2-4: Uninspected Towing Vessels (UTV) – Engineer Officers (Con't)

Trading Area	Watch System	Size of Vessel (GRT)	Registered Propulsion Power kW (hp)	Number; Grade of Officers to be carried – STCW 2010			Total
				Chief Engineer	Second Engineer (U.S. 1 st A/E)	OICEW	
Near-Coastal	2 (<600)	<300 ≥200	≥3000kW (4000hp)	1; III/2(a)(c)	-	1; III/1(b)(d)	2
Near-Coastal	- (<600)	<200	≥3000kW (4000hp)	(g); III/2(a)	-	(g); III/1(b)	See CH. B3 Para. E
Near-Coastal	3 (≥600 miles)	<300 ≥200	<3000kW (4000hp) ≥750kW (1000hp)	1; III/3(c)(e)	-	2; III/1(d)(f)	3
Near-Coastal	- (≥600 miles)	<200	<3000kW (4000hp) ≥750kW (1000hp)	(g); III/3(e)	-	(g); III/1(f)	See CH. B3 Para. E
Near-Coastal	2 (<600)	<300 ≥200	<3000kW (4000hp) ≥750kW (1000hp)	1; III/3(c)(e)	-	1; III/1(d)(f)	2
Near-Coastal	- (<600)	<200	<3000kW (4000hp) ≥750kW (1000hp)	(g); III/3(e)	-	(g); III/1(f)	See CH. B3 Para. E.

Variables

- A designated duty engineer with no horse power limitation, endorsed in accordance with STCW III/2 or III/3 (propulsion power dependant), is authorized for service as chief engineer or second engineer (U.S. 1st A/E) on vessels of not more than 500 GRT on any waters.
- A designated duty engineer with no horse power limitation, endorsed in accordance with STCW III/1, is authorized for service as OICEW on vessels of not more than 500 GRT on any waters.
- An individual engaged or employed to perform the duties of chief engineer on a mechanically propelled, uninspected, seagoing, documented vessel of 200 GRT or over must hold an appropriately endorsed license or MMC authorizing service as a chief engineer (see 46 CFR 15.820(b)).

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- d. An individual in charge of an engineering watch on a mechanically propelled seagoing, documented vessel of 200 GRT or over must hold an appropriately endorsed license or MMC authorizing service as an assistant engineer (see 46 CFR 15.825(a)).
- e. A designated duty engineer limited to vessels of not more than 3,000kW (4,000hp), endorsed in accordance with STCW III/3, is authorized for service as chief engineer or second engineer (U.S. 1st A/E) on vessels of not more than 500 GRT on near-coastal waters.
- f. A designated duty engineer limited to vessels of not more than 3,000kW (4,000hp), endorsed in accordance with STCW III/1, is authorized for service as OICEW on vessels of not more than 500 GRT on near-coastal waters.
- g. 46 CFR 15.1103(a) may apply.

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Figure B2-5: Offshore Supply Vessels (OSV) – Deck Officers

Trading Area	Watch System	Size of Vessel (GRT/ GT ITC)	Number; Grade of Officers to be carried – STCW 2010			
			Reg II/2 Master	Reg II/2 Ch.Mate	Reg II/1 OICNW	Reg II/3 OICNW
Unlimited	3 (≥600 miles)	≥6,000 GT ITC	1; II/2	1; II/2	2; II/1	-
Unlimited	3 (≥600 miles)	<500 GRT or 6,000 GT ITC	1; II/2	-	2(c); II/1	-
Unlimited	2 (≤600 miles)	≥6,000 GT ITC	1; II/2	1; II/2	1; II/1	-
Unlimited	2 (≤600 miles)	<500 GRT or 6,000 GT ITC	1; II/2	-	1(c); II/1	-
Near-Coastal	3 (≥600 miles)	≥6,000 GT ITC	1; II/2	1; II/2	2; II/1	-
Near-Coastal	3 (≥600 miles)	<500 GRT(a) or 6,000 GT ITC ≥500 GT ITC	1; II/2	-	2(c); II/1	-
Near-Coastal	2 (≤600 miles)	≥6,000 GT ITC	1; II/2	1; II/2	1; II/1	-
Near-Coastal	2 (≤600 miles)	<500 GRT(a) or 6,000 GT ITC ≥500 GT ITC	1; II/2	-	1(c); II/1	-
Near-Coastal	3 (≥600 miles)	<500 GT ITC	-	-	-	3(c); II/3(b)
Near-Coastal	2 (≤600 miles)	<500 GT ITC	-	-	-	2(c); II/3(b)

Variables

- a. If a vessel is only assigned a GRT and no GT ITC, then the master and mate may be certificated in accordance with STCW II/3 for a vessel of less than 500 GRT on a near coastal voyage.
- b. One must have an endorsement as master.
- c. For OSVs less than 100 GRT, see 46 CFR 15.810 (b)(5).

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Figure B2-6: Offshore Supply Vessels (OSV) – Engineer Officers

Trading Area	Watch System	Size of Vessel (GRT/ GT ITC)	Registered Propulsion Power kW (hp)	Number; Grade of Officers to be carried – STCW 2010			Total
				Chief Engineer	Second Engineer (U.S. 1 st A/E)	OICEW	
Unlimited	3 (≥600 miles)	≥6,000 GT ITC	≥3,000kW (4,000hp)	1; III/2	1; III/2	2; III/1	4
Unlimited	3 (≥600 miles)	<500 GRT or 6,000 GT ITC	≥3,000kW (4,000hp)	1; III/2(b)	1; III/2(b)	2(a); III/1(c)	4
Unlimited	2 (<600)	≥6,000 GT ITC	≥3,000kW (4,000hp)	1; III/2	1; III/2	1; III/1	3
Unlimited	2 (<600)	<500 GRT or 6,000 GT ITC ≥200	≥3,000kW (4,000hp)	1; III/2(b)	-	2(a); III/1(c)	3
Unlimited	3 (≥600 miles)	≥6,000 GT ITC	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3	1; III/3	2(a); III/1	4
Unlimited	3 (≥600 miles)	<500 GRT or 6,000 GT ITC ≥200	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3(b)	-	2; III/1(c)	3
Unlimited	2 (<600)	≥6,000 GT ITC	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3	1; III/3	1; III/1	3
Unlimited	2 (<600)	<500 GRT or 6,000 GT ITC ≥200	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3(b)	-	2(a); III/1(c)	3
Unlimited	Any	<200	Any	(f)	-	(f)	-

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Figure B2-6: Offshore Supply Vessels (OSV) – Engineer Officers (Con't)

Trading Area	Watch System	Size of Vessel (GRT/ GT ITC)	Registered Propulsion Power kW (hp)	Number; Grade of Officers to be carried – STCW 2010			Total
				Chief Engineer	Second Engineer (U.S. 1 st A/E)	OICEW	
Near-Coastal	3 (≥600 miles)	≥6,000 GT ITC	≥3,000kW (4,000hp)	1; III/2	1; III/2	2; III/1	4
Near-Coastal	3 (≥600 miles)	<500 GRT or 6,000 GT ITC	≥3,000kW (4,000hp)	1; III/2(b)	1; III/2(b)	2(a); III/1(c)	4
Near-Coastal	2 (<600)	≥6,000 GT ITC	≥3,000kW (4,000hp)	1; III/2	1; III/2	1; III/1	3
Near-Coastal	2 (<600)	<500 GRT or 6,000 GT ITC ≥200	≥3,000kW (4,000hp)	1; III/2(b)	-	2(a); III/1(c)	3
Near-Coastal	3 (≥600 miles)	≥6,000 GT ITC	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3	1; III/3	2(a); III/1	4
Near-Coastal	3 (≥600 miles)	<500 GRT or 6,000 GT ITC ≥200	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3(d)	-	2; III/1(e)	3
Near-Coastal	2 (<600)	≥6,000 GT ITC	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3	1; III/3	1; III/1	3
Near-Coastal	2 (<600)	<500 GRT or 6,000 GT ITC ≥200	<3,000kW (4,000hp) ≥750kW (1,000hp)	1; III/3(d)	-	2(a); III/1(e)	3
Near-Coastal	Any	<200	Any	(f)	-	(f)	-

PART B: VESSEL MANNING**CHAPTER 2: SAMPLE VESSEL MANNING SCALES**Variables

- a. If the OCMI determines it to be safe and the applicable watch system can be effectively maintained, OICEW may be reduced to one.
- b. A designated duty engineer with no horse power limitation, endorsed in accordance with STCW III/2 or III/3 (propulsion power dependant), is authorized for service as chief engineer or second engineer (U.S. 1st A/E) on vessels of not more than 500 GRT on any waters.
- c. A designated duty engineer with no horse power limitation, endorsed in accordance with STCW III/1, is authorized for service as OICEW on vessels of not more than 500 GRT on any waters.
- d. A designated duty engineer limited to vessels of not more than 3,000kW (4,000hp), endorsed in accordance with STCW III/3, is authorized for service as chief engineer or second engineer (U.S. 1st A/E) on vessels of not more than 500 GRT on near-coastal waters.
- e. A designated duty engineer limited to vessels of not more than 3,000kW (4,000hp), endorsed in accordance with STCW III/1, is authorized for service as OICEW on vessels of not more than 500 GRT on near-coastal waters.
- f. 46 CFR 15.1103(a) may apply.

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PART B: VESSEL MANNING**CHAPTER 3: MANNING REQUIREMENTS FOR CREDENTIALLED OFFICERS****A. Introduction.**

Part B, Chapters 1-7 (legacy Chapters 20-26), has been structured to interlink various elements affecting the safe manning and watchkeeping on U.S. vessels and should be referenced comprehensively. Refer to paragraph B1.A for a summary of all Chapters. This Chapter provides supplementary guidance on the manning requirements for credentialed officers, as well as a detailed discussion on the impact of international standards.

B. Impact Of International Standards.

The combined effect of several international conventions significantly impact manning standards for credentialed personnel on U.S. documented vessels operating beyond the boundary line. A conceptual understanding of the relationship between the fundamentals of the manning level provisions relating to the establishment of crew complement and the certification requirements for the requisite crew is essential to the administration of the safe manning principles. The manning levels on U.S. documented vessels are derived from statutory and regulatory requirements, in concert with official directives.

1. Officer's Competency Certificates Convention (OCCC) 1936.

The OCCC is implemented in 46 U.S.C. 8304 requiring persons serving in the capacity of master, mate, or engineer on any vessel operating on the high seas (i.e., operating beyond the boundary line) of 200 GRT or over to hold a certificate of competency issued under 46 U.S.C. 7101 appropriate for the route and tonnage of the vessel. The OCCC differs from other conventions in that various definitions are presented, which associate positions such as navigating officer and engineer officer in charge of a watch with any person that is actually in charge of the navigation or maneuvering of a vessel or running of a vessel's engines, respectively. In essence, this means that any person performing duties as defined under the Convention must be the holder of an appropriate officer endorsement, and not merely a merchant mariner's document/credential or rating endorsement. This doctrine serves as the statutory framework for the prescription of a distinct tonnage threshold to be applied as the basis for determining the minimum number of credentialed officers required for the safe operation of a vessel. The OCCC differs from other international instruments in relation to the applicability of the U.S. Regulatory Measurement System versus the measurement system of the International Convention on Tonnage Measurement of Ships, 1969, otherwise known as the Convention Measurement System. Accordingly, for vessels that have requested and received a GRT measurement, the Secretary is required to use the Regulatory Measurement System tonnage as the basis for determining the required number of credentialed officers in a crew complement (46 U.S.C. 14305). For vessels measured solely under the Convention Measurement System, the GT ITC is used to apply manning requirements. Mariners engaged to perform the duties in this capacity, as required by statute or regulation, are obliged to comply with the training and certification requirements of STCW, as applicable (see paragraphs B.2 and B.3 of this Chapter).

PART B: VESSEL MANNING**CHAPTER 3: MANNING REQUIREMENTS FOR CREDENTIALLED OFFICERS****2. International Convention Of Standards Of Training, Certification And Watchkeeping For Seafarers (STCW) 1978, as amended.**

The U.S. regulations (46 CFR Parts 10, 11, 12, 13, and 15) parallel the provisions in STCW regarding the qualification and training requirements for watchstanding personnel. Through various amendments, STCW prescribes minimum standards relating to training, certification and watchkeeping for seafarers, which Parties are obliged to meet or exceed. Although STCW does not include specific manning level requirements, it does impact manning decisions where certification and training are concerned. Except as noted in 46 CFR 15.1101(a)(1) and (2), the STCW regulations apply to seagoing vessels as defined in 46 CFR 10.107. As discussed in 46 CFR 15.1103, onboard a seagoing vessel operating beyond the boundary line, as described in 46 CFR Part 7, no person may employ or engage any person to serve, and no person may serve, in a position requiring a person to hold an STCW endorsement, including master, chief mate, chief engineer officer, second engineer officer, officer of the navigational or engineering watch, or GMDSS radio operator, unless the person serving holds an appropriate, valid STCW endorsement issued in accordance with 46 CFR Part 11. Mariners engaged to perform certain shipboard duties, as required by statute or regulation, are obliged to comply with the training and certification requirements of STCW, as applicable (see paragraph B.3 of this Chapter).

NOTE: 2010 STCW Amendments, Transitional Provisions.

The 2010 STCW Amendments came into force on 1 January 2012, including the new requirements for minimum rest hours and record of hours of work. In many cases, there is a five-year transitional period, until 1 January 2017, to allow for a phased in implementation of the provisions. However, in some cases (e.g. security endorsements) implementation is sooner. Attention must be paid to these entry into force dates to ensure appropriate compliance. Nevertheless, after 1 January 2017, all mariners serving on vessels subject to STCW must meet the STCW Convention standards, including the 2010 Amendments. The International Maritime Organization (IMO) issued Circulars STCW.7/Circ.16, STCW.7/Circ.17, and STCW.7/Circ.21 which provide clarification of the transitional provisions and advice (for Port State Control Officers) on the transitional arrangements leading up to full implementation of the 2010 Amendments to the STCW Convention and Code on 1 January, 2017.

PART B: VESSEL MANNING**CHAPTER 3: MANNING REQUIREMENTS FOR CREDENTIALLED OFFICERS**a. Deck Department Structure.

STCW identifies three licensed deck officer positions: master, chief mate and officer in charge of a navigational watch (e.g., mate). Refer to Chapter B2 for Manning and STCW Certification Reference Tables.

STCW Regulation	STCW Capacity	Factors
II/1	Officer in Charge of a Navigational Watch (OICNW)	Seagoing vessels of 500 GT ITC or more.
II/2	Master and Chief Mate	Seagoing vessels of 500 GT ITC or more.
II/3	Master and OICNW *See II/3.1 & .2 for vessels not engaged on near-coastal voyages	Seagoing vessels of less than 500 GT ITC engaged on near-coastal voyages.

b. Engine Department Structure.

STCW identifies three licensed engineer officer positions: chief engineer, second engineer officer (equivalent to a U.S. credentialed first assistant engineer), and officer in charge of an engineering watch (equivalent to a U.S. credentialed second or third assistant engineer or designated duty engineer). Refer to Chapter B2 for Manning and STCW Certification Reference Tables.

STCW Regulation	STCW Capacity	Factors
III/1	Officer in Charge of an Engineering Watch (OICEW)	Seagoing vessels powered by main propulsion machinery of 750 kW (1,000 hp) propulsion power or more.
III/2	Chief Engineer and Second (First Assistant) Engineer Officer	Seagoing vessels powered by main propulsion machinery of 3,000 kW (4,000 hp) propulsion power or more.
III/3	Chief Engineer and Second (First Assistant) Engineer Officer	Seagoing vessels powered by main propulsion machinery of between 750 kW (1,000 hp) and 3,000 kW (4,000 hp) propulsion power.

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(1) Designated Duty Engineer (DDE). Under U.S. provisions, if appropriately endorsed in accordance with the applicable STCW requirements, a DDE license or endorsement authorizes service as chief (III/2 or III/3) or assistant engineer (III/1) on vessels of not more than 500 GRT (GT ITC if GRT is not assigned) in the following manner:

- (a) A DDE limited to vessels of not more than 1000 hp or 4000 hp may serve only on near coastal, Great lakes, or inland waters;
- (b) A DDE with no horsepower limitations may serve on any waters.

NOTE: The term designated duty engineer (DDE) employed under U.S. regulations is not synonymous with the similarly used term in STCW. The term DDE in U.S. regulations specifically refers to a national engineer officer endorsement (46 CFR 11.524) and authorizes service as a chief or assistant engineer on vessels of less than 500 GRT within certain restrictions (46 CFR 15.915). Whereas, DDE in STCW pertains to an engineering duty status in a periodically unmanned engine-room under Regulation III/1. However, as provided in 46 CFR 11.524, an engineer officer nationally endorsed as DDE may qualify for an STCW endorsement (III/1, III/2, and/or III/3).

(2) Electro-Technical Officer (ETO). Although the Coast Guard has amended the regulations to facilitate the issuance of ETO endorsements in accordance with STCW Regulations III/6, there is no corresponding regulation to require an ETO under the provisions of safe manning. However, should the COI or SMD stipulate a specific carriage requirement or if an ETO is voluntarily carried, the persons serving in that capacity should be duly endorsed.

c. Additional Requirements.

(1) Basic Training (46 CFR 15.1105). Onboard a seagoing vessel to which this section applies, no person may assign a shipboard duty or responsibility to any person who is serving in a position that must be filled as part of the required crew complement or who is assigned a responsibility on the muster list, and no person may perform any such duty or responsibility, unless the person performing it can produce evidence of having:

- (a) Received appropriate approved basic training or instruction as set out in the standards of competence under STCW Regulation VI/1, with respect to personal survival techniques, fire prevention and fire-fighting, elementary first aid, and personal safety and social responsibilities; and
- (b) Maintained the standard of competence under STCW Regulation VI/1, with respect to personal survival techniques, fire prevention and fire-fighting, elementary first aid, and personal safety and social responsibilities, every 5 years.

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- (2) Lifeboatman (46 CFR 15.404(e) and (g)). Every person assigned duties as a lifeboatman must hold a credential attesting to such proficiency. Persons serving on vessels subject to the STCW Convention must also hold an appropriate STCW endorsement (VI/2) in proficiency in survival craft and rescue boats other than fast rescue boats (PSC), or in proficiency in fast rescue boats.
 - (3) Tankerman. See 46 CFR 15.860.
 - (4) Passenger Vessels On International Voyages. In accordance with 46 CFR 15.1103(f), onboard a passenger ship, as defined by the Convention for the Safety of Life at Sea, 1974, as amended (SOLAS), on an international voyage, any person serving as master, chief mate, mate, chief engineer, engineer officer, and any person holding a license, MMD, or MMC and performing duties relating to safety, cargo handling, or care for passengers, must meet the appropriate requirements of Regulation V/2 of the STCW Convention. These individuals must hold documentary evidence to show they meet these requirements. 46 CFR 11.1105 and 12.905 set out similar requirements.
 - (5) Medical Certificates. After 1 January 2017, all persons employed or engaged onboard vessels to which STCW applies must hold a medical certificate valid for 2 years unless the mariner is under the age of 18, in which case the maximum period of validity is 1 year (46 CFR 15.401(c)/15.1103(h)). If a mariner's medical certificate expires during a voyage, it will remain valid until the next United States port of call, provided that the period after expiration does not exceed 90 days (46 CFR 15.1103(h)(3)). See page ANNEX-11 for additional information and transitional provisions.
- d. Near-Coastal Voyages.
- (1) Domestic Near-Coastal Voyages. The application of STCW to vessels on domestic voyages is not a result of the 1995 Amendments. STCW, as adopted in 1978 and as ratified by the United States in 1991, applied to personnel serving on "seagoing vessels," not only vessels on international voyages. Consequently, the Coast Guard is not able to provide a general exemption for seagoing vessels on domestic-only voyages. However, as provided in 46 CFR 15.105(g), personnel serving on the following small vessels engaged exclusively on domestic, near-coastal voyages are in compliance with 46 CFR Subpart K and are, therefore, not subject to further requirements for the purposes of the STCW Convention (also see paragraph B3.B.3.b):
 - (a) Small passenger vessels subject to Subchapter T or K of title 46, CFR.
 - (b) Vessels of less than 200 GRT (other than passenger vessels subject to Subchapter H of title 46 CFR).
 - (c) Uninspected passenger vessels (UPVs) as defined in 46 U.S.C. 2101(42)(B).

PART B: VESSEL MANNING**CHAPTER 3: MANNING REQUIREMENTS FOR CREDENTIALLED OFFICERS**

Under 46 CFR 15.105(h), personnel serving on vessels identified in paragraphs B3.B.2.d.1.a and b may be issued, without additional proof of qualification, an appropriate STCW endorsement on their credential when the Coast Guard determines that such an endorsement is necessary to enable the vessel to engage on a single international voyage of a non-routine nature. The STCW endorsement will be expressly limited to service on the vessel or the class of vessels and will not establish qualification for any other purpose.

- (2) Foreign Near-Coastal Voyages. Foreign Administrations which are signatory to the STCW Convention may accept, by means of a bi-lateral agreement with the United States, the near-coastal STCW endorsements issued to U.S. mariners for service on vessels regularly engaged on voyages in the near-coastal waters of that Administration. In this case, U.S.-credentialed mariners will be allowed to utilize STCW near-coastal endorsements to work on U.S. vessels only when engaged on near-coastal voyages as defined by that foreign Administration. Under no circumstances shall the 200-nautical mile limitation on a credential be increased.
 - (a) While the U.S. is in the process of entering into a bi-lateral agreement described in paragraph (2) above and U.S. documented vessels regularly engage on near-coastal voyages off the coast of another Administration, the United States' near-coastal endorsement may be used until a bi-lateral agreement can be implemented. In these cases, a U.S.-near-coastal endorsement with a corresponding STCW endorsement should be sufficient for service within any limitations specified on the credential until a bi-lateral agreement between the two countries is implemented.
 - (b) If a foreign Administration has not defined near-coastal voyages or proposed variations to the STCW competence, U.S.-credentialed seafarers serving on vessels regularly engaged in the vicinity of that foreign Administration should hold the appropriate STCW endorsement and meet the STCW competence applicable to seafarers serving on ships not engaged on near-coastal voyages. This is consistent with the STCW provisions of Regulation I/3, paragraph 3, that requires that Administrations for ships that are regularly engaged on near-coastal voyages off the coast of another Party, may prescribe requirements that are at least equal to those of the Party off whose coast the ship is engaged.
 - (c) If a foreign Administration declines to enter into a bi-lateral agreement, but has established near-coastal voyage variations, in compliance with paragraph 1 of STCW Regulation I/3, U.S.-credentialed seafarers may serve on a U.S.-vessel under the authority of a U.S.-issued near-coastal STCW endorsement. Where a mariner is serving on a near-coastal endorsement, he or she should still comply with the near-coastal limitations established by the foreign Administration and, in no case, should that limitation be increased to more

PART B: VESSEL MANNING**CHAPTER 3: MANNING REQUIREMENTS FOR CREDENTIALLED OFFICERS**

than 200 nautical miles.

- (d) The Coast Guard will advise the maritime industry when the United States has entered into bi-lateral agreements with foreign Administrations as described above. The vessel owner/operator and master should be aware of the coastal state's requirements for vessels engaged on near-coastal voyages off the coast of another Party.
- (e) Enforcement of the Canadian Marine Personnel Regulations took effect on October 26, 2013 for U.S. vessels in Canadian waters. These regulations apply to U.S. vessels operating in Canadian waters when enroute to a Canadian port or place. The Canadian regulations stipulate that an individual on watch must hold a certificate/license appropriate to the class of vessel for the voyages on which the vessel is engaged. Although not required by U.S. regulations, the Canadian regulations require that, irrespective of tonnage or length, the authorized representative of a vessel shall ensure that its crew complement consist of an individual credentialed to be in charge of the vessel's machinery unless the vessel has a propulsive power of less than 750 kW (1,000 hp). Accordingly, all personnel (including additional engineering personnel employed to comply with the Canadian regulations) must hold a valid Merchant Mariner Credential issued by the U.S. Although the Canadian Marine Personnel Regulations call for certification in accordance with the International Convention of Standards of Training, Certification and Watchkeeping for Seafarers (STCW), Transport Canada and the Coast Guard have executed a memorandum of understanding (MOU) for the mutual recognition of personnel licensure and certification applicable to each nation's trading vessels while trading in the domestic waters of either the United States or Canada. Therefore, personnel are not required to obtain STCW endorsements when operating in the domestic waters of either the United States or Canada. The following notes may apply when preparing safe manning documentation for subject vessels;
- 1) For certain vessels of less than 200 GRT (or uninspected vessels operating exclusively inward of the Boundary Lines) on voyages to Canada, the Certificate of Inspection or safe manning document maybe endorsed to the effect of;

***CHIEF ENGINEER, ASSISTANT ENGINEERS, OR DESIGNATED DUTY ENGINEERS NOT REQUIRED OTHER THAN ON VOYAGES TO CANADA IN ACCORDANCE WITH DIVISION 4 OF THE CANADIAN MARINE PERSONNEL REGULATIONS.**

NOTE: See USCG MSIB 021-12 for additional information.

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- 2) For vessels trading exclusively between the United States and Canada, all references to STCW including the “STCW Grade/Capacity” and “STCW Regulation” fields on the safe manning documentation may be omitted as “N/A” if the “Trading Area” is limited to “Inland U.S./Canada,” “Near-Coastal U.S./Canada,” or “Great Lakes” exclusively.
 - 3) For uninspected towing vessels to receive safe manning documentation endorsed for Periodically Unattended Machinery Space (PUMS), operators may present the OCMI with a Certificate of Class appropriately endorsed for unattended machinery status or meet the U.S. requirements (e.g. 46 CFR Part 62). Alternatively, as Part 62 and MSM Volume III Chapter B6 are not necessarily applicable to uninspected vessels, NVIC 1-78 may be used to establish PUMS.
- e. Exclusive Great Lakes And Inland Voyages.
The Coast Guard does not consider STCW to apply directly to personnel serving on U.S. vessels operating exclusively on the Great Lakes or other inland waters (see 61 FR 95-062, 59 [March 26, 1996]).
3. International Convention On Tonnage Measurement Of Ships, 1969 (ITC).
With the 1995 Amendments to STCW coming into force on 1 February 2002, absent explicit authorization to the contrary, GT ITC is the applicable tonnage for the application of STCW. As provided for in Appendix 10 of IMO Resolution A.1052(27), Procedures for Port State Control, 2011, adopted 30 November 2011, with the exception of U.S. vessels of less than 1600 GRT operating exclusively to and from U.S. ports, use of Regulatory Measurement System tonnages for this purpose is no longer authorized (see paragraph B.3.b of this Chapter). Therefore, regardless of tonnage, vessels engaged upon international voyages should be manned with appropriately credentialed mariners in accordance with STCW as reflected in the Certificate of Inspection or safe manning documentation. (See paragraph B.1 of this Chapter for discussion on the application of tonnage as the basis for determining the required number of credentialed officers in a crew complement.)
 - a. ITC Impact On Specific Vessels.
Small passenger vessels (SPV) and seagoing tugs are most significantly affected by the ITC. Consider, for example, the impact on a new small passenger vessel which measures in excess of 2500 GT ITC, but measures only 99 GRT by the Regulatory Measurement System. If the vessel remains exclusively in domestic service the master and mates must hold 100 GRT endorsements. If the same vessel engages in international voyages the master and mates must hold credentials with a minimum of 3000 GT ITC endorsements. In essence, the officers of this vessel would need to hold significantly higher-level endorsements when on vessels or voyages subject to STCW.

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The Coast Guard has established arrangements for the implementation of STCW domestically, including the application of the Regulatory Measurement System (GRT) in determining the applicability of STCW to mariners employed on U.S. flag vessels of more than 200 GRT (500 GT ITC if GRT is not assigned) but less than 1600 GRT that operate beyond the boundary line and exclusively to and from U.S. ports (excluding operations from a foreign port) (see 62 FR 95-062, 123 [June 26, 1997]). Further, in accordance with NVIC 7-00 and 46 CFR 15.105(g)(2), it is the policy of the Coast Guard that some variance is appropriate for personnel serving on U.S. flag vessels less than 200 GRT (500 GT ITC if GRT is not assigned) on domestic voyages beyond the boundary line. The Coast Guard has specifically determined that, for certain small vessels on domestic near-coastal voyages, the scheme of safety provided by the current credentialing program and the inspection and oversight programs for small vessels deliver a level of safety comparable to STCW.

4. The International Convention For Safety Of Life At Sea (SOLAS).

The IMO provisions relating to safe manning are covered by regulation in Chapter V of the International Convention for the Safety of Life at Sea (SOLAS), 1974, whose requirements are supported by IMO Resolution A.1047(27) Principles of Safe Manning, adopted in 2011. Specifically, SOLAS Chapter V, Regulation 14 requires each vessel to which Chapter I of SOLAS applies to be "sufficiently and efficiently" manned as evidenced by a Safe Manning Document (SMD) issued by the flag-state. It is important to distinguish between the Principles of Safe Manning, IMO Resolution A.1047(27), and the requirement to maintain a SMD found in SOLAS Chapter V/14. The principles of safe manning apply to all vessels, regardless of size, as a guideline. The requirement to possess a flag-state issued SMD applies to vessels subject to Chapter I of SOLAS (e.g. cargo vessels of 500 GT ITC or more, absent explicit authorization to the contrary). To avoid adverse Port State Control action (e.g. detention), regardless of the SMD applicability, operators of vessels on international voyages should observe the guidelines pertaining to the principles of safe manning.

a. Inspected Vessels.

For U.S. flagged inspected vessels, the Certificate of Inspection (COI) serves as the safe manning document. The COI states the minimum number of credentialed officers and crewmembers necessary for the safe operation of inspected vessels, as required by 46 U.S.C. 8101, 46 CFR 15.105 and 15.501.

b. Uninspected Vessels.

It is the responsibility of the owner/operator to ensure that each vessel under their management complies with the manning, certification, and watchkeeping requirements in accordance with all applicable statutes and regulations.

- (1) Although they are not provided with a COI, certain uninspected vessels that engage on international voyages are required to carry a SMD in accordance with SOLAS Chapter V/14 and should apply for one via the cognizant Coast Guard

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OCMI (46 CFR 15.105). When requesting a SMD, owners/operators should refer to Chapter B1 for additional guidance. When preparing a SMD, the OCMI should follow the sample format provided in the Annex to this Volume.

- (2) When engaged on international voyages, those uninspected vessels which are not subject to the specific requirements of SOLAS Chapter V/14 are encouraged to request a permissive SML to document flag-state approval of the vessel's manning levels. The SML provides objective evidence to port-state authorities that the subject vessel meets the minimum safe manning requirements as determined by the Flag State. When requesting a SML, owners/operators should refer to Chapter B1 for additional guidance. When preparing a SML, the OCMI should follow the sample format provided in the Annex to this Volume.

5. Principles Of Safe Manning.

In establishing the safe manning level to assure a vessel is sufficiently and efficiently manned, SOLAS makes reference to IMO Resolution A.1047(27) which establishes the principles of safe manning and prescribes the form and content of the safe manning document. Resolution A.1047(27) suggests that, except in ships of limited size and limited propulsion power or operating under provisions for unattended machinery spaces, manning levels should be based on the presumption that the master and chief engineer do not stand watch under normal circumstances. It further suggests, subject to exceptions, watchstanders should normally be divided into three watches; and that lookout and helmsman duties are separate. Refer to Chapters B2 [Manning and STCW Certification Reference Tables (Seagoing Vessels)], B5, and B7 for additional discussion on vessels permitted to maintain a two-watch system.

C. Masters.

The provisions of 46 U.S.C. 8301, 8304, and 8902, as well as 46 CFR 15.805, require certain self-propelled vessels to have the full-time services of a master. Various statutes, regulations, and customs place continuing responsibilities upon the master of a vessel, whether underway, at anchor, moored, or handling cargo. Except aboard vessels of limited size, or on vessels having dedicated limited routes, these responsibilities cannot be properly discharged when the master is in charge of a watch. It is not therefore expected that the master will stand watches in the regular routine of the vessel, except on vessels of 1,000 GRT or less.

D. Mates.

A number of statutory provisions in Title 46, U.S. Code, as well as 46 CFR 15.810, dictate the minimum number of credentialed mates required for a vessel. The statutes predominately specify manning level based upon watchkeeping requirements. In establishing the minimum number of mates required for safe operation, the Officer in Charge, Marine Inspection (OCMI) should consider a vessel's total operational requirements, such as cargo handling, emergency evolutions, navigational challenges to include vessel congestion and Vessel Traffic Service areas, visibility restrictions, proximity to navigational hazards, and preventive maintenance in

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addition to mandated levels of manning. The sample manning scales in Chapters B2 and B7 have been prepared following this philosophy.

1. Minimum Number Of Mates.

46 U.S.C. 8301 requires a minimum number of mates based on vessel tonnage, length of voyage, and in some cases upon vessel type. These mate manning levels are not discretionary. An OCMI may not authorize fewer mates than provided within this statutory section.

- a. On vessels subject to STCW, the individual meeting the requirement of this section must also hold an STCW endorsement as officer in charge of a navigational watch with the appropriate tonnage for the vessel upon which he or she is operating, except as noted in §15.105(g) of this part for vessels on domestic near-coastal voyages.

2. Master, Mate, Or Engineer Officer Requirement.

- a. 46 U.S.C. 8304 requires persons serving as master, mate, or engineer on any vessel of 200 GRT or more operating on the high seas (e.g., beyond the boundary line) to hold a license or MMC officer endorsement appropriate for the route and tonnage of the vessel.

- b. The above notwithstanding, neither the statute nor the implementing regulations expressly specify the grade of credential required to fill either the requirement for mate or engineer. Chapter B2 of this Volume does provide delineation in respect to the suggested grades for the sample manning scales. In STCW, there is little discretion in specifying the manning levels for vessels subject to the provisions of STCW in relation to the mandatory minimum requirements for certification in the management level capacities. However, in the case of the operational level, STCW makes no delineation between 2nd or 3rd Mate (only OICNW-II/1) and 2nd [U.S.] or 3rd assistant engineer (only OICEW-III/1). In this case, the grade for the mates and engineers at the operational level are variables for the OCMI to consider when establishing the manning level. In doing so, the OCMI should consider the job descriptions and responsibilities for all positions as identified and defined in the relevant safety management system.

3. Working Conditions And Watch Requirements.

46 U.S.C. 8104 has a number of subsections concerning working conditions and watch requirements that may result in a higher number of mates being assigned than might otherwise be required by 46 U.S.C. 8301.

- a. Section 8104(a) requires a minimum rest period for the officer in charge of the navigation watch upon a vessel's departure from port or immediately after the vessel departs. A sufficient number of mates must be assigned to ensure all in-port duties may be accomplished safely and a rested crew is available for departure. 46 CFR 15.1109 and 15.1111 also provide provisions on watches, work hours, and rest periods for vessels operating beyond the boundary line.

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- b. Section 8104(b) provides that credentialed officers on a seagoing vessel of not more than 100 GRT may not be required to work more than 12 hours in a 24-hour period at sea. The Coast Guard, in 46 CFR 15.1111, requires manning levels to ensure that every person assigned duty as officer in charge of a navigational or engineering watch, or duty as ratings forming part of a navigational or engineering watch, or designated safety, prevention of pollution, and security duties onboard any vessel that operates beyond the boundary line must receive:

- (1) a minimum of 10 hours of rest in any 24-hour period; and
- (2) 77 hours of rest in any 7-day period.

Under 46 CFR 15.810, a credentialed mate is normally required in addition to the master. If the voyages do not exceed 12 hours in duration, the OCMI has the discretion to determine if the vessel can be safely operated without a licensed/credentialed mate. The extent of the master's duties in port should be considered when making this determination. If no mate is required and the vessel operates more than 12 hours in a 24-hour period then an alternate crew must be provided to ensure safe operation while the vessel is underway.

- c. Section 8104(c) provides that credentialed officers and unlicensed seamen on Great Lakes towing vessels cannot be required to work more than 8 hours in a day.
- d. Section 8104(d) provides that the credentialed officers and certain unlicensed crew positions on seagoing and Great Lakes vessels of more than 100 GRT must be divided into at least three watches. Therefore, unless the master also stands watch, at least three mates would be required on such vessels. Section 8104(g) modifies this requirement in that it allows a 2-watch system for the credentialed officers and certain crewmembers on seagoing towing vessels, OSVs, and barges engaged on voyages of less than 600 nautical miles.
- e. Sections 8104(k) and (l) require either a 3-watch or 2-watch system for certain fish processing vessels based on inspection requirements, gross tonnage and service entry dates. Section 8104(m) exempts certain fish processing vessels from the above watch system requirements. (See Chapter B5 for watchkeeping arrangements and workhour limits; also see Chapter B7 for uninspected fishing industry vessels manning requirements.)
- f. Section 8104(n) limits a credentialed officer or seamen on a tanker from working more than 15 hours in any 24-hour period. In effect, Section 8104(n) imposes an average work limit of 12 hours in a 24-hour period for credentialed officers or seamen on tankers. OCMI should particularly take this factor into account in establishing tanker manning. (See detailed discussion of workhour limits in Chapters B3 and B7 of this Volume.)

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- g. Section 8104(o) imposes a 3-watch or 2-watch system for fish tender vessels engaged in the Aleutian trade depending on gross tonnages and entry date or purchase date to serve in the trade.

4. COI/SMD Manning Format – Mates.

- a. For vessels of 1600 GRT (3000 GT ITC if GRT is not assigned) or more, the grade of endorsement required for service in the capacity of mate should be indicated in the manning block of the COI or SMD.

Example:

Masters:	1
Chief Mates:	1
Second Mates:	1
Third Mates:	1

- b. For vessels of less than 1600 GRT (3000 GT ITC if GRT is not assigned), only the number of mates is required to be indicated in the manning block of the COI or SMD. An endorsement as Chief, Second, or Third Mate authorizes service as a mate where the grade level is not specified.

Example:

Masters:	1
Licensed Mates:	3

E. Chief Engineer.

1. Inspected Mechanically Propelled Vessels (46 CFR 15.820(a)).

Title 46 CFR 15.820 requires that there be an individual holding an appropriate MMC or license endorsed as chief engineer or other credential authorizing service as chief engineer employed on board the following inspected mechanically propelled vessels:

- a. Seagoing vessels of 200 GRT and over;
- b. Offshore supply vessels of more than 200 GRT; and
- c. Inland (other than Great Lakes) vessels of 300 GRT or more, if the OCMI determines that an individual with a license or the appropriate MMC officer endorsement responsible for the vessel's mechanical propulsion is necessary.

2. Uninspected Mechanically Propelled Vessels (46 CFR 15.820(b)).

An individual engaged or employed to perform the duties of chief engineer on a mechanically propelled, uninspected, seagoing, documented vessel of 200 GRT or over must hold an appropriately endorsed license or MMC authorizing service as a chief engineer.

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Individuals meeting the requirements of this section must also hold an STCW endorsement as chief engineer with the appropriate propulsion power for the vessel upon which he or she is operating, except as noted in 46 CFR 15.105(g) for vessels on domestic near-coastal voyages.

F. Engineers.

Under 46 U.S.C. 8301, a credentialed engineer must be employed aboard every seagoing vessel of 300 GRT, propelled by machinery, which carries freight or passengers. Further, section 8304 and 46 CFR 15.825 require persons serving as engineers on most seagoing vessels of 200 GRT or more to hold a license or MMC officer endorsement. Although 46 U.S.C. 8101 does permit discretion in establishing a manning scale, the following limitations must be strictly observed in exercising this discretion (see Chapter B6.A.3 for automation):

1. Oceangoing Or Coastwise Vessels Of 200 GRT Or More.

Taking into account the applications of 46 U.S.C. 8104(d) and 8304(c), the requirements are as described in paragraph B3.F. There should be at least three licensed/credentialed engineers assigned to seagoing vessels of more than 100 GRT to be divided into at least three watches per 46 U.S.C. 8104(d), unless the vessel is automated (Chapter B6.A.3). On a towing vessel, an offshore supply vessel, or a barge to which 46 U.S.C. 8104(g) applies, which are engaged on a voyage of less than 600 miles, the number of licensed/credentialed engineers may be reduced to two and divided, when at sea, into at least two watches.

2. Oceangoing Or Coastwise Vessels Of Less Than 200 GRT (Not Subject To 46 U.S.C. 8301), Except Those Covered By 46 CFR 15.105(g).

Credentialed engineers are not required by statute. However and regardless of tonnage or inspection status, if, by the nature of a vessel's engineering systems and functionality, an individual is necessarily engaged to perform engineering duties on board a seagoing vessel (subject to STCW, see paragraph B.2.d. of this Chapter), driven by main propulsion machinery of 750kW (1,000 hp) propulsion power or more, then that individual shall hold a valid STCW certificate or endorsement issued in accordance with 46 CFR Part 11 or 12. The failure to ensure that individuals are appropriately certificated in accordance with STCW may result in a violation of 46 CFR 15.1103. The identification of necessary marine engineering tasks, duties, and responsibilities is an important factor for safe vessel operations and a critical component to consider when carrying out manning assessments. The degree of system automation and human interaction/control, and the watchkeeping provisions must also be taken into consideration. Owners/operators are encouraged to coordinate with the cognizant OCMI to ensure that subject vessels are safely manned in accordance with the applicable requirements by appropriately certificated mariners. Additional information concerning manning requirements, assessments, and proposals can be found in Chapter B1.

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The number of credentialed engineers required must be at least one. Although not required by law, typically an individual endorsed as chief engineer or an endorsement authorizing service as chief engineer (e.g., designated duty engineer) should be assigned. [46 CFR 15.820(a)(3)]

4. Inspected Inland Vessels Of Less Than 300 GRT.

The scale may vary, from no requirement to a number adequate for the safe operation of the propulsion plant as determined necessary by the OCMI. Automated engineering systems should meet the criteria of 46 CFR Part 62, Navigation and Vessel Inspection Circulars (NVICs) 1-69, 1-78, or 6-84, and the provisions of Chapter B6 of this Volume.

NOTE: Aboard non-seagoing vessels less than 200 GRT, a credentialed chief engineer is not required. Aboard such vessels, the grade(s) of credentialed engineer(s) required by the OCMI shall be commensurate with the vessel's route, the complexity of the engineering plant, and watch system requirements.

5. On vessels subject to STCW.

On vessels subject to STCW, the individual meeting the requirement of this section must also hold an STCW endorsement as officer in charge of an engineering watch with the appropriate propulsion power for the vessel upon which he or she is operating, except as noted in §15.105(g) of this part for vessels on domestic near-coastal voyages.

6. COI/SMD Manning Format –Engineers.

- a. For vessels of 1600 GRT (3000 GT ITC if GRT is not assigned) or more, the grade of endorsement required for service in the capacity of assistant engineer should be indicated in the manning block of the COI or SMD.

Example:

Chief Engineers:	1
First Assistant Engineers:	1
Second Assistant Engineers:	1
Third Assistant Engineers:	1

- b. For vessels of less than 1600 GRT (3000 GT ITC if GRT is not assigned), only the number of assistant engineers is required to be indicated in the manning block of the COI or SMD. An endorsement as First, Second, or Third Assistant Engineer authorizes service as an assistant engineer where the grade level is not specified.

Example:

Chief Engineers:	1
Licensed Engineers:	3

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- G. Master And Mate (Pilot) Of Towing Vessels (see 46 CFR 15.805(a)(5) and 15.810(d)).
 Title 46 CFR 15.610(a) requires that every towing vessel of at least 8 meters (at least 26 feet) in length, measured from end to end over the deck (excluding sheer), must be under the direction and control of a person holding a license or MMC officer endorsement as master or mate (pilot) of towing vessels or as master or mate of vessels of greater than 200 GRT holding either -
1. An endorsement on his or her license or MMC for towing vessels: or
 2. a completed Towing Officer's Assessment Record (TOAR) signed by a U.S. Coast Guard approved designated examiner indicating that the officer is proficient in the operation of towing vessels.

This requirement does not apply to any vessel engaged in assistance towing. Because STCW has no specific provisions for towing vessels, seafarers should be certificated and duly endorsed in accordance with STCW for the applicable tonnage, propulsion power, and intended route of service. Refer to Chapter B2 for Manning and STCW Certification Reference Tables and 46 CFR 15.610(a).

Towing vessels are subject to various manning requirements depending largely on route, tonnage, service, and inspection status. The Towing Endorsement Table provides context on which towing endorsements or combinations thereof, are required for various operations. Accordingly, the COI or SMD/SML may be annotated with the applicable Towing Endorsement Category(s) [from the column headers in Figure B3-1] to reflect which towing endorsements are acceptable for service as indicated in the Table below. For example, the COI for an inspected, seagoing, towing vessel (>300 GRT) may be annotated as;
 “Towing Endorsement: Master/Mate endorsement authorizing service on vessels of more than 200 GRT (of appropriate route/tonnage) w/TOAR for the route and familiarization OR Master/Mate endorsement authorizing service on vessels of more than 200 GRT(of appropriate route/tonnage) and Master/Mate Towing Vessel of appropriate route/tonnage.”

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Figure B3-1: Towing Endorsement Table

Operations	Towing Endorsement Categories			
	Master/Mate Towing Vessel of appropriate route/tonnage ¹	Master/Mate endorsement authorizing service on vessels of more than 200 GRT (of appropriate route/tonnage) w/TOAR and familiarization ²	Master/Mate endorsement authorizing service on vessels of more than 200 GRT (of appropriate route/tonnage) <u>and</u> Master/Mate Towing Vessel of appropriate route/tonnage	License or MMC authorizing assistance towing
Uninspected, non-seagoing, towing vessel (>200 GRT):	<i>X, or</i>	X	-	-
Uninspected, non-seagoing, towing vessel (≤200 GRT):	<i>X, or</i>	X	-	-
Uninspected, seagoing, towing vessel (<300 GRT):	<i>X, or</i>	X	-	-
Inspected, seagoing, towing vessel (≥300 GRT):	-	<i>X, or</i>	X	-
Other inspected vessel engaged in towing (>200 GRT):	-	<i>X, or</i>	X	-
Other inspected vessel engaged in towing (≤200 GRT):	<i>X, or</i>	X	-	-
Assistance towing vessel	<i>X, or</i>	<i>X, or</i>	<i>X, or</i>	X

SPECIFIC NOTES:

¹Master/mate of towing vessels, limited means an endorsement to operate a towing vessel of less than 200 GRT only within a local area on the Great Lakes, Inland Waters, or Western Rivers designated by the OCMI [46 CFR 11.463(c)].

²For additional information on familiarization, see observation and training requirements in 46 CFR 11.464 and 11.465.

GENERAL NOTES: Includes dual-mode and push-mode ITBs / ATBs.

Push-mode = aggregate tonnage of the combination. STCW may apply depending on route. Seagoing = operating beyond the boundary line, as described in 46 CFR Part 7. For passenger-carrying barges under tow, see Chapter B2 Section D.

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Title 46 U.S.C. 8903 requires an uninspected passenger vessel to be operated by a credentialed individual as prescribed by regulation.

1. Title 46 CFR 15.605(a) requires every self-propelled uninspected passenger vessel defined by 46 U.S.C. 2101(42)(B) to be under the "direction and control" of an individual holding a license or MMC endorsed as operator of uninspected passenger vessels.
2. Title 46 CFR 15.605(b) requires every uninspected passenger vessel of 100 GRT or more, as defined by 46 U.S.C. 2101(42)(A), to be under the "direction and control" of a credentialed master, pilot, or mate as appropriate.

The intent is that the vessel must be under the physical control or direct supervision of an appropriately endorsed individual. 46 U.S.C. 8104(b) provides that licensed individuals (credentialed officers) on oceangoing vessels of not more than 100 GRT "may not be required" to work more than 12 hours in a 24-hour period while at sea. Credentialed operators serving as OUPV may voluntarily work more than 12 hours in a 24-hour period. However, OCMI's should strongly encourage uninspected passenger vessels operating in excess of 12 hours to have at least two credentialed operators assigned to prevent fatigue. It has been suggested by some operators that a qualified seaman could be left at the helm while the credentialed operator sleeps close by. This position is untenable. As noted above, 46 U.S.C. 8903 mandates the vessel be operated by a licensed individual; the Coast Guard does not have the discretion to allow any unlicensed seaman to control the vessel without supervision. (See Chapters B5 and B7 for further discussion regarding working conditions for these vessels.)

I. Pilots.

46 U.S.C. 8502 requires a coastwise seagoing vessel to be under the direction and control of a pilot credentialed by the Coast Guard when underway on U.S. navigable waters. A coastwise seagoing vessel generally means one which is carrying or authorized by its documentation to engage in trade between one U.S. port and another. (See Part A, Chapter 11 for detailed discussion of pilotage requirements.) See 46 CFR 15.812 for further discussion about Pilots.

J. Radar Observers.

Title 46 CFR 15.815 requires that each person in the required complement of deck officers, including the master, on inspected vessels of 300 GRT or over which are radar equipped, shall hold an endorsement as radar observer. Additionally, each person having to hold a license or MMC officer endorsement under 46 U.S.C. 8904(a) for employment or service as master or mate on board an uninspected towing vessel of 8 meters (approximately 26 feet) or more in length must, if the vessel is equipped with radar, hold an endorsement as radar observer. Each person who is required to hold a radar endorsement must have his or her certificate of training readily available to demonstrate that the endorsement is still valid. Readily available means that the documentation must be provided to the Coast Guard, or other appropriate Federal agency, within 48 hours of a request by the Coast Guard or other agency. The documentation

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may be provided by the individual, or his or her company representative, electronically, by facsimile, or physical copy. Under 46 CFR 11.480, a radar observer endorsement is valid for 5 years from the date of issuance of the certificate of training from a course approved by the Coast Guard.

K. Automatic Radar Plotting Aid (ARPA).

Title 46 CFR 15.816 requires that every person in the required complement of deck officers, including the master, on seagoing vessels equipped with automatic radar plotting aids (ARPAs), except those vessels listed in 15.105(f) and (g), must hold an appropriate STCW endorsement valid for vessels equipped with ARPA. If an individual has not received ARPA training, this will be noted on the endorsement as a limitation. A valid MMC without an ARPA limitation is evidence that an officer has completed training in ARPA. See 33 CFR 164.38 for additional requirements pertaining to ARPAs.

L. Radio Officers.

The requirements for various items of radio communications equipment are controlled primarily by the Federal Communications Commission (FCC). Primary attention must be given to radiotelegraph officers and GMDSS operators, who are licensed by the FCC and the Coast Guard (see 46 U.S.C. Chapter 71 and Section 7318); the requirement for such persons shall be noted on the vessel's Certificate of Inspection (COI) or SMD/SML.

NOTE: This is considered only a reinforcement of FCC authority.

On smaller vessels, radiotelephone installations are permitted; as radiotelephone operators are licensed solely by the FCC, their presence is not required on the COI (FCC requirements for equipment and personnel qualifications are contained in Title 47, CFR).

1. General.

The controlling authority for radio operators and installations aboard U.S. vessels is generally a function of the FCC. The operation of transmitters of most vessel stations must be performed by a person holding a commercial radio operator license or permit of the class as specified in 47 CFR Parts 13 and 80, Subpart D. Reference MSM Volume II Section B.1.M for additional information.

2. Global Maritime Distress And Safety System (GMDSS).

46 CFR 15.817 requires that every person in the required complement of deck officers, including the master, on seagoing vessels equipped with a GMDSS, except those vessels listed in 46 CFR 15.105(f) and (g), must provide evidence of a valid STCW endorsement as GMDSS radio operator. For example, if a master and three mates (OICNW) are required then each should be certificated in accordance with STCW IV/2 as GMDSS Radio Operators. This should be reflected on the COI or SMD, as applicable. Similarly, Vessels voluntarily relying on the at-sea maintenance provision of the GMDSS must have

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onboard a licensed GMDSS Radio Maintainer (See 46 CFR 15.818 and 15.1103(e)). Reference MSM Volume II Section E.2.K for additional information.

3. FCC Commercial Radio Operator Licenses (Term of License).

FCC Radiotelegraph Operator License: Effective May 20, 2013, First and Second Class Radiotelegraph Operator's Certificates will be renewed as Radiotelegraph Operator Licenses valid for the lifetime of the holder, and Third Class Radiotelegraph Operator's Certificates will be renewed as Marine Radio Operator Permits valid for the lifetime of the holder.

GMDSS Radio Operator/Maintainer License (DO, DM, DB): Issued for the holder's lifetime. Prior to March 25, 2008 the license term for was five years. Any holder of a DO that expired prior to March 25, 2008, must still file an application to renew the FCC license within the five-year grace period after expiration.

M. Vessel Security Officer.

Refer to 46 CFR 15.1113(a) for the Vessel Security Officer STCW requirements. Reference 33 CFR 104.215 for all other vessels subject to 33 CFR Part 104.

N. Personnel With Designated Security Duties.

Refer to 46 CFR 15.1113(c) for the STCW requirements applicable to personnel with designated security duties on seagoing vessels which are required to comply with the provisions of the ISPS Code. Reference 33 CFR 104.220 for all other vessels subject to 33 CFR Part 104.

O. Security Awareness.

Refer to 46 CFR 15.1113(e) and (f) for the STCW requirements applicable to security awareness training on seagoing vessels which are required to comply with the provisions of the ISPS Code. Reference 33 CFR 104.225 for all other vessels subject to 33 CFR Part 104.

PART B: VESSEL MANNING**CHAPTER 3: MANNING REQUIREMENTS FOR CREDENTIALLED OFFICERS****P. Transportation Worker Identification Credential (TWIC).**

Prior to the Coast Guard Authorization Act of 2010 (“Act”), all mariners required to hold a Merchant Mariner Credential (MMC) were also required to obtain and hold a valid TWIC. Section 809 of the Act, however, permits the Secretary, acting through the Coast Guard, to exempt any mariner who does not require unescorted access to a secure area of a vessel from the requirement to hold a valid TWIC as a precondition of receiving and holding a MMC. Accordingly, the Coast Guard is allowing mariners without a valid TWIC who operate on board vessels that do not have a security plan to acquire and renew a MMC. Specifically, this policy applies to mariners who are inactive or not operating under the authority of their credential, as well as those who serve on vessels that are NOT required to have a vessel security plan. When inspecting subject vessels, the Coast Guard has adjusted its enforcement policies so that a mariner who does not hold a TWIC or holds an expired TWIC, but a current MMC, will not be considered in violation of the applicable regulations. See the Annex for TWIC sample.

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A. Introduction.

Part B, Chapters 1-7 (legacy Chapters 20-26), has been structured to interlink various elements affecting the safe manning and watchkeeping on U.S. vessels and should be referenced comprehensively. Refer to paragraph B1.A for a summary of all Chapters. There are no statutes that mandate specific numbers of ratings on a U.S. merchant vessel. However, the minimum safe manning levels established by the OCMI must appropriately account for the operational requirements of the vessels and the impact of laws, and international treaties, which may imply or indirectly require the assignment of unlicensed seamen to the crew. Refer to Chapter B3 for a more detailed discussion on the impact of international standards, security requirements, and TWIC.

B. Impact Of International Standards.

Both STCW and SOLAS, in combination, serve to impose particular requirements for unlicensed seamen.

1. STCW Requirements.

U.S. regulations (46 CFR Parts 10, 11, 12 and 15) parallel the provisions in STCW regarding the qualification and training requirements for watchstanding personnel. Through various amendments, STCW prescribes minimum standards relating to training, certification and watchkeeping for seafarers, which Parties are obliged to meet or exceed (See Chapter B5 for a more detailed discussion of watchkeeping requirements.). Except for certain vessels engaged exclusively in domestic service, STCW certification requirements may apply to deckhands (<100 GRT). For voyages subject to STCW certain provisions will apply based on GT ITC and others regardless of tonnage, in effect triggering certain MMC requirements. See Chapter B3 for voyages to Canada and the impact of ITC.

NOTE: 2010 STCW Amendments, Transitional Provisions.

The 2010 STCW Amendments came into force on 1 January 2012, including the new requirements for minimum rest hours and record of hours of work. In many cases, there is a five-year transitional period, until 1 January 2017, to allow for a phased in implementation of the provisions. However, in some cases (e.g. security endorsements) implementation is sooner. Attention must be paid to these entry into force dates to ensure appropriate compliance. Nevertheless, after 1 January 2017, all mariners serving on vessels subject to STCW must meet the STCW Convention standards, including the 2010 Amendments. The International Maritime Organization (IMO) issued Circulars STCW.7/Circ.16 and STCW.7/Circ.17 which provide clarification of the transitional provisions and advice (for Port State Control Officers) on the transitional arrangements leading up to full implementation of the 2010 Amendments to the STCW Convention and Code on 1 January, 2017.

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- (1) Each person serving as an able seafarer-deck, or a rating forming part of a navigational watch (RFPNW) on a seagoing vessel of 500 GT ITC or more must hold an STCW endorsement certifying him or her as qualified to perform the navigational function at the support level, in accordance with the STCW Convention.
- (2) Each person serving as a RFPNW on a seagoing vessel of 500 GT ITC or more, subject to the STCW Convention, must hold a STCW endorsement attesting to his or her qualifications to perform the navigational function at the support level (II/4).

NOTE: RFPNW may automatically appear as ROANW on the COI, these terms are synonymous.

- (3) It is feasible that an ordinary seaman, qualified as a RFPNW and duly certificated in accordance with STCW II/4, could substitute for an Able Seaman in certain shipboard situations. Aside from Able Seamen, who hold RFPNW II/4, all other unlicensed seamen in the deck department assigned to navigational watchkeeping duties, including specially trained ordinary seamen, must be certificated in accordance with STCW Regulation II/4. Because 46 U.S.C. 8702(b) requires that only 65 and 50% , respectively, of the deck crew (excluding credentialed officers) be Able Seamen, the remaining 35 and 50% are not required to hold STCW Able Seafarer-Deck II-5). Pursuant to a request from a vessel owner/operator, OCMIs, at their discretion and as appropriate, can issue a Certificate of Inspection (COI) or Safe Manning Document (SMD) endorsed to permit the substitution of ordinary seamen, qualified and certificated in accordance with STCW II/4, for Able Seamen in accordance with 46 U.S.C. 8702(b). In any case, the COI or SMD will not be endorsed to allow fewer Able Seaman than permitted by 46 U.S.C. 8702(b).

Sample Endorsement:

UP TO TWO ORDINARY SEAMEN WITH A STCW CERTIFICATE ENDORSED FOR REGULATION II/4 'RATING FORMING PART OF A NAVIGATION WATCH' MAY BE SUBSTITUTED FOR TWO ABLE SEAMEN WITHOUT FURTHER ENDORSEMENT AS ABLE SEAFARER-DECK II/5.

Title 46 CFR 15.1103(b) states that onboard a seagoing vessel of 500 GT ITC or more, no person may employ or engage any person to serve, and no person may serve, as an able seafarer-deck, except for training, unless the person serving holds an appropriate, valid STCW endorsement (STCW II/5) issued in accordance with 46 CFR Part 12.

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- (1) Each person serving as an able seafarer-engine, or a rating forming part of an engineering watch (RFPEW), on a seagoing vessel driven by main propulsion machinery of 1,000 hp/750 kW propulsion power or more, must hold an STCW endorsement certifying him or her as qualified to perform the marine-engineering function at the support level, in accordance with the STCW Convention.
- (2) Each person serving as a rating forming part of an engineering watch (RFPEW) in a manned engine-room or designated to perform duties in a periodically unmanned engine-room, on a seagoing vessel driven by main propulsion machinery of 1,000 hp/750 kW propulsion power or more, must hold an STCW endorsement certifying him or her as qualified to perform the marine-engineering function at the support level, in accordance with the STCW Convention (III/4).
- (3) Title 46 CFR 15.1103(e) states that, as of January 1, 2017, onboard a seagoing vessel driven by main propulsion machinery of 1,000 HP/750 kW propulsion power or more, no person may employ or engage any person to serve, and no person may serve, as an able seafarer-engine, except for training, unless the person serving holds an appropriate, valid STCW endorsement (STCW III/5) issued in accordance with 46 CFR Part 12.
- (4) Electro-Technical Rating (ETR). Although the Coast Guard has amended the regulations to facilitate the issuance of ETR endorsements in accordance with STCW Regulations III/7, there is no corresponding regulation to require an ETR under the provisions of safe manning. However, should the COI or SMD stipulate a specific carriage requirement, or should a vessel voluntarily carry a ETR, the persons serving in that capacity should be duly endorsed.
- (5) As provided in 46 CFR 15.105(g), personnel serving on certain small vessels engaged exclusively on domestic, near-coastal voyages are in compliance with 46 CFR Subpart K of Part 15 and are, therefore, not subject to further requirements for the purposes of the STCW Convention [See Chapter B3, Section B.2.d.(1)]. Accordingly, STCW endorsements are not required for engine department ratings engaged on subject vessels, regardless of propulsion power (See NVIC 7-00).

c. Additional Requirements.

- (1) Basic Training (46 CFR 15.1105). Onboard a seagoing vessel, no person may assign a shipboard duty or responsibility to any person who is serving in a position that must be filled as part of the required crew complement or who is assigned a responsibility on the muster list, and no person may perform any such duty or responsibility, unless the person performing it can produce evidence of having:
 - (a) Received appropriate approved basic training or instruction as set out in the standards of competence under STCW Regulation VI/1, with respect to

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personal survival techniques, fire prevention and fire-fighting, elementary first aid, and personal safety and social responsibilities; and

- (b) Maintained the standard of competence under STCW Regulation VI/1, with respect to personal survival techniques, fire prevention and fire-fighting, elementary first aid, and personal safety and social responsibilities, every 5 years.
- (2) **Lifeboatmen** (46 CFR 15.404(e) and (g)). Every person assigned duties as a lifeboatman must hold a credential attesting to such proficiency. Persons serving on vessels subject to the STCW Convention must also hold an STCW endorsement (VI/2) in proficiency in survival craft and rescue boats other than fast rescue boats (PSC) except, or in proficiency in fast rescue boats.
- (3) **Tankerman**. See 46 CFR 15.860.
- (4) **Passenger Vessels On International Voyages**. In accordance with 46 CFR 15.1103(d), onboard a passenger ship, as defined by the Convention for the Safety of Life at Sea, 1974, as amended (SOLAS), on an international voyage, any person serving as master, chief mate, mate, chief engineer, engineer officer, or any person holding a license, MMD, or MMC and performing duties relating to safety, cargo handling, or care for passengers, must meet the appropriate requirements of Regulation V/2 of the STCW Convention. These individuals must hold documentary evidence to show they meet these requirements. 46 CFR 11.1105 and 12.095 set out similar requirements.
- (5) **Medical Certificates**. After 1 January 2017, all persons employed or engaged onboard vessels to which STCW applies must hold a medical certificate valid for 2 years unless the mariner is under the age of 18, in which case the maximum period of validity is 1 year (46 CFR 15.401(c)/15.1103(h)). If a mariner's medical certificate expires during a voyage, it will remain valid until the next United States port of call, provided that the period after expiration does not exceed 90 days (46 CFR 15.1103(h)(3)). See page ANNEX-11 for additional information and transitional provisions.
- (6) **Other Crewmembers**. Crewmembers not specifically required by STCW to be certificated by the Administration (e.g. Steward's Department), must still comply with Basic Training (46 CFR 15.1105) [see Section B.1.c.(1) of this Chapter], as well as certain security requirements [see Chapter B3]. Initial Basic Training is accomplished ashore through Coast Guard approved courses. After the 2017 implementation, continued compliance with Basic Training may be demonstrated through a combination of onboard training/experience and shore based assessment (see 46 CFR 11.302 and 12.602). A MMC may be endorsed for Basic Training (46 CFR 10.109(d)(13)). This is in addition to a valid MMC (for vessels of 100 GRT or more) with entry level endorsements (i.e. Wiper/Ordinary Seaman

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(OS)/Stewards Department-Food Handler (FH)[if applicable], medical certificate [see Section B.1.c.(5) of this Chapter], and TWIC (if applicable, see Chapter B3 Paragraph P.). See Section B.1 of this Chapter for vessels <100 GRT.

NOTE: All entry level MMC endorsements are annotated as "Domestic Only" as there is no corresponding international endorsement or rating. Absent a specific STCW requirement for certification by the Administration, these entry level MMC endorsements are suitable for service as described in this Section.

2. SOLAS Requirements.

SOLAS Chapter V, Regulation 14 requires each vessel to which Chapter I of SOLAS applies to be "sufficiently and efficiently" manned as evidenced by a Safe Manning Document (SMD) issued by the flag-state. Refer to Chapter B3 for a more detailed discussion on the impact of international standards and SMD provisions.

a. Principles Of Safe Manning.

In establishing the safe manning level to assure a vessel is sufficiently and efficiently manned, SOLAS makes reference to IMO Resolution A.1047(27) that establishes the principles of safe manning and prescribes the form and content of the safe manning document.

b. Resolution A.1047(27).

Resolution A.1047(27) acknowledges that watchstanders should normally be divided into three watches; and that lookout and helmsman duties are separate. Where an engineering watch is assigned, it recommends that an officer and at least one unlicensed rating be assigned, unless there is a watch monitoring system (e.g., "dead man alarm") installed on the bridge. For additional information on the Principles of Safe Manning, reference Chapter B3, paragraph B.5. Refer to Chapters B2 [Manning and STCW Certification Reference Tables (Seagoing Vessels)], B5, and B7 for additional discussion on vessels permitted to maintain a two-watch system.

C. Statutes Affecting Ratings.

U.S. statutes affecting ratings are consistent with international requirements. A number of statutory provisions affect working conditions and watchkeeping requirements for ratings. Chapter B5 of this Volume provides more detailed discussion of working provisions.

1. Merchant Mariner Credential/Document Requirement.

Under 46 CFR 15.403, every person below the grades of officer and staff officer employed on any U.S. flag merchant vessel of 100 GRT or more, except those navigating rivers exclusively and the smaller inland lakes, must possess a valid merchant mariner credential (MMC) or merchant mariner's document (MMD) with all appropriate endorsements for the positions served. For technical or industrial positions for which the Coast Guard does

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not require a particular credential, the seaman must possess an MMD endorsed for entry ratings. Certain vessels are exempted from some of the requirements by 46 U.S.C. 8701. Refer to the statute for specific exemption limitations applicable to most fishing industry vessels, barges, yachts, sailing school vessels, oceanographic research vessels, and mobile offshore drilling units (MODU). For additional information on TWIC, see Chapter B3 paragraph P.

2. Crew Complement.

Although there are no statutes that mandate specific numbers of ratings on a U.S. merchant vessel, the minimum safe manning levels established by the OCMI must appropriately account for the operational requirements of the vessels and the impact of laws, and international treaties, which may imply or indirectly require the assignment of unlicensed seamen to the crew. On oceangoing vessels, the number of unlicensed personnel carried must be sufficient for the watch provisions of 46 U.S.C. 8104 and 46 CFR 15.705. 46 U.S.C. 8702 requires at least 75 percent of the crew in each department to be able to understand orders spoken by the officers. Additionally, 65 percent of the unlicensed deck crew must hold MMCs endorsed as able seaman; except vessels authorized to employ a 2-watch system may reduce the percentage to 50 percent.

3. Citizenship Requirements.

Although a foreign national, e.g., an alien lawfully admitted to the United States for permanent residence, may obtain a MMC, 46 U.S.C. 8103 imposes specific citizenship requirements for U.S. vessels that may significantly limit the number of aliens that may be employed on such vessels. Specifically, Section 8103(b) states that each unlicensed seaman must be a citizen of the United States or an alien lawfully admitted to the United States for permanent residence, and not more than 25 per cent of the total number of unlicensed seamen on the vessel may be permanent resident aliens. (See Chapter B1 for a more detailed discussion of the citizenship requirements.)

4. Seagoing And Great Lakes Merchant Vessels Of More Than 100 GRT.

Section 8104(d) provides that the unlicensed sailors, firemen, watertenders, oilers, and coal passers (e.g., wipers) on seagoing and Great Lakes vessels of more than 100 GRT must be divided into at least three watches. Section 8104(g) modifies this requirement in that it allows a 2-watch system to be employed for the credentialed officers and crewmembers in the deck department on towing vessels, OSVs, and barges engaged on voyages of less than 600 nautical miles. Engineroom ratings (i.e. Oilers) are not subject to the two watch provisions of 46 U.S.C. 8104(g).

5. Uninspected Towing Vessels.

46 U.S.C. 8104(h) provides that on a vessel to which Section 8904 applies, an individual licensed (credentialed) to operate a towing vessel may not work more than 12 hours in a consecutive 24-hour period except in an emergency. Sections 8104(a), (c), (d), (e), and (g) establish watchkeeping, workhour, and rest period rules for crews on seagoing and Great Lakes towing vessels. A towing vessel's unlicensed crew is not restricted by any of these

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laws from voluntarily working beyond 8 hours. Unlicensed seamen on inland towing vessels, other than the Great Lakes, that are on voyages of 600 miles or more, have no specified workhour limit or watch schedule provided by statute. However, if the voyage is less than 600 miles, then 46 U.S.C. 8104(g) applies. Regardless of the route of the vessel, or work rules agreed to by crewmembers individually or through collective bargaining, the owner and master are required to provide an adequate and fit watch as discussed in 46 CFR 15.610 and 15.705. Consequently, if the credentialed officers or ratings have no relief and are too fatigued to stand an alert watch, a hazardous condition is created and the owner and/or master should not permit the vessel to continue to operate until the situation is remedied. (See Chapters B5 and B7 for further discussions.)

6. Fish Processing Vessels And Fish Tender Vessels.

46 U.S.C. Sections 8104(k), (l), (m), and (o) provide watchstanding requirements for the licensed individuals (credentialed officers) and deck crew on board these types of commercial fishing vessels.

7. Tankers.

Section 8104(n) limits a credentialed individual from working more than 15 hours in any 24-hour period. In effect, Section 8104(n) imposes an average work limit of 12 hours in a 24-hour period for credentialed individuals on tankers. Many tankers employ unlicensed personnel to assist in cargo handling responsibilities. These individuals should be included as part of the required manning on the COI if such crewmembers are required for safe cargo operations or are necessary to meet the workhour limits.

D. Deck Department Manning.

The deck department for a seagoing vessel of at least 100 GRT typically consists of able seamen and ordinary seamen. Inland vessels typically employ "deckhands" for similar functions.

1. Able Seamen And Ordinary Seamen.

Unless specifically provided otherwise, the deck department on a seagoing vessel would normally consist of six able seamen and three ordinary seamen to meet operational requirements including watchstanding, cargo handling and vessel maintenance. The three ordinary seamen may be eliminated from the required crew if the OCMI is satisfied with the installed crew watch call system, the messing and sanitary facilities provided in proximity to the navigation bridge, as well as the suitability of labor-saving deck equipment and mooring arrangements. Unrestricted ocean voyages continue to require at least six able seamen (or four able seamen and two specially trained ordinary seamen) in the crew complement to assure adequate watchkeeping. Reference Section B.1.a.(3) of this Chapter for additional information concerning the substitution of able seamen with specially trained ordinary seamen on voyages subject to STCW. The OCMI may consider allowing specially trained ordinary seamen (OS) meeting the requirements of NVIC 3-83 as substitutes for up to 35 percent of the required ABs on domestic voyages.

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a. Scale Of Employment.

Able seamen are rated as: unlimited, limited, special, offshore supply vessel, sail, and fishing industry, under the provisions of 46 CFR Part 12. Title 46 U.S.C. 7312 specifies the categories of able seamen (i.e., unlimited, limited, etc.) necessary to meet the requirements of 46 U.S.C. 8702.

- (1) Individuals qualified as able seamen—unlimited may constitute all of the able seamen required on a vessel.
- (2) Individuals qualified as able seamen—limited may constitute all of the able seamen required on a vessel of less than 1,600 GRT or on a vessel operating on the Great Lakes and the Saint Lawrence River as far east as Sept Iles. Individuals qualified as able seamen—limited may constitute not more than 50 percent of the number of able seamen required on board other vessels.
- (3) Individuals qualified as able seamen—special may constitute—
 - (a) all of the able seamen required on a vessel of not more than 500 GRT or on a seagoing barge or towing vessel; and
 - (b) not more than 50 percent of the number of able seamen required on board other vessels.
- (4) Individuals qualified as able seamen—offshore supply vessel may constitute all of the able seamen required on board a vessel of less than 500 GRT or 6,000 GT ITC engaged in support of exploration, exploitation, or production of offshore mineral or energy resources. Individuals qualified as able seamen—limited may constitute all of the able seamen required on board a vessel of at least 500 GRT or 6,000 GT ITC engaged in support of exploration, exploitation, or production of offshore mineral or energy resources.
- (5) When the service of able seamen—limited or able seamen—special is authorized for only a part of the required number of able seamen on board a vessel, the combined percentage of those individuals so qualified may not be greater than 50 percent of the required number.
- (6) Individuals qualified as able seamen—fishing industry may constitute—
 - (a) all of the able seamen required on a fish processing vessel entered into service before January 1, 1988, and of more than 1,600 GRT but not more than 5,000 GRT; and

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- (b) all of the able seamen required on a fish processing vessel entered into service after December 31, 1987, and having more than 16 individuals on board primarily employed in the preparation of fish or fish products but of not more than 5,000 GRT.

2. Deckhands.

The number of deckhands assigned to inspected vessels shall normally be determined on the basis of operational requirements. (See Chapter B2 for a detailed discussion of the factors influencing the number of deckhands on small passenger vessels.) The minimum number of deckhands employed on an uninspected vessel should be based on the operational requirements of the vessel, taking into account any watchstanding requirements for such crewmembers. See B4.B.1. for additional discussion on the impact of international conventions on certain vessels employing deckhands.

E. Engineering Department Manning.

The engineering complement on a vessel is dependent on a number of factors (e.g., type of propulsion system, number of separate machinery spaces requiring monitoring of equipment, level of machinery automation, and maintenance requirements).

1. Motor Vessels.

Non-automated vessels powered by diesel, gasoline, or gas turbine engines would typically employ three to six oilers as qualified watchstanders depending on the complexity and arrangement of the machinery spaces.

2. Steam Vessels.

Non-automated steam vessels would typically assign at least one fireman/watertender on watch for each machinery space containing a boiler. In addition, an oiler and wiper would typically be assigned to each engine room watch depending on the complexity and arrangement of the machinery spaces.

3. Electric Propulsion.

An OCMI should consider the need for the assignment of a sufficient number of electricians for watchstanding or maintenance as part of the required manning for vessels that employ electric propulsion. This manning requirement should be in addition to the manning required for safe operation of the prime mover for generating electric propulsion power.

4. Automated Machinery.

Engineering manning levels on an automated vessel will be based on an assessment of the automation system installed as detailed in 46 CFR Part 62 and NVICs 1-69, 7-73, 1-78 as amended, and 6-84. The engineering ratings may be completely eliminated depending on the capability and sophistication of the automation system. (Consult Chapter B6 for detailed information concerning requests for manning reductions and operations on such vessels.)

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5. Qualified Member Of The Engine Department (QMED).

Under 46 CFR 15.404, the holder of an MMD or MMC endorsed with one or more QMED ratings may serve in any unqualified rating in the engine department without obtaining an additional endorsement. A QMED may serve as a qualified rating in the engine department only in the specific ratings endorsed on his or her MMD or MMC. Persons serving on vessels subject to the STCW Convention must also hold an STCW endorsement as able seafarer-engine (See also STCW III/5).

6. Other QMED Ratings.

The ratings of "deck engine mechanic," "engineman," or "junior engineer" are not normally required on the COI. The minimum manning requirements are prescribed by the OCMI in accordance with 46 CFR 15.801. However, if the owner, operator, or master of a vessel requests that the vessel's complement include a deck engine mechanic or engineman, the COI will carry the requirement for "oilers" and a notation that "junior engineers, deck engine mechanics, or enginemen may be substituted for one or more oilers."

NOTE: Employment of these ratings as substitutes for oilers does not remove them from the watchstanding provisions of 46 U.S.C. 8104 and 46 CFR 15.705.

F. Maintenance-Persons And Maintenance Departments.

1. Authority Citations.

46 U.S.C. 8101 and 8104, and 46 CFR 15.705.

2. Background.

OCMI authority for approving requests for changes in the required crew composition is contained in 46 CFR 15.501 and 15.505. This section states that the COI issued to an inspected vessel specifies the minimum complement of licensed/credentialed individuals and crew considered necessary for the safe operation of the vessel. Among the factors to be considered by the OCMI in determining the minimum crew complement are: installed equipment, degree of automation, use of labor saving devices, and the organizational structure of the vessel. The establishment of a maintenance department and maintenance persons and the ability to delegate crewmembers to different areas, may provide the vessel's master the flexibility to use the crew more effectively while still ensuring that sufficient qualified personnel are carried for continued safe operation of a vessel. When permitted by the Certificate of Inspection, some of the individuals in a vessel's required crew complement may be engaged as maintenance-persons and assigned as deck maintenance-persons or engine maintenance-persons in their respective departments. These individuals would perform maintenance duties within the deck or engine department boundaries and are subject to the crossover prohibition of 46 U.S.C. 8104(e). If the vessel establishes an acceptable maintenance department, the mandated maintenance-persons will be assigned to the maintenance department and are then available as a vessel's maintenance crew who are not subject to the crossover prohibition in 46 U.S.C. 8104(e).

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The required maintenance-persons shall hold appropriate qualified ratings (AB, QMED, etc.) so that they may be used by the vessel's master to augment navigational or machinery space watches should statutory or regulatory requirements come into effect or situation. For those maintenance-persons not assigned to the maintenance department, watch assignments would be governed by departmental affiliation, except under circumstances noted in 46 U.S.C. 8104(f). For maintenance-persons assigned to the maintenance department, watch augmentation will be based on individual qualifications. For example, an individual who holds both deck and engine qualifying ratings working in the maintenance department may be assigned to deck or engine watches at the discretion of the master. During periods in which these maintenance-persons are used to augment navigational or machinery space watches, they become part of the watch and are subject to requirements of 46 CFR 15.705. Engagement of maintenance-persons with the intention of assigning any individual alternately between deck and engineering watch sections on a routine basis is considered a violation of 46 U.S.C. 8104(e). (Consult Chapter B1 for additional information concerning Maintenance Departments.)

3. Manning Requirements For Vessels Engaged On International Voyages.

For vessels subject to STCW, personnel required to augment navigational or machinery space watches should hold the appropriate qualified ratings endorsements as required in 46 CFR 15.1103.

4. Acceptance Of Crew Composition Adjustments.

If a vessel owner or operator requests the certificating OCMI to make crew composition adjustments to allow flexibility in the assignment of watchstanding personnel with the carriage of maintenance-persons, the OCMI should consider the following factors in determining the acceptability of the proposed adjustments:

a. Maintenance Plan.

Implement an acceptable maintenance plan. The OCMI should review the vessel's plan bearing in mind the proposed crew's ability to perform all duties within reasonable or required workhour limits.

b. Maintenance Department.

Implementation of a maintenance department on board the vessel; as appropriate.

c. Vessel's Equipment.

Nature and reliability of vessel equipment, labor saving devices, alarm systems, and automated systems, including autopilot steering capability. (See Chapter B6; 46 CFR 15.715; and 46 CFR 62.)

d. Vessel's Design.

Vessel arrangement, including visibility from the pilothouse and steering position; (for permitting one AB bridge watch).

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- e. Call Systems.
Bridge and engine room call systems and whether they include the quarters of maintenance-persons who may be required to augment watches.
 - f. Station Bill.
Inclusion of the term maintenance-person on the vessel's station bill and muster lists.
 - g. Master's Responsibilities.
Existence of a vessel operations manual or similar company directives that describe in detail the master's responsibilities regarding the establishment of adequate watches and discretion to utilize appropriately qualified personnel when circumstances require watch augmentation; conditions under which the watch(es) will be augmented including emphasis on keeping a proper lookout; and, the principles contained in the following as they relate to duties, responsibilities, and composition of watches: 46 CFR 15.705 and 46 U.S.C. 8104 (Watches), 46 U.S.C. 8702(d) (AB at the helm), SOLAS Chapter V, Regulation 19 (Automatic pilot), 46 CFR 15.850 and Rule 5 of the Navigation Rules (Lookout) and Subchapter P of Title 33, Code of Federal Regulations (Ports and Waterways Safety).
 - h. Qualifications Of Personnel.
Qualifications of the maintenance-persons for proper performance of their duties, including watchstanding. Any request for a reduction in the number of crewmembers based either on automation or the installation of labor saving devices should be approved by Commandant (CG-CVC). (Consult Chapter B6 for detailed information concerning procedures on requests for manning reductions.)
5. COI Sample Endorsements.
- a. Deck And Engine Maintenance-Person Endorsements.
If the OCMI is satisfied that adjustments can be made in the required crew composition by the inclusion of deck and/or engine maintenance-persons, the following is representative of the entry to be placed on the vessel's COI:
 - 3 Able Seamen
 - *3 Deck Maintenance-persons
 - **3 Engine Maintenance-persons
 - * Deck maintenance-persons must hold Able Seaman endorsements.
 - ** Engine maintenance-persons must hold QMED endorsement as junior engineer, deck engine mechanic, oiler or engineman.

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If the OCMI is satisfied that adjustments can be made in the required crew composition by the inclusion of maintenance-persons who are assigned to an approved maintenance department, the following is representative of the entry to be placed on an automated vessel's COI where the vessel has been found suitable for minimally attended or periodically unattended machinery operation, and equipped with deck labor-saving devices:

3 Able Seamen

*6 Maintenance-persons

THE ABOVE MANNING IS CONTINGENT UPON THE UTILIZATION OF A MAINTENANCE DEPARTMENT AS INDICATED IN THE VESSEL'S OPERATING MANUAL. ANY SUBSTANTIAL CHANGE IN THE OPERATION OF THIS DEPARTMENT MUST, PRIOR TO IMPLEMENTATION, BE REPORTED TO THE OCMI WHO ISSUED THE VESSEL'S CERTIFICATE OF INSPECTION.

*AT LEAST THREE OF THE REQUIRED MAINTENANCE-PERSONS MUST HOLD ENDORSEMENTS AS ABLE SEAMEN, EXCEPT THAT UP TO TWO OF THESE MAY BE QUALIFIED AS SPECIALLY TRAINED ORDINARY SEAMEN IN LIEU OF HOLDING ABLE SEAMAN ENDORSEMENTS. THREE MAINTENANCE-PERSONS MUST EACH HOLD A QMED ENDORSEMENT AS JUNIOR ENGINEER, DECK ENGINE MECHANIC, OILER, OR ENGINEMAN

The above endorsements would be affixed in addition to any automation endorsement specified by Chapter B6 of this Volume.

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A. Watchstanding Requirements On U.S. Vessels.

Part B, Chapters 1-7 (legacy Chapters 20-26), has been structured to interlink various elements affecting the safe manning and watchkeeping on U.S. vessels and should be referenced comprehensively. Refer to paragraph B1.A for a summary of all Chapters. This Chapter outlines various watchstanding requirements and shipboard working conditions relevant to U.S. vessels.

1. Authority Citations.

46 U.S.C. 8104 and 8702, 46 CFR 15.1111 and 46 CFR 15.705.

2. Definitions.

The following definitions are consistent with previous Coast Guard policies or regulations.

- a. *Emergency* is an unforeseen development that imposes an immediate hazard to the safety of the vessel, the passengers, the crew, the cargo, property, or the marine environment, requiring urgent action to remove or mitigate the hazard.
- b. *Overriding operational conditions* are circumstances in which essential shipboard work cannot be delayed due to safety, security or environmental reasons, or could not have reasonably been anticipated at the commencement of the voyage.
- c. *Rest* means a period of time during which the person concerned is off duty, is not performing work, including administrative tasks such as chart corrections or preparation of port entry documents, and is allowed to sleep without being interrupted.
- d. *Travel time* to a vessel is considered to be neutral time as it is normally not considered to be “rest,” “off-duty,” or “work” time, but all relevant circumstances should be considered in evaluating whether a mariner complies with the applicable “rest” required by STCW or “off-duty” requirements specified in 46 U.S.C. §8104(a).
- e. *Watch* is activity related to the direct performance of vessel operations, whether deck or engine, where such operations would routinely be controlled and performed in a schedule and fixed rotation. The performance of maintenance or work necessary to the vessel’s safe operation on a daily basis does not in itself constitute the establishment of a watch. However, the latter does count toward the hours of work that can be required by an employer.
- f. *Work* is any activity that is performed on behalf of a vessel, its crew, its cargo, or the vessel’s owner or operator. This includes, but is not limited to, standing watches, performing maintenance on the vessel or its appliances, unloading cargo, or performing administrative tasks, whether underway or at the dock.

The definitions above for “overriding operational conditions” and “rest” are used in situations where STCW applies.

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The master is responsible for ensuring that adequate watches are established for the both at-sea and in-port operations that necessitate watchkeeping personnel, including those whose duties involve designated safety, security and prevention of pollution functions. In exercising this responsibility, the master must take into account applicable statutory and regulatory provisions and international conventions. In addition, the circumstances affecting the safety of the vessel, its crew, its cargo, its passengers, and operational requirements, especially as they relate to pollution prevention must also be considered. In accordance with 46 CFR 15.1109, each master of a vessel that operates beyond the Boundary Line, except those serving on the vessels listed in 15.105(f) or (g), shall ensure observance of the principles concerning watchkeeping set out in STCW Regulation VIII/2 and section A-VIII/2 of the STCW Code. See Section B of this Chapter for discussion on In-Port Watches Of Credentialed Engineers and Section E.1.d of this Chapter for additional discussion on vessels in Lay-up/Shipyard/Drydock (with application beyond STCW).

4. Watchstanding Categories.

A normal watch cycle will include those crewmembers who have functions, duties or responsibilities about vessel operations that are routinely controlled or performed in a scheduled and fixed rotation. Typically, these functions, duties and responsibilities will include the following:

a. Officer In Charge Of A Navigational Watch (Master Or Mate).

Except on vessels of limited size the provision of qualified deck officers should be such that it is not necessary for the master to keep regular watches. This principle is accepted internationally and is expressed in International Maritime Organization Resolution A.1047(27), "Principles of Safe Manning."

b. Helmsman (Able Seaman Or Specially Trained Ordinary Seaman, RFPNW).

The required minimum manning level must include sufficient personnel who may be assigned to the navigation watches to steer the vessel. The helmsman should be separate from the look-out, except on small vessels where the helmsman may safely perform both functions. Unless assigned duty as lookout, the helmsman may be assigned to other duties when not required to be physically present at the helm (e.g., when vessel is on auto pilot). On a merchant vessel of 100 GRT or more (with limited exceptions under 46 U.S.C. 8702) an individual with a rating of less than able seaman may not be at the wheel "in ports, harbors, and other waters subject to congested vessel traffic, or under conditions of reduced visibility, adverse weather, or other hazardous circumstances."

c. Look-out (Able Seaman Or Specially Trained Ordinary Seaman, RFPNW).

It is expected that a dedicated look-out should normally be assigned to each navigational watch to satisfy Rule 5 of the International Regulations for Preventing Collisions at Sea, 1972 and of the Inland Navigation Rules. Rule 5 requires that "Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and the risk of collision." Look-out duties may be performed by the helmsman or the officer in charge of the navigational watch under some circumstances, to the extent that Rule 5 will not be

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violated. Section A-VIII/2 Part 4-1 of the STCW Code indicates the requirements for individuals serving as look-outs.

d. Officer In Charge Of An Engineering Watch (Chief Engineer, Assistant Engineer, Or Designated Duty Engineer).

Depending on the level of automation, credentialed engineers would either be assigned to direct watchkeeping assignments within the machinery spaces on a rotating basis or, in the most sophisticated vessels, would be assigned monitoring duties without being obliged to maintain a “live watch” in the machinery spaces. Under such circumstances, the automation system performs a significant amount of the watchstanding functions. The required engineers would be assigned overnight duty to respond to alarms that may occur and potentially make intermittent rounds of the machinery spaces. It is noteworthy that IMO Assembly Resolution A.1047(27) also suggests that the chief engineer would not normally be a watchstander.

e. Qualified Member Of The Engine Department (QMED, RFPEW).

QMEDs (e.g., oiler, watertender, fireman) would be assigned in a manner similar to the licensed engineers. Non-automated vessels would frequently require QMEDs and non-rated members of the engine department assigned to successive watches. However, QMEDs may be assigned to an alternate work schedule (e.g., day-work) when not required for watchstanding duties in the machinery spaces. Where an engineering watch is assigned, IMO resolution A.1047(27) recommends an engineering officer and engine department rating be assigned, unless the engineering watch officer's status can be monitored from the bridge and assistance immediately dispatched.

f. GMDSS Radio Operator/Radio Officer.

As discussed in 46 CFR 15.817 every person in the required complement of deck officers, including the master, on seagoing vessels equipped with a GMDSS, except those vessels listed in 46 CFR 15.105(f) and (g), must provide evidence of a valid STCW endorsement as GMDSS radio operator. One of the operators must be designated by the vessel's master as assigned to communicate during a distress situation. Vessels voluntarily relying on the at-sea maintenance provision of the GMDSS must have onboard a licensed GMDSS Radio Maintainer. Vessels without GMDSS will still require radio officers as determined by the FCC.

5. Watchkeeping Arrangements.

Current U.S. statutes impose specific watchkeeping requirements on U.S. vessels (46 U.S.C. 8104). Specific provisions for vessels navigating under way and requirements for vessels at anchor can be found in 33 CFR 164.11, 164.13, and 164.19; as applicable. Additionally, STCW Regulation VIII/2 details watchkeeping arrangements and principles to be observed.

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- a. Seagoing And Great Lakes Merchant Vessels Of More Than 100 GRT.
Except for certain fishing industry vessels and yachts, 46 U.S.C. 8104(d) requires merchant vessels of more than 100 GRT, when at sea, to be manned with a three-watch system, and mariners shall be kept on duty successively to perform ordinary work incident to the operation and management of the vessel (See 46 U.S.C. 8104(d) for specific exceptions). This section of the law also states that a mariner cannot be required to work for more than 8 hours in one day. There are certain exceptions to the work-hour limitations relevant to the docking/undocking, conducting emergency drills, actual emergency situations or overriding operational conditions that compromise the safety of the vessel and its passengers and crew in which a mariner can be required to work more than 8 hours in a day (see 46 U.S.C. 8104(f)). Mariners subject to 46 U.S.C. 8104(d) can consent to work in excess of 8 hours in a day, provided there are no violations of the hours of rest provisions. Generally, the three-watch system such as 4-on/8-off provides an optimal approach although non-conformances in the hours of rest can be triggered by periods of additional work if they are not properly planned and managed.
- b. Two-Watch System.
On a towing vessel, an offshore supply vessel, or a barge to which 46 U.S.C. 8104(g) applies, which are engaged on a voyage of less than 600 miles, the credentialed officers and crewmembers (except the coal passers, firemen, oilers, and water tenders) may be divided, when at sea, into at least two-watches.

While it is beyond the scope of this guidance to generally categorize every aspect of the term “voyage;” historically, a voyage of less than 600 miles has been construed as meaning the entire distance traversed in proceeding from the initial port of destination, stops at intermediate ports while enroute not being considered as breaking the continuity of the voyage (see 54 FR 125-01, 129 [January 4, 1989]). A port does not include an Outer Continental Shelf (OCS) facility as defined in 33 CFR part 140. In examining the particulars of a contemplated voyage, due consideration should be afforded to the applicable elements of the voyage plan, charter agreement, company orders, and surrounding circumstances to include the loading, discharge, and delivery of cargo and/or services.

Additionally, subject to exceptions, 46 U.S.C. 8104(h) permits a master or mate (pilot) operating a towing vessel that is at least 26 feet in length measured from end to end over the deck (excluding sheer) to work not more than 12 hours in a consecutive 24 hour period except in an emergency. The Coast Guard interprets this, in conjunction with other provisions of the law, to permit masters or mates (pilots) serving as operators of towing vessels that are not subject to the provisions of the Officers' Competency Certificates Convention, 1936, to be divided into two watches regardless of the length of the voyage (46 CFR 15.705(d)).

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Vessels on voyages subject to STCW, which employ a two-watch system, are subject to and should comply with the rest periods under the revised STCW requirements. Any additional period of work has the potential to result in non-conformances during subsequent work periods. When engaging on subject voyages, vessel crew should be prepared to demonstrate compliance with the revised STCW requirements to Port State Authorities (see paragraph E of this Chapter for additional information on the STCW requirements). See Chapter B7 paragraph B.3 and Figure B7-1 for similar circumstances where a two-watch system may be permitted.

c. Fish Processing Vessels (FPVs).

Credentialed officers and deck crew on FPVs over 5000 GRT must be divided into at least three watches. At least a 2-watch system is required on FPVs of more than 1,600 GRT and less than 5,000 GRT. (See 46 CFR 15.705(e) and 46 USC 8104(k) and (l)).

d. Fish Tender Vessels In The Aleutian Trade.

The credentialed officers and crewmembers on a fish tender vessel of not more than 500 GRT engaged in the Aleutian trade must be divided into at least three watches. However, if: (1) the vessel operated in the Aleutian trade before September 8, 1990; or (2) the vessel was purchased to be used in that trade before September 8, 1990, and in fact entered into service in that trade before June 1, 1992, the credentialed officers and crewmembers must be divided into at least two watches. See 46 USC 8104(o).

B. In-Port Watches Of Credentialed Engineers.

There have been conflicting decisions and interpretations concerning whether credentialed engineers are required to be aboard vessels that are not in a fully operational condition. Under 46 U.S.C. 3302, vessels are not obligated to be manned according to the COI when they are "laid up, dismantled, or out of commission." The only area for which the Coast Guard has published an interpretation in this regard is the Great Lakes, where most vessels are laid up each winter. A vessel in this area undergoes a distinct status cycle:

1. Operating Status.

The vessel is in service.

2. Laying-Up Status.

The vessel has completed service and is being "laid-up" for the winter.

3. Laid-Up Status.

Laying-up of the vessel has been completed. The vessel is inoperable and is essentially laid-up and dismantled and "out of commission" for the winter.

4. Fitting-Out Status.

The lay-up period has ended and the vessel is being prepared for service.

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Vessels in laid-up status are exempted by regulations from Coast Guard inspection; therefore, no manning requirements shall be made for them. Vessels in laying-up or fitting-out status should normally be required to have credentialed engineers aboard in the early stages of work, and at any time when plant operation warrants such a requirement (for example, while the vessel is moored with boilers in operation). It is recognized that, in many instances, laying-up and fitting-out cannot be classified in a clear-cut manner; however, an adequate determination generally can be made under these criteria.

C. Workhour Limitations.

1. Authority Citations.

46 U.S.C. 8104; 46 CFR 15.1111 and 46 CFR 15.710.

2. "Required" Vs "Permitted" Workhour Limits.

The current statutory provisions limit the number of hours a credentialed officer or crewmember may be "required" to work, and in some cases also limit the number of hours the individual may be "permitted" to work. When an individual cannot be "required" to work beyond a certain number of hours, any work in excess of those hours must be voluntary. Such work is not considered to be voluntary if the individual works as a result of direct or indirect coercion. The employee's signature on an employment contract or when working under a labor agreement that clearly obligates him or her to work more than the statutory workhour limit is evidence that such work is performed voluntarily. (It should be noted that the statutory workhour limit e.g., the limit in the number of hours during which work may be required, is not necessarily the point at which "overtime" is calculated under a particular employment contract.)

a. Seaman's Right To Refuse.

Under 46 U.S.C. 8104(d) an individual retains the statutory right to refuse to work beyond the 8-hour statutory workhour limit, except in an emergency or other condition listed in 8104(f). Furthermore, work performed beyond the statutory limit, even when performed voluntarily, may be considered excessive and should not be condoned if the individual's performance will be impaired by fatigue. A continuing pattern of excessive workhours provides good cause for reviewing whether the manning complement as stated on the vessel's COI is sufficient for the safe operation of the vessel.

b. Holiday Work.

A seaman also may not be "required" to perform "unnecessary work" on Sundays or on certain holidays when the vessel is in a safe harbor, though this rule does not prevent the master from assigning work to get the vessel underway on a voyage. See 46 U.S.C. 8104(f).

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Under 46 U.S.C. 8104(c), 8104(h), and 8104(n), credentialed officers and crewmembers are not permitted to work beyond a certain number of hours. The individual still cannot be "required" to work over a certain number of hours each day, but these provisions also place a limit on the number of hours the individual can be allowed to work voluntarily. Except in strictly limited circumstances (such as a drill or emergency), the individual subject to the limitation is not permitted, and may not be required, to perform any work if it would result in working beyond the maximum workhour limitation. Vessels subject to STCW requirements have additional workhour limitations as found in A-VIII/1 and discussed in Section E of this Chapter.

3. Duty Status.

46 U.S.C. 8104(a) requires a minimum "off duty" (e.g., rest) period for officers assigned to take charge of the navigational watch when leaving or immediately after leaving port. The Coast Guard interprets "off duty" within this statute to mean: A continuous period of time that is available to the seaman for rest, during which no work is assigned. A vessel's officer who serves as nightmate while the vessel is in port is considered to be "on duty" whether or not engaged in work during that time. The hours during which the officer is aboard in such capacity would determine the number of hours worked during that day, and the point at which the officer was relieved would establish the beginning of the off duty period. Similarly, a mariner who has worked aboard vessel during the day and stays aboard with the watch section at night, on call in case of fire or an emergency, is considered "on duty" within the meaning of 46 U.S.C. 8104. The statutory prohibition precluding more than 8 hours required work per day is considered to apply to those officers and crew serving in a night relief watch. However, the presumption is that, by accepting such employment, the night watch has voluntarily assumed the additional duty.

4. Exceptions To Workhour Limitations.

Where statutory provisions impose workhour limitations, circumstances are described under which the limits are not binding. The master may require seamen to work when the crew is needed for "(1) maneuvering, shifting the berth of, mooring, or unmooring, the vessel; (2) performing work necessary for the safety of the vessel, or the vessel's passengers, crew, or cargo; (3) saving life on board another vessel in jeopardy; or (4) performing fire, lifeboat, or other drills in port or at sea." On the other hand, when there are statutory limits on the number of hours a seaman may be "permitted" to work, the circumstances under which those limits may be broken are restricted to responding to emergencies or for drills. While there are no strict definitions for what constitutes an emergency for purposes of exceeding a workhour limitation, the Coast Guard considers the best guideline to be the generally understood meaning of an emergency: An unforeseen development which imposes an immediate hazard to the safety of the vessel, the crew, the cargo, property, the passengers or the marine environment, requiring urgent action to remove or mitigate the hazard

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There are several statutes that impose maximum required or permitted workhours within a specific time period (e.g., "day," 24 hour period, etc.). Where the term "day" is used in the context of workhour limits, the Coast Guard continues to accept a long-standing interpretation rendered by the United States Attorney General that the word "day," as used in the predecessor to 46 U.S.C. 8104, is construed to mean a calendar day of 24-hours beginning at midnight. [(39 U.S. Op. Att'y Gen. 112, opinion dated October 5, 1937)]. Where a provision establishes a workhour limit within a consecutive time period, such as a 24-hour consecutive period, there is no specified starting point from which the 24-hour period is measured; except in an emergency or a drill, the prescribed workhour limit may not be exceeded within any given 24 hour consecutive period.

a. Uninspected Passenger Vessels (<100 GRT) [46 U.S.C. 2101(42)(B)].

There are no specific statutory or regulatory workhour limits which apply to the credentialed operators on these vessels, although 46 U.S.C. 8104(b) provides that a licensed individual on a seagoing vessel of not more than 100 GRT may not be required to work more than 12 hours in a 24-hour period at sea. The Coast Guard as a matter of policy considers 12 hours to be the practical limit for how long an individual can safely exercise direction and control of the vessel. While there may be individuals who can routinely and safely perform work for periods in excess of 12 consecutive hours, the rigors of watchkeeping increase the likelihood of fatigue beyond such period, and such a practice should be discouraged as imprudent. Depending upon the specific circumstances, an owner who compels a credentialed operator to work, or a credentialed operator who voluntarily works on an uninspected passenger vessel beyond 12 hours may be engaged in negligent operation of the vessel for failing to maintain an adequate watch. (See Chapters B3 and B6 for further discussions.)

b. Tankers.

A credentialed officer or seaman may not be permitted to work more than 15 hours in any 24-hour period, or more than 36 hours in any 72-hour period, except in an emergency or a drill. In other words, any individual employed on board in any capacity is limited to an average of 12 hours of work maximum per day, but can never exceed 15 hours of work in a 24-hour period. If an individual works more than 12 hours in one day that individual must work less than 12 hours on other days to ensure he or she does not work more than 36 hours in any three day (72-hour) period. The workhour limit applies to the master as well as other individuals employed on board tankers. The master is recognized to have a unique status on board the vessel. The master's duties, and the overall responsibility associated with overseeing the safety of the vessel and its crew, are continuous. However, the master, like any member of the crew, can suffer from fatigue. Although it may be difficult to fully predict or anticipate the master's workload, the master must regulate his or her own duties and workhours to mitigate the possibility of fatigue, particularly if the master is included in a watch section as an officer of the navigational watch. 46 U.S.C. 8104(n) exempts

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the master as it does the other credentialed officers and seaman, when workhours must be exceeded in the case of an emergency or drill.

c. Seagoing And Great Lakes Merchant Vessels Of More Than 100 GRT.

A credentialed officer or seaman in the deck or engine department on these vessels may not be required to work more than 8 hours in one day, except when needed for vessel maneuvers, "necessary" (e.g., essential, safety related) work, lifesaving, or drills. See 46 U.S.C. 8104(d), (e) and (f). This does not preclude seamen from voluntarily working beyond 8 hours and possibly becoming fatigued. OCMI's should consider all relevant information as described in Chapter B1 in establishing the required manning level. While there is no definitive basis for a maximum workhour limit for vessel crewmembers, the OCMI has the discretion to impose manning levels based on a specified reasonable workhour limit taking into account fatigue and other human factors. A twelve hour work day, applied in a manner similar to the workhour limit for tankers, is considered a reasonable workhour limit for other classes of vessels. (See Section H of Chapter B1 for additional discussion.)

d. Commercial Fishing Vessels.

Although there are no statutory workhour limit provisions regarding these vessels, there are requirements concerning watchkeeping arrangements that apply to the credentialed officers and deck crew on the various uninspected fishing industry vessels. (See Section A.4 of this Chapter and Chapter B7.)

D. Crossover Prohibition.

1. Authority Citation.

46 U.S.C. 8104(e).

2. Deck And Engine Departments.

On merchant vessels of more than 100 GRT (with certain exceptions as stated in 46 U.S.C. 8104(d), and towing vessels operating on the Great Lakes and connecting waters, a seaman may not be engaged to work alternately in the deck and engine departments; nor may a seaman be required to work in the engine department if he or she has been engaged to work in the deck department, and vice versa. However, this rule does not prevent the seaman from being required to work in a department for which he or she was not engaged when needed for vessel maneuvers, "necessary" (e.g., essential, safety related) work, lifesaving, or drills. See 46 U.S.C. 8104(e) and (f).

- a. When permitted by the Certificate of Inspection, some of the individuals in a vessel's required crew complement may be engaged as maintenance-persons and assigned as deck maintenance-persons or engine maintenance-persons in those respective departments. These individuals perform maintenance duties within the deck or engine department boundaries and are subject to the crossover prohibition of 46 U.S.C. 8104(e).

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- b. The required maintenance-persons should hold appropriate qualified ratings (e.g., Able Seaman, QMED, etc.) so they may be used to augment navigational or engine room watches should the need arise. During periods in which these maintenance-persons are used to augment watches, they become part of the watch and are subject to the appropriate watch rotation requirements.

3. Maintenance Department.

With the increased use of automated systems, labor saving devices, and scheduled shoreside maintenance programs, some vessel operators have used shipboard management innovations to provide greater flexibility in the use of available crewmembers. Assignment of maintenance-persons to a Maintenance Department allows these crewmembers to be used to perform work throughout the vessel on a regular schedule. However, with suitable qualifications, they can also be available to augment the watch as watchstanders as circumstances may warrant (such as periods of restricted visibility, or a failure in an automated system). When authorizing implementation of a Maintenance Department on a particular vessel, the OCMI should condition final approval on review of the vessel's operational requirements, and crew workload, following a trial period of up to a year. (See Chapters B1 and B4 for maintenance department discussion and sample manning scales for vessels employing maintenance-persons.)

- E. International Standards Relating To Working Conditions.

1. International Convention On Standards Of Training, Certification And Watchstanding For Seafarers (STCW) 1978, as amended (46 CFR 15.1111).

The 2010 amendments to the STCW Convention include changes to the hours of rest requirements, STCW Regulation VIII/1, applicable to personnel working on board U.S. vessels subject to STCW. Specifically, the amended rest hour requirements are as follows: (1) Expanded the application for hours of work and rest periods for mariners to include all personnel with designated safety, prevention of pollution, and security duties onboard any vessel; (2) changed the weekly rest hours requirements from 70 hours to 77 hours; and (3) required the recording of hours of rest. While STCW is not a manning convention, it clearly impacts manning decisions in terms of requiring certain skills to be possessed by crewmembers performing certain functions. STCW also lists a number of criteria to be taken into account and principals to be observed in keeping a watch.

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In accordance with the provisions of section A-VIII/1 of the STCW Code, all persons who are assigned duty as officer in charge of a watch or as a rating forming part of a watch and those whose duties involve designated safety, prevention of pollution and security duties shall be provided with a rest period of not less than:

- (1) a minimum of 10 hours of rest in any 24-hour period; and
- (2) 77 hours in any 7-day period.

The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours.

b. Exceptions For Emergencies.

The requirements for rest periods need not be maintained in the case of an emergency or in other overriding operational conditions. Musters, fire-fighting and lifeboat drills, and drills prescribed by national laws and regulations and by international instruments, shall be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue. Nothing in this guidance should be deemed to impair the right of the master of a vessel to require a seafarer to perform any hours of work necessary for the immediate safety of the vessel, persons on board or cargo, or for the purpose of giving assistance to other vessels or persons in distress at sea. Accordingly, the master may suspend the schedule of hours of rest and require a seafarer to perform any hours of work necessary until the normal situation has been restored. As soon as practicable after the normal situation has been restored, the master shall ensure that any seafarers who have performed work in a scheduled rest period are provided with an adequate period of rest.

c. Records.

The master or authorized person is responsible for ensuring that records of daily hours of rest are maintained for each seafarer serving on the vessel. Owners/operators are encouraged to utilize the Model Format for Records of Hours of Work or Hours of Rest of Seafarers developed by the IMO. Each record should be endorsed by the master or authorized person and the seafarer. A copy should be made available to the seafarer. It is recommended that records be retained on-board for each seafarer during their full time on board or for 12 months, whichever is the longer. In an emergency or when unforeseen events occur, changes may be unavoidable. In these cases records should reflect all deviations from the hours of rest schedule.

d. Lay-up/Shipyard/Drydock.

The U.S. Coast Guard interprets the provisions of STCW Chapter VIII (Watchkeeping) as applying to seagoing vessels whose at-sea and in-port operations necessitate watchkeeping personnel, including those whose duties involve designated safety, security and prevention of pollution functions. Accordingly, it is the

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interpretation of the United States that the provisions of STCW Chapter VIII (Watchkeeping), do not apply to U.S. Documented vessels while out-of-service (e.g. laid up, dismantled, or out of commission) in lay berth, shipyard or drydock, unless expressly provided otherwise.

NOTE: This may also include certain public vessels under interagency agreement.

However, owner/operators should be cognizant of other Federal or State laws that may be applicable to vessels while in U.S. shipyards or drydocks. It remains the responsibility of the owner/operator, master and crew to ensure that watches are so arranged that the efficiency of all watchkeeping personnel is not impaired by fatigue and that duties are so organized that the first watch at the commencement of a voyage and subsequent relieving watches are sufficiently rested and otherwise fit for duty. Reference MSM Volume II Section A.6.E and Part B Section 5.B of this Volume for additional information on exemptions for laid up, dismantled, or out-of-commission vessels.

In general, vessels in a recognized reduced operating status (ROS) would be considered in a manner similar to the provisions of this paragraph. Vessels entering into ROS should coordinate with the cognizant OCMI. All applicable regulations and requirements would be relevant upon re-entering service. The OCMI should consult any MOU or MOA in force between the USCG and MARAD or MSC (as applicable).

2. The International Labor Organization (ILO) Convention Concerning Minimum Standards In Merchant Vessels (ILO Convention 147).
 Among other matters, this Convention addresses shipboard conditions of employment and shipboard living arrangements. Each country that is a party to the Convention must have laws or regulations laying down, for vessels registered in its territory, inter alia, "safety standards, including standards of competency, hours of work and manning, so as to ensure the safety of life on board vessel." This convention came into force for the United States on June 15, 1988. (See COMDTINST 16711.12 for enforcement guidance concerning this convention.)
3. Human Factors Considerations.
 Recognizing that the majority of maritime casualties involve human error, the International Maritime Organization is undertaking a review of its instruments, including conventions, codes and resolutions, to consider whether human factor implications have adequately been taken into account in the development of guidelines, standards and recommendations. The United States is playing a major role in this effort to integrate human factors considerations into the IMO decision-making process. The objective is to ensure that human performance limitations, and the role of the human being within a defined system, are given fundamental consideration in the development of new international standards. Given the rapidity with which new information is becoming available on human factors applications in the maritime environment, it is not possible to

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provide detailed guidance in this manual. Information which may be particularly useful to the industry will be circulated by other suitable means.

F. General Responsibilities.

Mariners, owners/operators, and the Coast Guard have separate responsibilities for compliance with, and enforcement of, the work-hour limitation and watchkeeping laws. The subparagraphs below provide general guidance regarding the responsibilities of each party.

1. Mariners.

Mariners have an individual responsibility to obey the law and are responsible for reporting suspected watchkeeping and work-hour violations via the chain of command, ultimately to the Coast Guard once all other efforts have been exhausted. The master of a vessel is ultimately responsible for the safety of the vessel, passengers and crew, cargo, and the environment. To carry out this responsibility the master must ensure that he/she and the crew are properly rested and complying with the law. The master must communicate with the owner/operator to ensure realistic goals are set. If management exerts pressure to exceed the law, the mariner is encouraged to report this situation to the local Coast Guard OCMI. Section G of this Chapter describes protections afforded to mariners when reporting violations to the OCMI. While the definition of work includes activities which are required for the vessel to be operated safely, a minimal amount of *de minimis* activities would generally not be considered a violation of this rule. Examples of such *de minimis* activities include: those which are necessary to ensure continued safe operation of the vessel (i.e. information exchange at watch change); safety meetings; and drills and training which can only be conducted underway.

2. Ship Management.

Owners/operators, like mariners, are responsible for obeying the law. Companies should ensure that employees are informed of the law and provided with information regarding safety concerns of not getting adequate rest. They should be aware of operational demands and work hours required to complete expected tasks on board their vessels. 46 U.S.C. 8104(j) states that “the owner, charterer, or managing operator of a vessel on which a violation of subsection (c), (d), (e), or (h) of this section is liable to the government for a civil penalty...” thus pointing out their responsibility to ensure compliance. They should provide unambiguous guidelines to the master regarding expectations to comply with safety requirements and the law when these are in conflict with operational demands. Under the requirements of the International Safety Management (ISM) Code, for subject vessels, the Company should ensure that each vessel is manned with qualified, certificated and medically fit seafarers in accordance with national and international requirements. Shore management has a responsibility to ensure that the Safety Management System (SMS) provides proper guidance on the management of fatigue, its impact on safety and the regulation of hours of work and rest. The SMS should encourage seafarers to alert their onboard managers should they be working, or be at risk of working, in non-conformance. The SMS should also provide clear guidance to Masters on the actions to be taken in the event of significant non-conformance. Such

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action may include the suspension of operations until personnel are suitably rested. Owners/operators should also be aware of, and react to, planned or expected periods of high intensity operations and ensure that staffing on board is adequate in good time prior to the planned operations.

3. U.S. Coast Guard.

The Coast Guard is charged with enforcement of the law. The Coast Guard can initiate an investigation based on confidential information provided by mariners during the vessel inspection process, anonymous tips, or through the findings of a Coast Guard marine casualty investigation. The latter may also bring consequences for the mariners involved or the vessel's owner/operators. When the Coast Guard determines that a casualty occurred because of a violation of law, an appropriate action, a suspension and revocation proceeding, and/or a civil penalty may be recommended. However, as described in Section G of this Chapter, protections exist for the mariner reporting deficiencies or illegal operations. OCMI's should ensure that all responsible parties within their area of responsibility are aware of the requirements of the law and particularly the importance that hours of rest, safe manning, and watchkeeping play in ensuring safe operations. See Section B1.K.3 for additional guidance on inspection and enforcement protocols, as well as Sections B6.A.4 and 5 for automated systems. It should be noted that the Coast Guard, by 46 CFR 5.71, is prohibited from exercising its authority for the purposes of favoring any party to a maritime labor controversy. However, if a situation is encountered that affects the safety of a vessel or persons on board, the Coast Guard will initiate an investigation and pursue appropriate action when a violation of statute or regulation is discovered. A particular situation that has generated confusion and concern involves the requirement found in 46 U.S.C.8104(a), which states that an officer taking charge of the deck watch on a vessel leaving port must have at least 6 hours of off-duty time in the 12 hours immediately before leaving port. While an owner/operator cannot be held accountable for the time a mariner has off, they are responsible for the time that an individual is on the dock or on the vessel while in port, and can be expected to verify that the individual has had an opportunity for rest regardless of where he/she has been prior to performing the assigned duties. The owner/operator cannot expect a mariner to participate in extensive preparations for getting underway and also be rested enough to take the navigation watch without providing an opportunity for the minimum off-duty time required by 46 U.S.C. 8104(a). Similarly, the mariner is responsible for arriving at the vessel properly rested.

G. Protections.

The Coast Guard has historically depended on individuals involved with the maritime industry to report violations or unsafe vessel conditions when they occur. In the absence of mariner reporting, the Coast Guard is limited to discovering these types of violations through casualty investigations, or by chance during a scheduled inspection. To prevent retaliation for reporting violations to the Coast Guard, Congress enacted specific protections for mariners that make reports of violations to the Coast Guard. The following cites represent the obligation and

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protections afforded to mariners for reporting violation of the law or regulations to the Coast Guard.

1. 46 U.S.C. 2114.

Provides protection to seamen against any form of discrimination, including discharge, for reporting a violation of any law or regulation issued under the authority of Title 46.

2. 46 U.S.C. 3315(a).

Requires credentialed officers servicing on inspected vessels to assist the coast Guard in the inspection of their vessels as well as point out defects and imperfections known to them. This includes any violations of work or watch standing limitations.

3. 46 U.S.C. 3315(b).

Prohibits any official of the Coast Guard from disclosing the identity of any individual that provides information on vessel defects, imperfections, and overall safety of an inspected vessel which he or she is serving. This includes information on watchkeeping and work hours.

4. Freedom Of Information Act (FOIA).

The identity of any mariner who reports an unsafe condition on any vessel, inspected or uninspected, is also protected in accordance with the FOIA exemptions and Department of Transportation (DOT) regulations (49 CFR Part 7).

H. Crew Endurance Management.

The Crew Endurance Management System (CEMS) provides a system of proven practices for managing endurance risk factors that affect operational safety and crewmember efficiency in the maritime industry. The process of implementing CEMS is intended to be flexible enough to enable a vessel or company to easily incorporate these practices into their current onboard operations. Fundamentally, the system is a continuous-improvement process, which allows an organization to focus efforts towards those factors that are most feasibly mitigated and that present the greatest possible reduction of risk. NVIC 02-08 provides guidelines and standard criteria for use by vessel owners, operators, third-party auditors, Coast Guard OCMI's, marine casualty investigators, and others to aid in the assessment of the veracity and effectiveness of a company's or vessel's CEMS program.

CEMS is not a substitute for applicable legal requirements, nor is it itself currently a regulation. It is not intended to replace guidelines currently in the Oil Pollution Act of 1990 (OPA 90) or Standards of Training, Certification and Watchkeeping for Seafarers (STCW) regarding hours of work and rest. The fundamental purpose of the CEMS is to provide managers, captains, department heads, and officers with tools to manage normal operational risk factors that can degrade crew performance and compromise shipboard safety. Accordingly, it should be used in conjunction with the guidelines provided in OPA 90 and STCW.

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PART B: VESSEL MANNING**CHAPTER 6: MANNING REQUIREMENTS FOR AUTOMATED VESSELS****A. Manning Requirements.**

Part B, Chapters 1-7 (legacy Chapters 20-26), has been structured to interlink various elements affecting the safe manning and watchkeeping on U.S. vessels and should be referenced comprehensively. Refer to paragraph B1.A for a summary of all Chapters. This Chapter discusses the acceptance of automated systems to replace specific personnel or to reduce overall crew requirements. Title 46 CFR Part 62 and this Chapter (B6) are not necessarily applicable to uninspected vessels. However, they may be used as an alternative in cases where safe manning documentation is desired. Alternatively, for uninspected towing vessels to receive safe manning documentation endorsed for Periodically Unattended Machinery Space (PUMS), operators may present the OCMI with a Certificate of Class appropriately endorsed for unattended machinery status or meet NVIC 1-78 (see Chapter B3, Section B.2.d.(2)(b)iii).

1. General.

Coast Guard acceptance of automated systems to replace specific personnel or to reduce overall crew requirements is predicated upon the capabilities of the system, its demonstrated and continuing reliability, and a planned maintenance program that ensures continued safe operation. Accordingly, 46 CFR Part 62 applies where automated systems are provided to replace specific personnel in the direct control and observation of the engineering plant and spaces or to reduce overall crew requirements. Often, Part 62 is incorrectly presumed to apply only to machinery or electrical installations that reduce vessel manning requirements; it applies to all automatically or remotely monitored or controlled systems or equipment (MSM Volume IV, Chapter 3.F). The automated systems and arrangements must provide that under all sailing conditions, including maneuvering, a level of safety at least equal to that of the same vessel with the entire plant under fully attended direct manual supervision. The Officer in Charge, Marine Inspection (OCMI) should review all manning proposals objectively. Reductions in manning scales shall only be granted when they do not detract from the safe navigation or operation of the vessel and are consistent with statutory or regulatory requirements. The following general features shall be addressed in reduced manning proposals:

a. Fire Equipment.

Installed fire protection equipment shall be adequate for the reduced complement to deal effectively with a fire emergency.

b. Station Bill.

The station bill shall provide for the effective use of personnel during emergency situations.

c. Lifesaving Equipment.

The design and installation of lifesaving equipment shall be adequate for effective operation by the complement.

d. Vital Systems.

Redundancy of vital systems or machinery shall be required (as in duplicate fuel pumps, secondary vessel's service generator(s) with independent prime movers, etc.).

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- e. Operational Limit.
Scenarios of the vessel's contemplated operation (unlimited or limited service, possible support by shoreside personnel) shall be provided.
- f. Accommodations.
Quarters shall be sufficient to accommodate the designated complement and any additional personnel needed during initial operation or during periods when additional manning is required, such as a result of an automation failure. These accommodations need not be in the form of additional staterooms, but their size and furnishings shall be adequate to meet the needs of the additional personnel.

Manning proposals for new construction or existing vessels that are altered to incorporate automated features should be requested from the owner/operator early in the work. Experience has shown an occasional lack of awareness or understanding of the legal requirements concerning the Coast Guard's assignment of manning scales. In some cases, delay in obtaining such information may result in completion of the vessel to designed standards that will not physically accommodate the required crew.

2. Deck Department.

Reductions in the deck department normally involve elimination of the ordinary seamen, resulting in a deck crew of 6 able seamen (ABs). In addition, requests are received to man vessel's with 4 ABs and 2 ordinary seamen. This manning will normally be considered only if the 2 ordinary seamen meet the criteria set forth in Navigation and Vessel Inspection Circular (NVIC) 3-83. The vessel's Certificate of Inspection (COI) will require 6 ABs, but will be endorsed to allow substitution of up to 2 specially trained ordinary seamen for 2 ABs. The decision to allow substitution of specially trained ordinary seaman for ABs rests with the OCMI. On vessels subject to STCW, members of the navigation watch must meet the qualification as "rating forming part of a navigational watch," and must hold the appropriate STCW certificate. The basic features permitting a lesser requirement for deck personnel are as follows:

- a. Messing.
Coffee service, drinking water, and sanitary facilities in the immediate bridge area are necessary for the functioning of the bridge watch without the relief service traditionally provided by an ordinary seaman.
- b. Call System(s) From The Bridge.
These systems, running to each mate and AB's quarters, general spaces, such as the messroom and recreation areas, and line-handling stations, enable the summoning of crewmembers for the oncoming watch and in emergencies, and allow better coordination in the mooring/unmooring of the vessel.
- c. Constant Tension (Self-Adjusting) Mooring Winches.
These devices enable the reduced deck force to moor/unmoor the vessel safely, without unreasonable physical effort.
- d. Automated Hatch Cover Securing Equipment.
These devices enable the reduced deck force to open and secure the vessel's hatches without unreasonable physical effort (this is particularly important aboard dry bulk and container cargo vessels).

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NOTE: These features are not all-inclusive. Consideration will be given to alternate proposals that accomplish the same goals more practically, when applied to a particular vessel.

3. Engine Department.

Modern vessels frequently have automated engineering systems. As defined in 46 CFR 62.10, “automated” means the use of automatic or remote control, instrumentation, or alarms. In certain cases, automated engineering systems may be provided to replace specific personnel in the control and observation of the engineering plant and spaces, or reduce overall crew requirements. See 46 CFR Subchapter L, Part 130 Subpart D for specific provisions pertaining to the automation of unattended machinery spaces on offshore supply vessels of 100 GRT or more. A review of automated vessel experiences show varying degrees of reliability in engineering automation. Accordingly, the U.S. Coast Guard’s acceptance of automated engineering systems to replace specific personnel or to reduce overall crew requirements shall be made only after a system has been operated for a sufficient period of time to demonstrate its reliability.

a. Reduction In Engine Room Manning Requests.

The Officer in Charge, Marine Inspection (OCMI) shall review and approve all requests for reductions in engine room manning, including requests to operate minimally attended or periodically unattended machinery spaces (MAMS/PUMS). The examination shall include a detailed analysis of the following: (1) the capabilities of the automated system; (2) the combination of the personnel, equipment, and systems necessary to ensure the safety of the vessel, personnel and environment in all sailing conditions; (3) the ability of the crew to perform all evolutions including emergencies and during control or monitoring system failure; (4) a planned maintenance program with regular testing and inspection procedures; and (5) the automated system's demonstrated reliability during its initial trial period and its continued reliability. Critical consideration shall be given to the degree of vital system automation, status of automation approval by the Marine Safety Center (MSC) and status of testing required by 46 CFR 61.40. 46 CFR 62.50 provides additional details on the specific equipment and operational requirements for minimally attended or periodically unattended machinery arrangements. Although classification society automation notations identify the level of automation provided in accordance with class rules, they are not a substitute for the applicable laws, regulations, and policy pertaining to manning and watchkeeping on U.S. vessels. The OCMI shall consider all relevant information in determining a reduction in crew size or authorization for MAMS/PUMS to ensure there is no adverse affect on safety. Any follow-up requests for alteration of the vessel's manning shall be documented and reviewed in a similar manner. See also 53 FR 81-030, 96 [May 18, 1988]), specifically 17834 for OCMI authority and responsibility.

PART B: VESSEL MANNING**CHAPTER 6: MANNING REQUIREMENTS FOR AUTOMATED VESSELS**b. Automated Engineering Systems.

There are generally four stages in the approval process of vessels with automated vital systems that may ultimately lead to a request for a reduction in engine room manning. This process occurs between the vessel owner and the cognizant OCMI.

(1) Conceptual Approval.

This is normally given in response to a request to evaluate a proposed vessel and its crew size before construction and, in some instances, may be based on only the broadest description of the vessel and its intended operations. Conceptual approval is always based on the condition that the cognizant OCMI finds the vessel's proposed manning is sufficient for safe operation. The manning levels in the conceptual approval are the design goals for the owner, which are subject to change if the situation warrants. Also, the owner may want to design the automation so that the engine room is suitable for periodically unattended operation, even though no request for reduced manning is made during initial certification.

(2) Technical Review and System Testing.

In accordance with 46 CFR 61.40, design verification and periodic safety testing of automated vital systems verifies system design, construction and operation according to applicable Part 62 requirements. These include general and specific requirements for the types of vessels described in 46 CFR 62.01-5(a) and the automated engineering systems described in 62.01-5(b). There are additional requirements when automation is intended to replace watchstanders for minimally attended or periodically unattended machinery spaces (see 46 CFR 62.50-20 and 62.50-30, respectively). Design verification testing proves the fail-safe character of the vital systems automation design, and is the most effective method to verify functional independence of automated engineering systems. This testing must be performed according to a design verification test procedure, considered satisfactory for shipboard testing by the MSC, and witnessed by the cognizant OCMI or, in the case of NVIC 2-95 (series), a designated Authorized Classification Society Surveyor before vessel certification or immediately after installation of the automation, as applicable. The approved design verification test (DVT) procedure is the final product of the completed vital systems automation plan approval and satisfactory review of the qualitative failure analysis (QFA) required by 46 CFR 62.20-3(b). A staff engineer from MSC may accompany the OCMI to witness the DVT. This critical testing should not be started until plan review of the QFA and DVT is complete. Periodic safety testing must also be completed to demonstrate required instrumentation and alarms and proper operation of the automation. This testing is done in accordance with the periodic safety test procedure that is reviewed by MSC and then forwarded with recommendations to the cognizant OCMI. Again, this testing should not begin until vital systems automation plan review is complete. The MSC or ACS (in the case of ACP) conducting plan review on behalf of the Coast Guard will not stamp such plans "Approved" until after the completion of testing and after the incorporation of any necessary changes identified during testing by the OCMI or ACS. Following successful completion of testing

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onboard and the incorporation of any necessary changes identified during testing, the document must be resubmitted to MSC for final review and approval.

(3) Initial Certification.

When a vessel is initially certificated, the manning level specified in the manning block on the certificate of inspection will generally be that of a fully manned engine room. This level is determined based upon the minimum personnel necessary to stand the engine room watch should complete automation failure occur. However, contingent upon satisfactory technical review and system testing, during the trial period the vessel's master has the authority to decide if watches are necessary, the required complement of the watch, and how watches are actually stood (46 CFR 15.715(b)). In making this determination the master should pay due regard to IMO Resolution A.1047(27), as discussed in paragraph (4)(f) below, when on an international voyage. If for some reason the automation fails, the necessary watchstanders will be onboard and will be assigned a watch schedule in accordance with the requirements of 46 U.S.C. 8104. No reference to watches or periodic unattended engine room operation is to appear on the COI until approved. However, the COI should indicate the MSC automation system approval letter by serial number and date.

(4) Final Approval.

A vessel owner may ask the cognizant OCMI for a reduction in engine room manning before, at, or sometime after, initial certification. The request for reduction in engine room manning must precede the trial period discussed below and must be consistent with the technical approval of the vessel's automation features. In making a final approval determination the OCMI should: (1) ensure satisfactory completion of the trial period; (2) review the vessel's records; and (3) conduct an onboard observation trip to witness the system's reliability and the ability of the reduced crew to maintain and perform all evolutions safely. Based on a satisfactory approval;

(a) Trial Periods.

The trial period is a period of operating the plant at the desired watchstanding level (however, a complete engineering crew, as specified in the manning block on the vessel's COI, must be onboard). The trial period validates the proper design and installation of the automation intended to replace engine room personnel and allows the vessel personnel to correct minor system problems and fine tune the automated systems. The trial period also demonstrates the reliability of the automation hardware and software. The duration of trial periods for new construction when the vessel is first in a class of vessels is based on underway time and will be 3000 hours. Follow up vessels in the same class may have a reduced trial period depending upon the successful completion of the trial period by the first in class and other circumstances considered by the OCMI. Similarly, consideration for reduced trial periods may also be given to vessels routinely engaged on limited routes with regular access to shore-based maintenance

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support. On the other hand, evidence of repeated major problems and systems failures may be cause for the OCMI to lengthen trial periods and in some cases reevaluate previously accepted manning levels on vessels of the same class.

(b) Review of Vessel Records.

Whenever possible, the inspector should review the engineering logs, maintenance records and crew overtime logs prior to the observation trip. This will assist in developing a plan for conducting the inspection and to identify possible problem areas with the automation. The OCMI should prompt the vessel owner to submit these logs for review whenever they are not attached with the observation trip request. Identification of problems can be a formidable task. Many of the sophisticated computer logging systems prevalent today tend to log all events. For example, equipment secured by the vessel's crew as a matter of routine generate alarms and logged events. It is difficult to differentiate such normal occurrences from evidence of significant automation problems (e.g., repeated problems that significantly degrade system reliability or automation system/equipment failures). Interviews with the engineering crew should help the inspector make these distinctions. It is also important to determine whether maintenance is preventive or in response to a casualty. Interviews will also assist here. The inspector shall document all significant automation problems, including excessive maintenance, in the inspection report.

(c) Observation Trip.

Onboard observation trips should be of sufficient length to adequately assess the reliability of the systems. A trip of one to seven days is recommended depending upon the complexity of the plant and the crew reduction requirements. If possible, the inspector assigned should be one who is familiar with the vessel. The vessel should be operated as it would with reduced manning and the inspector should witness the crew's ability to respond to emergencies and system failures. The crew's response should be demonstrated through their performance of a reasonable number of randomly selected tests taken from the vessel's approved periodic safety test procedure. Interviews with the vessel's engineering officers and crew should be conducted to discuss plant operation, the frequency and character of assistance-needed alarms, event logging methods, and maintenance policies. The inspector should submit a report that is sufficiently detailed to allow for an adequate review of all evolutions and/or problems witnessed, and should document all significant automation problems and any excessive maintenance needed. The OCMI may, after reviewing the results of the observation period, require an increase in engine room watch personnel until any problems are corrected, a longer trial period may also be required. The OCMI may also consider an increase in engine room watchstanders onboard other vessels of the same class previously approved for reduced manning levels. In these cases, the OCMI's that issued COIs to any sister vessels should be consulted.

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The COI may be amended once the request for reduced manning is approved and/or MAMS or PUMS is authorized. The following entry in the "Conditions of Operation" section shall be made identifying the mode of operation for which the propulsion plant is approved (see also the Common COI/SMD Sample Endorsements in the Annex):

APPROVED FOR [**PERIODICALLY UNATTENDED**] OR [**MINIMALLY ATTENDED**] MACHINERY SPACE OPERATION. THIS APPROVAL AND THE MINIMUM MANNING LEVEL SPECIFIED ON THIS CERTIFICATE OF INSPECTION ARE CONTINGENT UPON THE PROPER OPERATION OF THE AUTOMATED CONTROL/AUTOMATED MONITORING/AUTOMATED MACHINERY MANAGEMENT SYSTEM(S). ANY MAJOR ALTERATION OR FAILURE MUST BE REPORTED IMMEDIATELY TO THE NEAREST OCMI.

Based on a request and satisfactory final approval (Section A.3.b.(4) of this Chapter), the OCMI may consider a reduction in engineering personnel. For example, a typical full complement of engineering personnel [1 C/E, 3 A/Es, and 3 engineering ratings], for a three watch system on a deep-draft cargo or tank vessel, may be reduced based on PUMS by up to one A/E and the three ratings. Similarly, the full complement of engineering personnel may be reduced based on MAMS by up to the three ratings. These levels are based upon the minimum personnel necessary to stand the engine room watch, per 46 U.S.C. 8104(d), should a complete automation failure occur and live continuous watches be necessary. For appropriately automated vessels routinely engaged on limited routes, the OCMI may consider further reductions in the engineering complement based on regular access to shore-based maintenance support. However, the established manning level must not be less than the minimums stipulated by law or regulation. Prior to any reductions in engineering personnel, the OCMI must be satisfied with the arrangements to ensure adequate watchkeeping, hours of rest, and provisions for onboard maintenance. All provisions for reductions in the engineering complement based on automation should be adequately specified in the manning proposal.

Any major alteration or failures (i.e. casualties) of the automated vital systems must be reported immediately to the nearest OCMI. A major alteration of an automated vital system where a qualitative failure analysis (QFA) is required to be submitted (46 CFR 62.20-3(b)), onboard design verification tests (DVT) in accordance with 46 CFR 61.40-3 are required to be performed immediately after the installation of the automated equipment. Machinery or equipment failures, including those affecting the associated class notation, may result in the OCMI requiring a manned machinery plant operation. In some cases, an increase in manning may be warranted to support live continuous watches. See Section A.5 of this Chapter for discussion on Increased Manning Levels.

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Reflags will be processed in accordance with this Chapter, except allowance for a reduced trial period can be considered if prior records (in English or with certified English translation) can be provided showing a history of safe operation, and that no major system changes are contemplated during reflagging. In no case will an initial manning level less than that required by the former Flag State be considered.

(f) Vessels Subject to Certain SOLAS Requirements.

The OCMI's determination of acceptable machinery space attendance stems from the systems, controls, and capabilities in the Administration's (U.S.) interpretation of SOLAS II-1/E, 46 CFR Part 62, which includes the provisions for regular inspections and routine tests, required by II-1/46.2. These provisions have been incorporated into the periodic inspection and testing regulations found in 46 CFR 61.40 and Part 62. These provisions apply where automated systems are provided to replace specific personnel in the control and observation of the engineering plant and spaces, or reduce overall crew requirements (see Section A.1 of this Chapter). The arrangements must make sure that under all sailing conditions, including maneuvering, the safety of the vessel is equal to that of the same vessel with the entire plant under fully attended direct supervision. The approval to operate minimally attended or periodically unattended machinery spaces is subject to the requirements of 46 CFR Part 62. Authorization shall be so stated on the COI as required by SOLAS II-1/E and recommended by Annex 4 of IMO Resolution A.1047(27), as amended, as discussed in paragraph 3.b.(4)(d) above.

(g) Alternate Compliance Program (ACP) / Maritime Security Program (MSP).

For additional information, refer to the latest guidance pertaining to vessels enrolled in the ACP or MSP. Reference the applicable ACP Supplement for specific provisions regarding ACP vessels.

4. Annual Inspections.

Marine inspection personnel shall ascertain the performance of installed systems of those vessels that have reduced manning levels during annual inspections. In addition to the review of the vessel's logs, maintenance records and overtime sheets, credentialed officers and ratings should be interviewed. When vessels are required to carry engine maintenance personnel, any periods in which they are placed in a watch status must be noted. See Section B1.K.3 for additional guidance on inspection and enforcement protocols.

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Vessel manning levels that have been reduced due to the installation of automated systems or controls will be restored to conventional levels if the automated system develops a pattern of unreliable performance; isolated instances of "downtime" will not be basis for increased manning. The manning level will be adjusted only in the department affected by the malfunctioning system, and an appropriate amendment will be made to the COI. The increased manning level will remain in effect until corrective action has been taken and the system has been tested to the OCMI's satisfaction.

The OCMI should take appropriate action to validate any complaints or reports detailing specific instances of repeated equipment failures, excessive overtime, or concerns regarding unsatisfactory performance of crews during emergency and operational evolutions onboard vessels having reduced manning. If the reports are confirmed, a reevaluation of the manning may be justified. The COI required manning must reflect the minimum safe manning level to comply with statutes and regulations. The OCMI should increase the required manning whenever a review of the work records indicates excessive workloads, or when statutory workhour limits are being exceeded, or in situations when the limits are met by the virtue of the vessel owner assigning a sufficient number of "other persons in the crew" to augment the required crew. Manning increases deemed necessary by the OCMI due to automation system failures or inability to safely operate and maintain the vessel for any reason should be reported to Commandant (CG-CVC). Automated machinery control and management system failures, design or component related, which may affect a class of vessels should also be reported to Commandant (CG-ENG).

See Section B1.K.3 for additional guidance on inspection and enforcement protocols, as well as Section B.5.F.3 for additional discussion on U.S. Coast Guard responsibilities.

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A. General.

Part B, Chapters 1-7 (legacy Chapters 20-26), has been structured to interlink various elements affecting the safe manning and watchkeeping on U.S. vessels and should be referenced comprehensively. Refer to paragraph B1.A for a summary of all Chapters. This Chapter discusses the statutes and regulations that apply to the uninspected vessel industry. Although there are very few statutory requirements that allow the Coast Guard to regulate the manning of uninspected vessels, this Chapter will discuss those statutes and regulations that do apply to the uninspected vessel industry. The discussions and manning recommendations in this Chapter are not meant to be all-inclusive and should be used as a general guide only. (See Chapters B2, B3, B4 and B5 for discussions concerning manning and watchstanding qualifications necessary to meet U.S. and international requirements when applicable to certain vessels discussed in this Chapter.)

B. Towing Vessels (Including Integrated & Articulated Tug-Barges (ITBs / ATBs)).

Towing vessels are subject to various manning requirements depending largely on route, tonnage, service, and inspection status. See Chapter B3. Section G for the Towing Endorsement Table and additional information on which towing endorsements or combinations thereof, are required for various operations.

1. Definitions.

a. Oceans (Domestic Trade) Voyages.

An Oceans (domestic trade) voyage can be interpreted to include a voyage from any U.S. port to any other U.S. port. 46 U.S.C. 114 states that the term "United States", when used in a geographic sense, means the States of the United States, the District of Columbia, Guam, Puerto Rico, the Virgin Islands, American Samoa, the Northern Mariana Islands, and any other territory or possession of the United States. However, a Panama Canal transit constitutes an international voyage (see Historical and Statutory Notes, 46 U.S.C.A. 114 [West 2007]).

b. Near Coastal Voyages.

46 CFR 10.107 states, in part, that "near coastal" means ocean waters not more than 200 miles offshore from the U.S. and its possessions. See paragraph D of this Chapter regarding uninspected passenger vessels operating in U.S. near coastal waters, and Chapter B3 paragraph B.2.d.(2) for additional discussion pertaining to U.S. vessels that regularly operate in the near coastal waters of another country.

2. Uninspected Towing Vessel Worksite Exclusion.

Worksite means an area specified by the cognizant Officer in Charge, Marine Inspection (OCMI) within which workboats are operated over short distances for dredging, construction, maintenance, or repair work and may include vessel yards, owner's yards, or lay-down areas used by marine construction projects.

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Workboat means a vessel that pushes, pulls, or hauls alongside equipment including dredging, construction, maintenance, or repair equipment within a worksite.

The statute addressing officers on towing vessels, 46 U.S.C. 8904, requires a towing vessel that is at least 26 feet (7.9 meters) in length to be operated by a licensed individual. The U.S. Senate Committee on Commerce Report of June 27, 1972, however, described various situations in which the statute was not intended to apply. The following statement was included in the report: "The licensing requirement will apply only to those vessels which are documented solely for other services or are not required to be documented. The vessels covered are those which perform towing services as a business and the bill does not cover vessels towing in an emergency or on an intermittent basis, not directly connected with the service for which the vessel may have been documented. Excluded from coverage would be, for instance, workboats which are used to move dredging equipment for short distances at the dredging site" (H.R. 92-125, 92nd Cong., 1st sess., 3.). The import of the legislative history comment was that workboats, at a worksite, that may be called upon to move a piece of equipment a short distance at a worksite on an emergency or intermittent basis, would not be required to be operated by licensed individuals (credentialed officers). On the other hand, vessels engaged to perform towing services, including marine construction equipment, however intermittently, would be required to be operated by licensed individuals (credentialed officers). It is important to note that workboats, which tow barges on a fulltime basis, even though always at the worksite, are not operating on an emergency or intermittent basis and are not entitled to a worksite exclusion.

Towing vessels not specifically engaged in the commercial towing service, operating solely as workboats in dredging operations may be exempt from the manning requirements of 46 U.S.C. 8904. Each case shall be carefully scrutinized to determine whether the exemption applies. The Coast Guard, therefore, must consider the facts of a particular situation in making a determination as to the applicability of the statute.

3. Navigation Watches.

There is no specific number of credentialed officers or crewmembers required on an uninspected towing vessel. Watchstanding requirements do, however, prescribe a minimum complement. 46 U.S.C. 8104(d), (g) and (h) require different watchstanding arrangements for the various types of towing vessels and towing operations. See Chapter B5 paragraph A.5.b for related discussion on two-watch arrangements and additional factors.

- a. A 3-watch system is required for the credentialed officers, sailors, coal passers (e.g. wipers), firemen, oilers and watertenders on seagoing towing vessels of 200 GRT or more, on a voyage of 600 nautical miles or more.
- b. A 3-watch system is also required for the sailors and engineering personnel (such as coal passers (e.g. wipers), firemen, oilers, and watertenders), where necessary for the direct control and observation of the engineering plant, on seagoing towing vessels between 100 and 200 GRT on a voyage of 600 nautical miles or more. In this situation the credentialed operators may be divided into a 2-watch system as allowed by 46 CFR 15.705(d).

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- c. Per 46 U.S.C. 8104(g), a 2-watch system is permitted for the credentialed officers and crewmembers (except the coal passers, firemen, oilers, and watertenders) on seagoing uninspected towing vessels of 100 GRT or more when on a voyage less than 600 nautical miles.
- d. Uninspected towing vessels not subject to the Officers' Competency Certificates Convention, 1936, including those not on the high seas (i.e., not operating beyond the boundary line) as well as those seagoing vessels of less than 200 GRT, may be divided into a 2-watch system regardless of the length of the voyage as permitted by 46 CFR 15.705(d).
4. Engineering Workers.
 Considering the above statutes and interpretations the following can be concluded: Certain engine department ratings (e.g., Coal passer, firemen, oilers and watertenders) on towing vessels of 100 GRT or greater must be divided into a 3 watch system at all times. Also, seagoing vessels of 200 GRT or more which employ or engage personnel to perform the duties of a chief engineer or engineer of the watch must employ appropriately credentialed engineers (see 46 U.S.C. 8304).
5. Workhour Limits.
 46 U.S.C. 8104(h) allows credentialed operators working aboard towing vessels subject to the provisions of 46 U.S.C. 8904 (e.g., vessels less than 200 GRT) to work no more than 12 hours in a consecutive 24-hour period. There is no similar maximum workhour limit for the crewmembers and ratings on towing vessels subject to 46 U.S.C. 8904, with some exceptions as follows. Seagoing towing vessels of more than 100 GRT are subject to the provisions of 46 U.S.C. 8104(d) (a credentialed officer or seaman may not be required to work more than 8 hours in one day). However, regardless of the route of the vessel, or work rules agreed to by crewmembers, individually or through collective bargaining, the owner and master (or credentialed operator) are required to provide an adequate and fit watch as per 46 CFR 15.601, 15.705 and 15.1111. Consequently, if the credentialed officers or crewmembers have no relief and are too fatigued to stand an alert watch, a hazardous condition is created and the owner and/or master should not permit the vessel to continue to operate until the situation is remedied.
-
- C. Self-Propelled Vessels 200 GRT Or More.
 Documented vessels of 200 GRT or more operating on the high seas, including commercial fishing industry vessels, are subject to the provisions of 46 U.S.C. 8304. Title 46 USC 8304 considers 'high seas' to mean waters seaward of the Boundary Line. Accordingly, the master, mates and engineers on any vessel subject to 46 U.S.C. 8304 (whether uninspected or recreational) are required to hold a Coast Guard-issued license or MMC officer endorsement to serve in that capacity. Subject vessels are required to have a master (46 CFR 15.805). While the regulations do not explicitly state a minimum number of mates or engineers for these vessels, individuals serving in those capacities must be credentialed or licensed appropriately.

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1. Sample Scales.

The following manning scale is considered appropriate for such vessels:

- | | |
|----------------------------|--|
| 1-Master | *1-Chief Engineer
(Mechanically-Propelled) |
| *1-Licensed Mate | *1-Licensed Assistant Engineer
(Mechanically-Propelled) |
| * Denotes Variables | |

NOTE: See CGMS: Engineer Officer Endorsements on Uninspected Fishing Vessels (R 061640Z DEC 13) and CG-543 Policy Letter 11-11 for relaxed enforcement measures on Uninspected Commercial Fishing Vessels until January 1, 2015 – unless specified otherwise.

2. Variables.

a. Watches.

There are no statutory requirements for watch systems or minimum number of credentialed officers on these vessels, with the exception of certain fish processing vessels or fish tending vessels engaged in the Aleutian trade. It is the master's responsibility to ensure an adequate watch for the safety of the vessel. While there may be individuals who can routinely and safely perform work for periods in excess of 12 consecutive hours, the rigors of watchkeeping at sea greatly increase the likelihood of fatigue beyond such a period. Between 12 and 24 hours of operation there is a gray area in which the OCMI must judge the prudence of the master's decision to sail without a second credentialed officer or licensed individual to implement the watch, based on the specific circumstances.

b. Mates.

If a vessel is operating at sea for extended periods of time it may be assumed that the master of the vessel must, due to normal sleep and body function requirements, relinquish the watch to another crewmember. When this occurs, the person who is assigned the watch becomes the mate and is the person in charge of navigating or maneuvering the vessel. His or her actual status as "mate" does not diminish even if his/her standing orders are to notify the master upon the slightest change of watch conditions which could impact the safety of the vessel. While there is no direct authority by which the Coast Guard can require a subject vessel to carry both a master and a mate in terms of a "manning requirement," if the master of the vessel is found to be too fatigued to stand watch and there is no credentialed mate to assume the duties of officer in charge of the navigation watch, then the master of the vessel could be charged with negligence for failure to maintain an adequate watch. OCMI's should strongly encourage subject vessels of 200 GRT or more operating in excess of 12 hours to have at least two credentialed officers assigned to prevent fatigue. (See Chapters B3 and B5 for additional discussions.) The controlling statute requires only that persons serving as "officers" shall hold a credential endorsed for their positions.

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c. Engineers.

An individual engaged or employed to perform the duties of chief engineer or as an individual in charge of an engineering watch, must hold an appropriately endorsed MMC authoring service as a chief engineer or an assistant engineer, respectively. For mechanically-propelled vessels this is largely predicated upon the particular capabilities of the engineering system and may vary from vessel to vessel. See 46 CFR 15.701, 15.820, and 15.825.

3. Vessels Fishing On Other Than The High Seas.

Motor vessels of any size, regardless of their numbering or documentation, engaged exclusively in fishing on other than the high seas, are not currently subject to any federal manning requirements. Title 46 U.S.C. 12131 does require that a documented vessel be placed under the command of a citizen of the United States; however, unless subject to 46 U.S.C. 8304, this person may be unlicensed.

4. GMDSS And Commercial Fishing Vessels.

Traditionally, commercial fishing vessels have been required to carry the radiotelegraph and radiotelephone equipment, including GMDSS equipment, specified for cargo ships in the Communications Act of 1934 and in the Commission's Rules (see 64 FR 98-296, 26 [February 9, 1999]). However, commercial fishing vessels that are otherwise subject to the SOLAS GMDSS requirements have received a limited, temporary waiver of certain equipment carriage requirements in Sea Areas A1 and A2 (see Waiver of Certain GMDSS Rules Applicable to Fishing Vessels and Small Passenger Vessels, Order, 14 FCC Rcd 528, FCC 98-296 (1998)). The waiver is available only for vessels that remain within the specified communications ranges (A1 and A2), and is not applicable to vessels that travel in Sea Area A3 or beyond. Accordingly, in the absence of an individual exemption, such vessels must be fitted with the full complement of required GMDSS equipment and manned with two licensed GMDSS radio operators.

D. Uninspected Passenger Vessels (<100 GRT) [46 U.S.C. 2101(42)(B)].

Title 46 U.S.C. 8903, and 46 CFR 15.605 require each self-propelled uninspected passenger vessel to be under the "direction and control" of a credentialed individual as prescribed by regulation. In this regard, if a water-skier, or para-sailor is towed for hire, the vessel is considered to be carrying passengers for hire, and the operator of the vessel must be appropriately endorsed. Credentialed masters, mates, or operators of uninspected passenger vessels (OUPV) may serve as person in charge of navigation. Under 46 CFR 10.107, an endorsement for OUPV issued for ocean waters will be limited to near-coastal waters not more than 100 miles offshore from the U.S. and its possessions (See paragraph B.1.b of this Chapter for additional discussion of the definition of "near coastal"). For uninspected passenger vessels of at least 100 GRT, as defined by 46 U.S.C. 2101(42)(A), see Chapter B5.

1. Workhour Limitations.

46 U.S.C. 8104(b) provides that credentialed individuals on oceangoing vessels of not more than 100 GRT "may not be required" to work more than 12 hours in a 24-hour period

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while at sea. Credentialed individuals serving as OUPV may, however, voluntarily work more than 12 hours in a 24-hour period. (See Chapters B3 and B5 for additional discussions.)

2. Adequate Watches.

While an OUPV may work more than 12 hours, he or she must maintain an adequate watch. If the OUPV has no relief and is too fatigued to stand an alert watch, then that individual would be negligent for failure to maintain an adequate watch. While there may be individuals who can routinely and safely perform work for periods in excess of 12 consecutive hours, the rigors of watchkeeping at sea greatly increase the likelihood of fatigue beyond such a period. Between 12 and 24 hours of operation, there is a gray area in which the OCMI must judge the prudence of the credentialed operator's decision to sail without a second credentialed operator, based on the specific circumstances. Charter fishing and dive vessels routinely operating more than 24 consecutive hours with only one credentialed operator present a dangerous situation, raising significant issues of negligence on the part of the OUPV and owner for failure to provide an adequate watch.

3. Enforcement Action.

OCMIs should strongly encourage uninspected passenger vessels operating in excess of 12 hours to have at least two credentialed operators assigned to prevent fatigue. It has been suggested by some operators that a qualified seaman could be left at the helm while the credentialed operator sleeps close by. This is an untenable position. Title 46 U.S.C. 8903 mandates the vessel be operated by a credentialed individual; the Coast Guard does not have the discretion to allow any rating or crewmember to control the vessel without supervision. When a sole credentialed OUPV is assigned to a vessel and is found to have been unfit to maintain vigilance due to fatigue, or allows a rating or crewmember to control the vessel while the OUPV sleeps, the OCMI should consider charging the credentialed operator with negligence, misconduct, or violation of law, as may be appropriate to the specific circumstances.

E. Oceanographic Research Vessels.

Undocumented, uninspected oceanographic research vessels under 200 GRT are not subject to the provisions of 46 U.S.C. 8304 or 46 CFR 15.701. However, if they are of 100 GRT or more, they are subject to 46 U.S.C. 8702 and 8104.

F. Manning Charts.

Figure B7-1 lists typical requirements and the references for citizenship, manning, and watch requirements that apply to uninspected, documented, vessels (including certain yachts). It is not meant to be all-inclusive and should be used as a general guide only. In certain cases STCW and SOLAS will apply to uninspected vessels. See Chapters B2, B3, and B4 for additional guidance.

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Figure B7-1: Manning Requirements And References For Documented Uninspected Vessels (Including Certain Yachts)

Vessel Types	Percentage Of Crew Required To Be A U.S. Citizen Or Alien Lawfully Admitted For Permanent Residency 46 U.S.C. 8103	Crew Required To Hold Merchant Mariner's Document (MMC/MMD) 46 U.S.C. 8701(A)	Percentage Of Deck Crew Required To Be Able Seaman 46 U.S.C. 7312(A-F) 46 U.S.C. 8702	Licensed Operator Required 46 U.S.C. 8901	Licensed Master 46 U.S.C. 8304 46 U.S.C. 8904	Licensed Mates 46 U.S.C. 8304	Licensed Chief Engineer 46 U.S.C. 8304	Licensed Asst. Engineer 46 U.S.C. 8304	Required Watch Divisions 46 U.S.C. 8104
Fishing Vessels (< 200 GRT)	--- ³	NO	---	---	---	---	---	---	---
Fishing Vessels (200 GRT Or >)	--- ³	NO	---	---	YES ⁴	1 ⁴	YES ⁵	1 ⁵	---
Tender Vessels (< 200 GRT)	100% ³	NO ⁴	--- ⁶	---	---	---	---	---	--- ⁶
Tender Vessels (200 GRT – 500 GRT)	100% ³	NO ⁴	--- ⁶	---	YES ⁴	1 ⁴	YES ⁵	1 ⁵	--- ⁶
Processor 1 (< 1,600 GRT)	100% ³	NO	---	---	YES ⁴	1 ⁴	YES ⁵	1 ⁵	---
Processor 2 (1,600 GRT – 5,000 GRT)	100% ³	YES ⁷	50%	---	YES ⁴	1 ⁴	YES ⁵	1 ⁵	2
Salvage Vessel	100%	YES ⁷	65%	NO	YES ⁴	1 ⁴	YES ⁵	1 ⁵	---
Towboats Seagoing (600 NM Or >)	100%	YES ⁷	65%	---	YES	2 ^{4, 11}	YES ⁵	2 ⁵	3 ¹¹
Towboats Seagoing (< 600 NM)	100%	YES ⁷	50%	---	YES	1 ⁴	YES ⁵	1 ⁵	2 ⁹

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(INCLUDING CERTAIN YACHTS)

Figure B7-1: Manning Requirements And References For Documented Uninspected Vessels (Including Certain Yachts) (Con't)

Vessel Types	Percentage Of Crew Required To Be A U.S. Citizen Or Alien Lawfully Admitted For Permanent Residency 46 U.S.C. 8103	Crew Required To Hold Merchant Mariner's Document (MMC/MMD) 46 U.S.C. 8701(A)	Percentage Of Deck Crew Required To Be Able Seaman 46 U.S.C. 7312(A-F) 46 U.S.C. 8702	Licensed Operator Required 46 U.S.C. 8901	Licensed Master 46 U.S.C. 8304 46 U.S.C. 8904	Licensed Mates 46 U.S.C. 8304	Licensed Chief Engineer 46 U.S.C. 8304	Licensed Asst. Engineer 46 U.S.C. 8304	Required Watch Divisions 46 U.S.C. 8104
Towboats Great Lakes	100%	YES ⁷	65%	---	YES ¹⁰	---	---	---	2 ¹⁰
Towboats Inland & W/R	100%	NO	---	---	YES ¹¹	---	---	---	2 ¹¹
Yachts	---	NO	---	---	YES ⁴	1 ⁴	YES ⁵	1 ⁵	---
Uninspected Passenger Vessels	100%	NO	---	YES ¹² <100 GRT [46 U.S.C. 2101(42)(B)]	YES ¹³ ≥100 GRT [46 U.S.C. 2101(42)(A)]	---	---	---	2 ¹² 13
Other Vessels	100%	YES ⁷	65% ⁸	YES	YES ⁴	2 ⁴	YES ⁵	2 ⁵	3 ⁸

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NOTES:

1. Small Fish Processor:
 - (a) no more than 1,600 GRT, entering service before 1/1/88, or
 - (b) 100 GRT or over, entering service after 12/31/87 with no more than 16 people on board primarily employed in the preparation of fish and fish products.
2. Medium Fish Processor:
 - (a) over 1,600 GRT but not more than 5,000 GRT, entering service before 1/1/88, or
 - (b) 100 GRT or over, entering service after 12/31/87 with more than 16 people on board primarily employed in the preparation of fish and fish products.
3. Inside the exclusive economic zone (EEZ): On a fishing, fish processing, or fish tender vessel that is engaged in the fisheries of the EEZ, 75% of the unlicensed seamen must be either U.S. Citizens or aliens lawfully admitted to the U.S. for permanent residence. The remaining 25% may be any other alien allowed to be employed under the Immigration and Nationality Act [8 U.S.C. 1101]. Masters, chief engineers, deck watch officers, engineering watch officers and radio officers must be U.S. citizens. [46 U.S.C. 8103].
4. A person in charge of navigating or maneuvering vessels of 200 GRT or more operating outside of the Boundary Lines must be licensed (credentialed officer) as per 46 U.S.C. 8304. [46 CFR 15.810(c)]

NOTE: See CGMS: Engineer Officer Endorsements on Uninspected Fishing Vessels (R 061640Z DEC 13) and CG-543 Policy Letter 11-11 for relaxed enforcement measures on Uninspected Commercial Fishing Vessels until January 1, 2015 – unless specified otherwise.

5. A person on a seagoing mechanically propelled vessel performing the duties of chief engineer and anyone in charge of an engineering watch must be properly licensed (credentialed officer). [46 CFR 15.820(c) and 15.825(a)]. Title 46 CFR Part 62 and Chapter (B6) are not necessarily applicable to uninspected vessels. However, they may be used as an alternative in cases where safe manning documentation is desired. Alternatively, for uninspected towing vessels to receive safe manning documentation endorsed for Periodically Unattended Machinery Space (PUMS), operators may present the OCMI with a Certificate of Class appropriately endorsed for unattended machinery status or meet NVIC 1-78 (see Chapter B3, Section B.2.d.(2)(b)iii).

NOTE: See CGMS: Engineer Officer Endorsements on Uninspected Fishing Vessels (R 061640Z DEC 13) and CG-543 Policy Letter 11-11 for relaxed enforcement measures on Uninspected Commercial Fishing Vessels until January 1, 2015 – unless specified otherwise.

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6. Fish tender vessels engaged in the Aleutian trade must comply with 46 U.S.C. 8702(b). As a general matter, section 8702(b) requires 65% of the unlicensed deck crew to be ABs, except that this may be reduced to 50% for fish tender vessel engaged in the Aleutian trade. Section 8104(o)(1) requires fish tender vessels of not more than 500 GRT to divide the licensed (credentialed officers) individuals and crewmembers into a 3-watch system. However, Section 8104(o)(2) allows a 2-watch system for fish tender vessels operating or purchased to be used in the trade before September 8, 1990, and entered into service before June 1, 1992. [46 CFR 15.705(e)]
7. Under 46 U.S.C. 8701, with certain exceptions, a merchant mariner's document/credential (MMD/MMC) is required for personnel to be employed on vessels of 100 GRT or more.
8. Vessels not included under the exemptions of 46 U.S.C. 8702(a) must comply with 8702(b). In general, Section 8702(b) requires 65% of the unlicensed deck crew to be ABs for a 3-watch system and 50% for a 2-watch system. Section 8104 determines the applicable watch system. [46 CFR 15.401, and 15.705]
9. 46 U.S.C. 8104(g) allows licensed (credentialed) officers and members of the crew other than coal passers, firemen, oilers, and water tenders to be divided into not less than two watches while at sea. [46 CFR 15.705]
10. 46 U.S.C. 8104(c) stipulates that, on a towing vessel operating on the Great Lakes, a licensed or unlicensed seamen in the deck or engine department may not be required to work more than 8 hours in one day or permitted to work more than 15 hours in any 24-hour period, or more than 36 hours in any 72-hour period, except in an emergency when life or property are endangered. Although a licensed or unlicensed seamen in the deck or engine department cannot be compelled to work more than 8 hours in one day, they may consent to working more than 8 hours in one day so long as they do not work more than 15 hours in any 24-hour period, or more than 36 hours in any 72-hour period, except in an emergency when life or property are endangered. See Chapter B5, paragraph C. on "Required" Vs "Permitted" Workhour Limits. In practice this could result in a two or three watch system for operations greater than 8 hours depending on how require vs. permitted workhour limits are implemented onboard. See paragraph B.3.d of this Chapter for related discussion on towing vessels, not on the high seas, employing a two-watch system.

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11. Subject to exceptions, 46 U.S.C. 8104(h) permits a master or mate (pilot) operating a towing vessel that is at least 26 feet in length measured from end to end over the deck (excluding sheer) to work not more than 12 hours in a consecutive 24 hour period except in an emergency. The Coast Guard interprets this, in conjunction with other provisions of the law, to permit masters or mates (pilots) serving as operators of towing vessels that are not subject to the provisions of the Officers' Competency Certificates Convention, 1936, to be divided into two watches regardless of the length of the voyage (46 CFR 15.705(d)). See Chapter B5 paragraph A.5.b and paragraph B.3.d of this Chapter for related discussion on two-watch arrangements and additional factors.
12. 46 U.S.C. 8903 requires the OUPV to be licensed by the Secretary under prescribed regulations. 46 U.S.C. 8104(b) provides that licensed individuals (credentialed officers) on oceangoing vessels of not more than 100 GRT "may not be required" to work more than 12 hours in a 24-hour period while at sea. Therefore an uninspected passenger vessel operating greater than 12 hours should have a two watch system. If the OUPV has no relief and is too fatigued to stand an alert watch, then that individual would be negligent for failure to maintain an adequate watch. [46 CFR 15.601, 15.605, 15.705 and 15.905]
13. On every uninspected passenger vessel of at least 100 GRT, there must be an individual holding an appropriate license or valid MMC with endorsement as master and mate, depending on watches (see 46 U.S.C. 8104). [46 CFR 15.601, 15.605, 15.705, 15.805, and 15.905]

PART C: SHIPMENT AND SERVICE

FORWARD

Part C [legacy Chapters 18-19] details the laws and regulations pertaining to the shipment and discharge of seamen, including guidance on the structure of merchant mariner credentials and the endorsement equivalents permitted for service on certain U.S. vessels. The information in Part C has been restructured to account for revised regulations, updated Coast Guard forms and should be referenced comprehensively with Parts A and B.

Chapter C1 contains policy and guidance for uniform application of the statutes and regulations that relate to the protection and relief of seamen, including shipment and discharge. Chapter C2 provides supplementary guidance and discussion on the structure of mariner credentials including limitations (i.e. route, tonnage, grade, propulsion power, propulsion mode, and vessel type) and the endorsement equivalents permitted for service on certain U.S. vessels.

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PART C: SHIPMENT AND SERVICE**CHAPTER 1: SHIPMENT AND DISCHARGE OF SEAMEN****A. Laws.**

The laws contained in Title 46 U.S.C., Subtitle II, Part G provide for the protection and relief of seamen, including shipment and discharge.

NOTE: Where appropriate, the term 'seaman' or 'seamen' has been replaced with 'merchant mariner' to align terminology with 46 CFR Subchapter B, Part 14 (Shipment and Discharge of Merchant Mariners) and other Coast Guard regulations. In other cases the terms 'seaman' or 'seamen' have been retained for consistency when referencing a statute in Title 46 U.S.C., Subtitle II (Vessels and Seamen).

B. Background.

In 1979, the Department of Transportation Appropriation Bill prohibited the use of funds for shipping commissioners, and thereafter, masters of U.S. merchant vessels assumed the duties for the shipment and discharge of seamen. NVIC 8-79 was originally published to give masters guidelines for these new duties. However, the recodification of Title 46, United States Code and a multitude of procedural changes made NVIC 8-79 outdated. In keeping with the Coast Guard's responsibility to enforce laws pertaining to seamen Protection and Relief, new guidelines were published in NVIC 1-86 for the use by masters aboard U.S. flag vessels required by law to sign on and discharge merchant mariners. NVIC 1-86 continues to provide a useful framework for completing shipping articles, certificates of discharge, and official logbooks.

C. Compliance With Statutory Requirements.

The shipment and discharge of seamen is controlled by law. Compliance with these laws and the regulations promulgated thereunder is mandatory in the case of seamen who are employed on all United States flag vessels on certain foreign or intercoastal voyages, including vessels serving primarily overseas without returning to any American or foreign port or place (see NVIC 1-86). The rules and regulations contained in 46 CFR Part 14 deal with the shipment and discharge of merchant mariners aboard certain vessels of the United States; Subpart A-General, Subpart B-Shipment of Merchant Mariners, and Subpart C-Discharge of Merchant Mariners. For specific information regarding Oceanographic Research Vessels, reference 46 CFR Part 14, Subpart D. For additional information on official logbooks, including statutory requirements, see Paragraph G below.

D. Coast Guard Address.

Each form or report required to be submitted to the National Maritime Center should be forwarded to the addresses listed in 46 CFR 14.103.

PART C: SHIPMENT AND SERVICE**CHAPTER 1: SHIPMENT AND DISCHARGE OF SEAMEN****E. Shipment Of Merchant Mariners.****1. Production Of Credentials By Merchant Mariners Signing Shipping Articles.**

On engagement for a voyage upon which shipping articles are required, each merchant mariner must present to the master or individual in charge of the vessel every document, certificate, credential, or license required by law for the service the mariner would perform (46 CFR 14.205).

2. Mutilated Credentials.

A mutilated U.S. Merchant Mariner Credential should not be accepted for employment of the seaman. A credential should not be accepted when it has been materially changed in physical appearance or composition including - indistinguishable personal and credential data (including photograph), evidence of tampering or alteration, and damage beyond recognition.

3. Fraudulent Use Of Credentials.

The fraudulent use of Merchant Mariner Credentials breaks down the system which the credentials were intended to serve (e.g., a proper identification of the holder and his/her qualifications). If the fraudulent use of a Merchant Mariner Credential is found, the master or individual in charge of the vessel should not allow the bearer to sign on the shipping articles. The master or individual in charge of the vessel should contact the nearest Officer in Charge, Marine Inspection (OCMI) and report the incident.

4. Contractual Relationship Between Master And Crew.

"Shipping Articles" is the statutory name given to the agreement signed by the members of the crew and the master with respect to a particular voyage or term of employment. Since the laws have certain specific requirements that must be met, the wording of the articles and especially the voyage description must be clear and concise. Compliance with these laws and the regulations promulgated there under are mandatory in the case of merchant mariners who are employed on United States flag vessels on foreign, intercoastal, or coastwise voyages as follows:

- a. 46 CFR 14.201: Voyages upon which shipping articles are required; and,
- b. 46 CFR 14.203: Voyages upon which shipping articles are not required.

If otherwise required by 46 CFR 14.201(b) - a vessel's status as "inspected" or "uninspected" does not necessarily preclude it from these requirements, unless specifically excluded under 46 CFR 14.203.

A voyage is defined by the parties involved and stated in specific terms on the shipping articles. A voyage may be from port to port, port to place, place to place, etc.

PART C: SHIPMENT AND SERVICE**CHAPTER 1: SHIPMENT AND DISCHARGE OF SEAMEN**5. Form Of Shipping Articles.

The content and form of shipping articles must conform to the provisions of 46 CFR 14.207. The Office of Management and Budget approved the updated version of the Shipping Articles, CG-705A (OMB Number: 1625-0006), used to execute shipping articles. The obsolete paper format of these forms has been in use since World War II and was last revised in the early 1980s. The data collected on the updated forms is nearly identical to the previous version; however, the size of the forms has significantly changed to the standard paper size (8.5 x 11 inches) to accommodate modern technology. The Coast Guard will not stock the updated forms in paper format. In accordance with 46 CFR 14.207(b), these forms are available electronically in a .PDF fill-able format at the National Maritime Center's website. Any company that electronically prepares the articles may develop its own software or buy it off the shelf; but, in either of these cases, it must secure approval to use the software for these purposes from the National Maritime Center (46 CFR 14.207(c)).

6. Number And Disposition Of Shipping Articles And Particulars Of Engagement.

See 46 CFR 14.209.

7. Changes To Shipping Articles.

In all cases where there are additions to the shipping articles, such additions must be carefully scrutinized to see that they comply with the law and must be read and explained to the seamen before they sign the articles. Under no circumstances should any changes be made to the shipping articles after signature by the seamen.

8. Signing On Crew Replacements.

If, after the complete crew has been signed on, shipment of replacement seamen becomes necessary for any reason, only seamen who are properly qualified for the positions they are to assume may be employed. The master assumes the responsibility that the replacement seamen are properly qualified. When engaged in foreign voyages, if a desertion or casualty results in the replacement, 46 U.S.C. 10309(a) requires the master to report the transaction immediately to the United States consular officer upon arrival at the first foreign port at which the vessel arrives. Since United States consular officers are not located at every foreign port, the statutory report should be made to a United States consular officer nearest to the first port or place in the foreign country at which the vessel arrives. The report may be made by facsimile or similar correspondence (e.g. e-mail) whereupon an entry should be made in the vessel's official logbook indicating that this report has been made. A copy of the report may then be attached to the shipping articles. The U.S. Department of State has detailed special instructions to consular officers in the Department of State Foreign Affairs Manual (FAM) Volume 7, Section 7 FAM 730-734, which can be found online at <http://www.state.gov/m/a/dir/regs/fam/index.htm>.

9. Employment Of Alien Cadets.

When, as part of the training of the Merchant Marine Cadet Corps of the United States Merchant Marine Academy, alien cadets are assigned to vessels for which a construction or operating differential subsidy has been granted, they shall be excluded from any

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computation of aliens in the crews. The alien cadets assigned must present documentary evidence of their relationship with the academy to the master at the time of signing on the shipping articles. An appropriate notation that such alien cadets are not included in computing the percentage of citizens in the crew should be made by the master in the block provided for entering citizenship information.

10. Posting Of Copy Of Shipping Articles.

See 46 CFR 14.211.

11. Posting The "Provisions" Text.

In accordance with 46 U.S.C. 10303, a copy of the following text must be posted in a conspicuous place in the galley and forecabin: "A seaman shall be served at least 3 meals a day that total at least 3,100 calories, including adequate water and adequate protein, vitamins and minerals in accordance with the United States Recommended Daily Allowances."

F. Discharge Of Merchant Mariners.

1. Completing Entries In Shipping Articles At End Of Voyage.

See 46 CFR 14.309 and Enclosure (1) of NVIC 1-86.

2. Certificate Of Discharge to Merchant Mariners, Form CG-718A.

See 46 CFR 14.307. The prescribed format for a certificate of discharge is the same as the present Certificate of Discharge to Merchant Mariners, Form CG-718A. The Coast Guard will not stock the updated forms in paper format. These forms are available electronically in a .PDF fill-able format at the National Maritime Center's website.

3. Use Of Continuous Discharge Book (CDB).

See 46 CFR 14.305 for continued usage of existing CDBs. Form CG-719A has been discontinued, but may be maintained by a Merchant Mariner.

4. Discharge Of Seamen In A Foreign Port Or Place.

See also 46 CFR 14.303. When a seaman is discharged in a foreign port or place, the master must make the required entries on the Shipping Articles, and on the Certificate of Discharge to Merchant Mariners, Form CG-718A. Upon the request of the master or a mariner, the consular officer shall discharge the mariner in accordance with the requirements of 46 U.S.C. 10318.

5. Discharge Of Seamen In A Foreign Port Or Place, Special Cases.

The U.S. Department of State has detailed special instructions to consular officers in the Department of State Foreign Affairs Manual (FAM) Volume 7, Section 7 FAM 730-734, which can be found online at <http://www.state.gov/m/a/dir/regs/fam/index.htm>.

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- a. When a seaman, incapacitated from service by injury or illness, is on board a vessel and it is impractical for the vessel's master to make a personal appearance before a United States consular officer, the seaman may be sent to the consular officer. The consul will provide care for the seaman and defray the cost of the seaman's maintenance and transportation when the following conditions are met:
 - (1) When the condition of the injured or ill seaman is such that prompt medical attendance is necessary and cannot be furnished shipboard; and
 - (2) The master cannot proceed with the seaman to the consul without risk to the crew, the vessel or the cargo.
- b. When the master cannot appear before the consul in person, the master will provide the consul in writing a full statement of the facts that require the discharge of the seaman, together with a statement of the reasons why the master is unable to appear before the consul. The statement should cover the usual particulars set forth in a discharge and should be accompanied by an account of the wages due with the funds to meet such wages, or (if the cash is not available) with an order for the owner for the amount due.
- c. If the consul considers the statement satisfactory, the seaman may be discharged as if the master were present.
- d. If the consul does not consider the statement satisfactory, and the condition of the seaman permits, the consul will decline to grant the discharge and direct that the seaman be returned to the vessel at its expense.
- e. When the condition of the injured or ill seaman is such that the seaman is incapable of completing the release for discharge at the time of removal from the vessel, the master should complete the master's portion of the Mutual Release and place it with the seaman.
 - (1) If the seaman possesses a Merchant Mariner Credential, the master must complete a Certificate of Discharge, Form CG-718A, and make the proper entries on the ship's articles (46 CFR 14, 303, 14.307, 14.309). Form CG-718A must be retained by the master until the termination of the voyage, at which time it must be delivered to the vessel's owner or agent along with shipping articles. Upon completion and presentation of the Mutual Release to the vessel's owner or agent, the seaman must receive all wages due. Form CG-718A must then be signed by the seaman and the original given to him/her. A copy of Form CG-718A must be forwarded to the National Maritime Center in accordance with 46 CFR 14.311. At this time a notation of the completion of the release should be made on the shipping articles with the Mutual Release attached.
 - (2) If the seaman possesses a Continuous Discharge Book, the master must make the proper entries in the book, on the shipping articles and complete Form CG-718A, which must be retained by the master until the termination of the voyage, at which time it must be delivered to the vessel's owner or agent along with the

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shipping articles (46 CFR 14.307). Upon completion and presentation of a Mutual Release to the vessel's owner or agent, the seaman must receive all wages due. Form CG-718A must then be signed by the seaman and a copy or electronic copy forwarded to the National Maritime Center (NMC-4). At this time a notation of the completion of the release should be made on the shipping articles with the Mutual Release attached. For information on reporting the discharge of merchant mariners see 46 CFR 14.311.

6. Crew Replacements.

When crew vacancies occur, a vessel may continue to be navigated if the vacancies are filled with replacements of the same or higher grade or rating. When vacancies occur for any reason overseas, and U.S. credentialed personnel are not available, 46 U.S.C. 8103(e) permits a non-citizen possessing equivalent licenses, documents and/or qualifications to be employed as a replacement until the vessel's first return to a port at which in the most expeditious manner a replacement who is a citizen of the United States can be obtained. Neither the master nor the Radio Officer can be replaced with non-citizens. The master bears the responsibility to assure such personnel are qualified and, once aboard are trained for their duties, as well as having the ability to communicate in English. Refer to Part B, Chapter 1.I of this Manual for a detailed discussion of "sailing short" and filling vacancies with foreign crewmembers.

7. Reporting Crew Shortage.

- a. 46 U.S.C. 8101 permits a vessel to be navigated without all of the required positions being filled if:
 - (1) Such vacancies occurred without the consent, fault or collusion of the master, owner or any other person interested in the vessel;
 - (2) The master is unable to obtain replacements of the same or higher grade or rating to fill the vacant positions; and
 - (3) It is the judgment of the master that the vessel is sufficiently manned to safely continue the voyage.
- b. In all cases where an inspected vessel, having been deprived of the services of crewmembers and is navigated with either fewer crewmembers on board than the complement for the vessel calls for, or with replacements of lower grade or rating, 46 U.S.C. 8101(e) and 46 CFR 15.725, require the master to report the shortage and explain the cause of it, in writing, to the nearest OCMI. The master need not obtain permission to sail short, but must report the shortage within 12 hours of the vessel's arrival at its destination. No particular form is required to be used in making such a report. Refer to Part B, Chapter 1.I of this Manual for a detailed discussion of "sailing short."

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c. Masters filing the report should:

- (1) Include the name and mariner reference number of the crew who left the vessel;
- (2) State the cause of the shortage and the port or place at which it occurred;
- (3) Certify that no replacements of the same grade or rating were obtainable; and
- (4) State that in his/her judgment the vessel was sufficiently manned.

8. Reporting Change Of Masters.

If there has been a change of masters during the voyage, the relieving master must note the change and the effective date on the face of the shipping articles in the blank space to the left of the section headed "Citizenship Requirements." The date of change noted should concur with any entry in the official logbook pertaining to the change of masters.

9. Number And Disposition Of Particulars Of Discharge Page.

The Particulars of Discharge page for foreign and intercoastal voyages must be legibly and accurately prepared in duplicate and signed by the master and each seaman engaged on a particular voyage. It must be attached to the Shipping Articles and Particulars of Engagement page with copies of the Certificate of Discharge and held by the company. For information on reporting the discharge of merchant mariners see 46 CFR 14.311.

G. Official Logbooks.

1. Laws.

In accordance with 46 U.S.C. 11301, except a vessel on a voyage from a port in the United States to a port in Canada, a vessel of the United States shall have an official logbook if the vessel is:

- a. On a voyage from a port in the United States to a foreign port; or
- b. Of at least 100 GRT and is on a voyage between a port of the United States on the Atlantic Ocean and on the Pacific Ocean.

The official logbook shall be maintained as specified in statute (46 U.S.C. 11301) and regulations (see paragraph G.2). The official logbook should be submitted to the OCMI at the port where the termination of the voyage takes place. It is not to be forwarded to Coast Guard Headquarters. The official logbook should be reviewed by the OCMI in accordance with MSM Volume V, Part B Chapter 9.B. and NVIC 1-86.

NOTE: Section 607 of the Coast Guard Authorization Act of 2010 amended the existing 46 U.S. Code Chapter 113 by adding a new section titled: 11304 – Additional Logbook and Entry Requirements. However, implementing regulations will be necessary to give these amendments full effect.

PART C: SHIPMENT AND SERVICE**CHAPTER 1: SHIPMENT AND DISCHARGE OF SEAMEN****2. Regulations.**

- a. Title 46 U.S.C. 11301-11303 and supporting regulations require most merchant vessels to maintain an official logbook. Specifically 46 CFR Subparts 35.07-5 (Tank Vessels), 78.37-3 (Passenger Vessels), 97.35-3 (Cargo and Miscellaneous Vessels), 109.431 (Mobile Offshore Drilling Units), 131.610 (Offshore Supply Vessels), 122.280 & 185.280 (Small Passenger Vessels), and 196.35-3 (Oceanographic Research Vessels) address the requirements for maintaining official logbooks on board certain vessels. These regulations are applicable to U.S. vessels which operate solely overseas, without returning to the U.S.
- b. Most regulations (see preceding paragraph) provide that, the master or person in charge of a vessel that is not required by 46 U.S.C. 11301 to have an official logbook, shall maintain, on board, an unofficial logbook or record in any form desired for the purposes of making entries therein as required by law or regulations in the subchapter applicable to the vessel. Such logs or records are not filed with the OCMI, but must be kept available for review by a marine inspector for a period of 1 year after the date to which the records refer. Separate records of tests and inspections of fire-fighting equipment must be maintained with the vessel's logs for the period of validity of the vessel's certificate of inspection.

3. Background.

- a. The official logbook is the vehicle through which any statutory and regulatory record keeping requirements are maintained. The official logbook contains information about the voyage, the vessel's crew, drills, and operations conducted during the voyage. Official logbook entries identify all particulars of the voyage, including the name of the ship, official number, port of registry, tonnage, names and merchant mariner credential reference numbers of the master and crew, the nature of the voyage, and class of ship. In addition, it also contains entries for the vessel's drafts, maintenance of watertight integrity of the ship, drills and inspections, crew list and report of character, a summary of laws applicable to logbooks, and miscellaneous entries. In most cases the regulations denote that when a voyage is completed, or after a specified time has elapsed, the master shall file the official logbook containing required entries with the OCMI at or nearest the port where the vessel may be. For vessels which are not engaged in routine voyages (e.g. vessels serving primarily overseas without returning to any American port or place), requests for alternative submittal periods should be arranged with the cognizant OCMI.
- b. The Coast Guard, National Maritime Center, gratuitously furnishes to masters of vessels of the United States the official logbook as Form CG-706B. Form CG-706C has been discontinued. In order to obtain hard copies of the official logbook for use, companies should send a request to the National Maritime Center. An automated request process can be found on the National Maritime Center's website at www.uscg.mil/nmc.

PART C: SHIPMENT AND SERVICE**CHAPTER 1: SHIPMENT AND DISCHARGE OF SEAMEN**4. Character Entry By Master Upon Discharge Of Merchant Mariners.

Upon the discharge of every mariner, the master must enter in the official logbook a report of the conduct, character and qualifications of the person discharged or state that an opinion will not be given.

5. Logbook Entries.

All masters and officers making entries in the official logbook are to be reminded by Marine Inspectors that the book may be prima facie evidence in a court of law and that entries must be made in accordance with 46 U.S.C. 11502 or they may not be admissible evidence of events aboard ship.

H. Deceased, Deserting, And Destitute Seamen.1. Disposition Of Wages And Effects.

- a. The authority for the disposition of the wages and effects of deceased seamen is contained in 46 U.S.C. Chapter 107. The authority for disposition of the wages and effects of deserting seamen is contained in 46 U.S.C. Chapter 115. There are no regulations written specifically addressing this subject. The instructions in this chapter are intended to establish a uniform procedure for their administration.
- b. Certified extracts of the official logbook entry of a deceased or deserting seaman's wages and effects should be distributed to the following:
 - (1) Employer, vessel owner and vessel operating company;
 - (2) Applicable U.S. District Court or U.S. Consulate Officer;
 - (3) Commanding Officer, National Maritime Center (NMC-4); and
 - (4) With the personal effects of the deceased. The master or master's representative is responsible for delivery of the seaman's money, property and wages to a consular officer or to the U.S. District Court of the district in which the voyage begins or ends.
- c. The responsibilities of obtaining certified copies of the logbook and sending them to the proper authorities used to be a duty of the shipping commissioner. The master should inform the local OCMI of the death and the OCMI shall obtain certified copies of the logbook and forward them to the authorities listed in b.(2) and (3) above.

PART C: SHIPMENT AND SERVICE**CHAPTER 1: SHIPMENT AND DISCHARGE OF SEAMEN**2. Deceased Seamen.

The provisions of 46 U.S.C. Chapter 107 apply to the handling of wages and effects of deceased seamen. These are applicable if the seaman had been employed in foreign or intercoastal trade. They do not apply if the seaman had been employed in coastwise trade, or in trade between the U.S. and Canada, the West Indies, or the Republic of Mexico. When 46 U.S.C. Chapter 107 does not apply, the master should turn the deceased seaman's wages and effects over to the shipping company who in turn should deliver them to the official responsible for handling the seaman's estate.

3. Deserting Seamen.

Under 46 U.S.C. 11501, desertion by an "engaged" seaman shall be punished by forfeiture of earned wages, money or property left on board. Disposition of such forfeitures is controlled by 46 U.S.C. 11505. Deserters may be subject to enforcement action such as Suspension and Revocation proceedings, see MSM Volume V, Part C Chapter 4.B.

4. Destitute Seamen.

46 U.S.C. 10318(e) and 11104(a) make provision for assistance to ill, injured, or destitute U.S. seamen by the Department of State. The U.S. Department of State has detailed special instructions to consular officers in the Department of State Foreign Affairs Manual (FAM) Volume 7, Section 7 FAM 700-715.

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PART C: SHIPMENT AND SERVICE

CHAPTER 1: SHIPMENT AND DISCHARGE OF SEAMEN

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USCG Marine Safety Manual, Vol. III: Marine Industry Personnel
PART C: SHIPMENT AND SERVICE
CHAPTER 2: ENDORSEMENT EQUIVALENTS

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PART C: SHIPMENT AND SERVICE**CHAPTER 2: ENDORSEMENT EQUIVALENTS****A. Deck Officer Endorsements.**

Deck officer endorsements may be limited by route, tonnage, and grade level. Credentialed officers may find employment in positions that do not directly correlate with these limitations. The following discussions provide guidance on what is included and not included within the limitations placed on an endorsement.

1. Routes.

Deck officer endorsements, other than towing endorsements, may be issued for the following routes. The routes specified by 46 CFR 11.464, 11.465 and 11.466 for towing endorsements are slightly different but the same concepts apply. (See also Part B, Chapter 3.G of this Manual.)

- a. Oceans.
- b. Near Coastal.
- c. Great Lakes and Inland.
- d. Inland.
- e. Rivers.

The above routes constitute a hierarchy. An officer endorsed at one level may sail on any waters listed below it. For example, an endorsement for Great Lakes and Inland authorizes the holder to sail any river route.

Western Rivers is a unique route applied only to towing vessels. Towing vessel officers may not operate upon Western Rivers unless specifically endorsed for Western Rivers. Towing vessel officers endorsed for only Western Rivers, may not operate on Rivers, other than the Western Rivers. Neither route is subordinate to the other.

2. Tonnage.

A tonnage restriction applies to the tonnage level specified on the endorsement and to any other authorized service. For example, an officer endorsed as master - 500 GRT can sail as a mate but the tonnage limitation is still 500 GRT. In some cases the officer will hold endorsements with different tonnage limitations. An officer could be endorsed as mate - 500 GRT and master - 200 GRT. This mariner could be employed as a mate on a 250 GRT vessel but not as a master on the same vessel. Subject to any other restrictions, a national endorsement with only a GRT restriction is suitable for service on vessels (not otherwise subject to the provisions of STCW) where only a GT ITC is assigned. In this capacity, the GRT restriction may not be less than the assigned GT ITC of the vessel. See Part B, Chapter 3.B of this Manual for discussion on the Impact of International Standards, including the International Convention of Standards of Training, Certification And Watchkeeping For Seafarers (STCW) 1978, as amended, and International Convention on Tonnage Measurement of Ships, 1969 (ITC).

PART C: SHIPMENT AND SERVICE**CHAPTER 2: ENDORSEMENT EQUIVALENTS**3. Grade Level.

An officer endorsement as chief, second, or third mate on ocean or near coastal routes authorizes service as a mate where a specific grade level is not required. In many situations, the conditions of employment are different from those normally associated with the endorsed grade level. For example, a third mate - oceans may be employed as a mate - inland even though the operations of the vessel will probably be very different from those of an oceangoing vessel. The employer must ensure that the officer is familiar with the special requirements of the position and understands the duties and responsibilities of the position. The officer must comply with the regulations (46 CFR 15.405) to become familiar with each vessel's relevant characteristics. See also Part B, Chapter 3.D of this Manual.

4. Uninspected Fishing Industry Vessels.

An officer endorsement as master or mate of inspected vessels may serve as master or mate, respectively, on uninspected fishing industry vessels within the limitations of the credential.

5. Regulatory Equivalents.

Title 46 CFR Part 15, Subpart I, provides specific regulatory equivalencies for deck officer endorsements and guidance for uninspected passenger vessels and towing vessels. Information on the equivalencies for the assistance towing endorsement is contained in 46 CFR 11.482.

6. Officer Endorsements For Mobile Offshore Drilling Units (MODU).

- a. To serve as an Offshore Installation Manager (OIM), a mariner must be specifically endorsed as an OIM. There are five grades of Offshore Installation Manager (OIM) endorsements. An OIM Unrestricted endorsement authorizes service in any position where an OIM is required. The remaining four OIM grades are restricted to service on a specific type of MODU while the MODU is operating as stated on the endorsement. For example, an OIM of Bottom Bearing Units Underway may not serve as the OIM while the unit is on location. See 46 CFR 11.470 and 15.520.
- b. To serve as a Barge Supervisor (BS), a mariner must be specifically endorsed as a BS. To serve as a Ballast Control Operator (BCO), a mariner must be specifically endorsed as a BS or a BCO. See 46 CFR 11.472, 11.474, and 15.520.

B. Engineer Officer Endorsements.

Engineer officer endorsements may be limited by propulsion power [horsepower (hp) or kilowatt (kW)], propulsion mode, route, grade, or type of vessel. Figure A19-1 shows the engineering equivalencies in a graphic format. This table must be interpreted by giving consideration to all limitations that may appear on an endorsement, e.g., a chief engineer of steam vessels of unlimited propulsion power cannot sail as an assistant engineer of any motor vessel; a motor endorsement is required.

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Figure C2-1: Engineering Equivalents

The engineer officer endorsements in the left-hand column qualify for service in a subordinate capacity as indicated by the marked columns without additional, specific, endorsement. In all cases, limitations (horsepower, tonnage, waters, etc.) of the endorsement continue to apply. When serving on a vessel to which STCW applies, the appropriate STCW endorsement must also be held.

	<i>UNLIMITED</i>				<i>LIMITED</i> (lower level)											
	C/E	1 st A/E	2 nd A/E	3 rd A/E	C/E	C/E N/C ⁵	ASST ENG	C/E UFIV	A/E UFIV	DDE UN-LTD	DDE LTD	C/E MOD U	A/E MOD U	C/E OSV	A/E OSV	
<i>UNLIMITED</i>																
C/E	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 st A/E		X	X	X			X		X				X		X	
2 nd A/E			X	X			X		X				X		X	
3 rd A/E				X			X		X				X		X	
<i>LIMITED</i>																
C/E ¹					X	X	X	X	X	X	X			X	X	
C/E NC ^{2,5}						X	X	X	X	X	X			X	X	
Asst. Eng ¹							X		X						X	
C/E UFIV								X	X	X	X					
A/E UFIV									X							
DDE UNLTD ³					X	X	X	X	X	X	X			X	X	
DDE LTD ^{3,4}						X	X	X	X	X	X			X	X	
C/E OSV														X	X	
A/E OSV															X	

NOTES:

- Limited to vessels of not more than 1600 GRT on Oceans, NC, GL; any GRT on inland waters.
- Limited to vessels of not more than 1600 GRT on NC, or GL; any GRT on inland waters.
- Limited to vessels of not more than 500 GRT.
- See 46 CFR 15.915(a)(1).
- The chief engineer (limited near-coastal) endorsement will be phased out and discontinued after March 24, 2019. All engineers endorsed as chief engineer (limited near-coastal) can be upgraded to chief engineer (limited) 1600 GRT without further sea service or testing requirements.

PART C: SHIPMENT AND SERVICE**CHAPTER 2: ENDORSEMENT EQUIVALENTS**

1. Propulsion Power.

A horsepower (hp) or kilowatt (kW) restriction applies to the propulsion power level specified on the endorsement and to any other service unless otherwise authorized. An officer endorsement for chief engineer -3000 hp (2300 kW) can sail as an assistant engineer, but the horsepower limitation is still 3000 hp (2300 kW). In some cases the officer may hold an endorsement with different horsepower limitations for different grades. For example, a mariner could be endorsed as chief engineer - 3000 hp (2300 kW) and assistant engineer - any hp (power rating). This mariner could be employed as an assistant on a vessel of any hp (power rating) but not as chief.
2. Grade Level.

An officer endorsement as first, second or third assistant engineer authorizes service as an assistant engineer where the grade level is not specified. See also Part B, Chapter 3.F of this Manual.
3. Designated Duty Engineer (DDE).

The grade of Designated Duty Engineer (DDE) was created to be the sole engineer on vessels of not more than 500 GRT with a periodically unattended engine room. However, current manning requirements do not require DDEs on any vessel, only chief and assistant engineers. A Designated Duty Engineer (DDE) may serve as a chief or assistant engineer within the limitations in 46 CFR 15.915 and the limitations on the credential. See also Part B, Chapter 3 of this Manual.
4. Regulatory Equivalents.

Title 46 CFR Part 15, Subpart H, provides specific regulatory equivalencies for engineer endorsements in 46 CFR 15.915. See also Part B, Chapter 3 of this Manual.
5. Uninspected Fishing Industry Vessels.

An officer endorsement as chief engineer or assistant engineer of inspected vessels may serve as chief engineer or assistant engineer, respectively, on uninspected fishing industry vessels within the limitations on the credential.
6. Officer Endorsements For Mobile Offshore Drilling Units (MODU).

Upper level engineer officer endorsements authorize service on Mobile Offshore Drilling Units (MODUs) without a specific MODU endorsement. The OCMI issuing the MODU's COI may authorize the substitution of chief or assistant engineer (MODU) for chief or assistant engineer, respectively, on self-propelled or propulsion-assisted surface units, except drillships. The OCMI may also authorize the substitution of assistant engineer (MODU) for assistant engineer on drillships. See 46 CFR 11.540 and 15.520.

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CHAPTER 2: ENDORSEMENT EQUIVALENTS

C. Deck Ratings.

1. Able Seamen.

As provided for in 46 U.S.C. 7306–7311a, there are six classifications authorized for endorsement as able seaman (AB). The AB -Unlimited may sail as an AB on any vessel. An AB - Limited may sail in any AB capacity except AB - Unlimited. An AB - Special may sail as an AB in any capacity except AB - Limited and AB - Unlimited. All other AB ratings are limited to employment as an AB on the specific type of vessel authorized on the document. The AB - Sail is authorized to serve on sail training vessels only. See also Part B, Chapter 4.D of this Manual.

2. Seamen On MODUs.

Unlike the other AB ratings established pursuant to 46 U.S.C. 7306–7311a, AB – MOU (MODU) is not a rating authorized by statute or regulation. The AB – MOU (MODU) endorsements for ratings were issued to address a perceived deficit of seaman qualified for the unique requirements of serving onboard a MODU. However, it is likely that the Coast Guard will work to phase out this endorsement, providing transitional procedures that will allow those currently holding this rating to continue to serve aboard MODUs (see 78 FR 1625-AA16, 247 [December 24, 2013]). In the interim, there are credentials endorsed as AB – MOU (MODU) and Lifeboatman – MOU (MODU). Mariners with these ratings are authorized to serve on mobile offshore drilling units only.

3. Tankermen.

See 46 CFR Part 13 and 15.860.

4. Lifeboatmen.

After 24 March 2014, any MMC endorsed as AB will also be endorsed as lifeboatman or lifeboatman-limited, as appropriate (46 CFR 12.401(d)(2)). Every person assigned duties as a lifeboatman must hold a credential attesting to such proficiency. Persons serving on vessels subject to the STCW Convention must also hold an STCW endorsement in proficiency in survival craft and rescue boats other than fast rescue boats (PSC). Every person assigned duties onboard a vessel that is not required to carry lifeboats and is required to employ a lifeboatman must hold an endorsement as either lifeboatman or lifeboatman-limited. See also Part B, Chapter 4.D of this Manual.

PART C: SHIPMENT AND SERVICE**CHAPTER 2: ENDORSEMENT EQUIVALENTS****D. Engine Ratings.**

There are five distinct Qualified Member of the Engine Department (QMED) ratings, which can be endorsed separately. The ratings are; Fireman/Watertender, Oiler, Junior Engineer, Electrician/Refrigerating Engineer, and Pumpman/Machinist. They do not authorize service in any other rating. For example, a mariner with an endorsement as "Junior Engineer" may not serve as a pumpman for purposes of meeting the manning requirements. However, the COI of some vessels may authorize one rating to be substituted for another. A mariner may obtain all five QMED ratings and be issued an endorsement authorizing service as a QMED - Any Rating. A mariner with this endorsement may fill any engineering rating (46 CFR 12.501(b)).

NOTE: In accordance with 46 CFR 12.501, the Coast Guard will no longer issue original endorsements for deck engineer, deck/engine mechanic, or engineman, or individual endorsements for refrigerating engineer, machinist, electrician, and pumpman. However, a mariner who holds any of these endorsements may continue to renew them as long as he or she is otherwise qualified.

E. International Convention Of Standards Of Training, Certification And Watchkeeping For Seafarers (STCW) 1978, as amended.

1. For Credentialed Officers see Part B, Chapter 3.B.2 of this Manual.
2. For Credentialed Ratings see Part B, Chapter 4.B.1 of this Manual.

F. Trade Restricted Endorsements.

A trade restriction is valid only for the vessel type specified, within the limitations of the endorsement. For example, a mariner endorsed as chief mate (OSV) can only be employed as chief mate on offshore supply vessels.

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ANNEX



Model format for record of hours of work or hours of rest of seafarers¹

Name of ship: _____ IMO number (if any): _____ Flag of ship: _____
 Seafarer (full name): _____ Position / rank: _____
 Month and year: _____ Watchkeeper:² yes no

Page 1 of 2

Record of hours of work/rest³

Please mark periods of work or rest, as applicable, with an X, or using a continuous line or arrow.

COMPLETE THE TABLE ON THE REVERSE SIDE

The following national laws, regulations and/or collective agreements governing limitations on working hours or minimum rest periods apply to this ship:

I agree that this record is an accurate reflection of the hours of work or rest of the seafarer concerned.

Name of master or person authorized by master to sign this record _____

Signature of master or authorized person _____ Signature of seafarer _____

A copy of this record is to be given to the seafarer. This form is subject to examination and endorsement under procedures established by _____
 (name of competent authority)

¹ The terms used in this model table are to appear in the working language or languages of the ship and in English.

² Check / as appropriate.

³ Delete as appropriate.



MINIMUM SAFE MANNING DOCUMENT

Issued under the provision of regulation V/14 of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, as amended
under the authority of the Government of **THE UNITED STATES OF AMERICA**
by **THE UNITED STATES COAST GUARD**

Vessel Name: (From Certificate of Documentation) IMO Number: (If Not Provided Indicate U.S. O.N.)
Distinctive numbers or letters: (Call Sign) Port of Registry: (Hailing Port)
Gross Tonnage: (GRT) (GT ITC) Main Propulsion Power: (Aggregate)(hp) / (Aggregate)(kW)
Type of Vessel: (Primary Service) Periodically Unattended Machinery Space: (YES or NO)
Trading Area: (e.g. Oceans/Unlimited) Operating Company:

In accordance with the principles and guidelines set out in Annex 1 and 2 of IMO Resolution A.1047(27), the vessel named in this document is considered to be safely manned if, when it proceeds to sea, it carries not less than the number and grades/capacities of personnel specified in the table below. When on an 'international voyage', this vessel must be manned with the following licensed and unlicensed personnel, included in which there must be two (2) certificated lifeboatmen [Note: Ref. 46 CFR 15.845], three (3) GMDSS Radio Operators [Note: Ref. Para B3.L], and zero (0) certificated tankerman [Note: Ref. 46 CFR 15.860]:

U.S. License/Rating	STCW Grade/Capacity	Certificate (STCW regulation)	Number of Persons
Master [Note: Ref. Para B3.C & G]	Master on vessels of 500 to 3,000 GT ITC or more	II/2 [Note: Ref. Para B3.B.2.a]	1
Licensed Mate [Note: Ref. Para B3.D & G]	Officer in charge of a navigational watch of vessels over 500 GT ITC	II/1 [Note: Ref. Para B3.B.2.a]	2*
Able Seaman [Note: Ref. Para B4.C & D]	Rating forming part of navigational watch	II/4 [Note: Ref. Para B4.B.1.a]	3*
Chief Engineer (Motor/Unlimited hp) [Note: Ref. Para B3.E]	Chief engineering officer, main propulsion machinery over 3,000 kW	III/2 [Note: Ref. Para B3.B.2.b]	1
Licensed Engineer (Motor/Unlimited hp) [Note: Ref. Para B3.F]	Officer in charge of an engineering watch of vessels over 750kW	III/1 [Note: Ref. Para B3.B.2.b]	2*
Qualified Member of the Engine Department [Note: Ref. Para B4.C & D]	Rating forming part of an engineering watch	III/4 [Note: Ref. Para B4.B.1.b]	---

Special requirements and conditions:

*In accordance with U.S. law, when on a voyage of less than 600 miles, manning may be reduced by one (1) Licensed Mate, one (1) GMDSS Radio Operator, one (1) Licensed Engineer, and one (1) Able Seaman. [Note: Ref. Para B5.A.4.b]

Up to one (1) Ordinary Seamen with an STCW 95 endorsement attesting to "Rating forming part of a navigational watch" may be substituted for one (1) Able Seaman. [Note: Ref. Para B4.B.1.a.(3) & B4.D.1]

[Note: Ref. Para B3.B.2.d.(2)(b) for special requirements and conditions pertaining to the Canadian MPR]

In addition, the vessel may carry xxxx (x) passengers, xxxx (x) other persons in crew, xxxx (x) persons in addition to the crew, and no others. Total persons allowed: xxxxx (xx).

Issued at: (Location of Unit)
Date of Issue:

XXXXXXXX XXXXXX
U.S. Coast Guard
Officer in Charge, Marine Inspection

U.S. Department of
Homeland Security

United States
Coast Guard



Unit Address Block
Unit Address Block
United States Coast Guard

Unit address block
Unit address block
Staff Symbol: (sp)
Unit phone
Unit fax
Unit e-mail

16711 /*Insert Vsl name*

Vessel Operator Address Block

Attn:

Vessel Operator Address

Vessel Operator Address

Subj: SAFE MANNING LETTER (SML) FOR VESSEL NAME,

IMO Number: (If Not Provided Indicate U.S. O.N.)

Dear Port State Control Official:

We are providing this letter as a statement of fact for the referenced vessel regarding U.S. requirements for operation in oceans unrestricted service on foreign/international voyages. This commercial vessel was built / keel laid date¹ on _____, is _____ GRT, _____ GT ITC, (Aggregate) hp, and (Aggregate) kW. The vessel has / has not¹ undergone any major modifications.

The International Convention on Tonnage Measurement of Ships, 1969, came fully into force on 18 July 1994. Under the provisions of this Convention, as supplemented by International Maritime Organization (IMO) Interim Schemes (Resolutions A.494 (XII) and A.541(13)), a vessel meeting certain criteria may retain the gross tonnage assigned under the Flag State's national tonnage system for the purpose of applying requirements of specific international conventions.²

The U.S. Coast Guard acknowledges that the above mentioned vessel is currently of United States registry and qualifies for retaining national gross tonnage under the provisions of the International Convention on Tonnage Measurement of Ships, 1969, as supplemented by IMO Interim Schemes. The national gross tonnage assigned to this vessel under the United States Regulatory Measurement System is _____ GRT.²

Based on its size and current service the vessel is not required to be inspected and certificated by the U.S. Coast Guard under the laws of the United States, nor does / do¹ SOLAS and MARPOL³ require certification, including issuance of a Safe Manning Document.

To assist Port State Authorities and others that may have an interest in the operations of the subject vessel the below information is provided regarding what requirements do apply to the vessel.

The vessel must comply fully with the Flag State requirements for an uninspected vessel of this tonnage and service. Those requirements are contained in Title 46 Code of U.S. Federal

¹ Delete as appropriate.

² Delete if interim tonnage scheme does not apply. See NVIC 11-93 (series)

³ Delete as appropriate for vessels ≥ 400 GT ITC

ANNEX-4

CH-1

Regulations, Subchapter C (Part 24-26). Although no inspection certificate is required to be issued attesting to compliance, the U. S. Coast Guard does have authority to do boarding's of the vessel for the purpose of verification. A properly displayed and valid Uninspected Towing Vessel decal shows this vessel has voluntarily been examined and meets current applicable Flag State requirements.⁴ The vessel may engage in unrestricted international voyages provided that it is properly manned with credentialed crew as noted below:

1 Master (Oceans / Near Coastal⁴) of not more than _____ GRT, _____ GT ITC.

1 Mate, OICNW (Oceans / Near Coastal⁴) of not more than _____ GRT, _____ GT ITC.

1 Chief Engineer, of _____ hp, _____ kW.*

1 Assistant Engineer, of _____ hp, _____ kW.*

2 Able-bodied Seaman (without STCW endorsements)

*A Designated Duty Engineer (Unlimited / Limited⁵) may be substituted for a Chief Engineer and/or an Assistant Engineer on vessels below 500 GRT.

Periodically Unattended Machinery Space⁶: YES / NO⁴

STCW requires any rating forming part of any watch in a manned engine room or designated to perform duties in a periodically unmanned engine room powered by main propulsion machinery of 750 kW or more to meet certification requirements. If the vessel employs a crewmember in this capacity that crewmember should have an MMC with appropriate STCW endorsements. Deck ratings are not required to meet STCW if aboard a vessel of less than 500 GT ITC.

The vessel should maintain records indicating the work and rest hours of all credentialed watch standers.

We respectfully request that Port State Officials accept this letter as evidence of the Flag State's requirements for the vessel to operate in unrestricted service. Questions concerning this letter may be directed to address and/or e-mail listed at the top of this letter.

Sincerely,

XXXXXXXXXXXXXXXXXXXX

Insert rank, U. S. Coast Guard
Officer in Charge, Marine Inspection

⁴ Delete as appropriate.

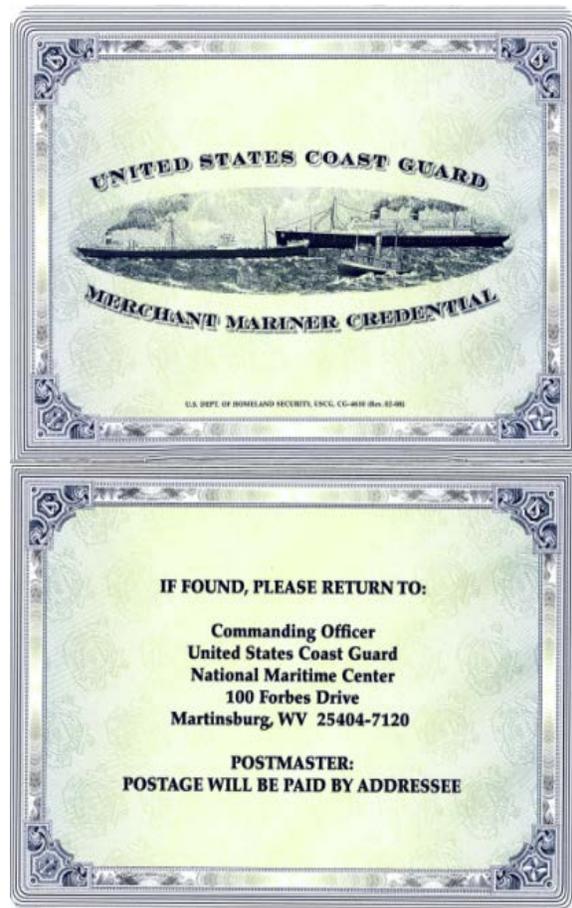
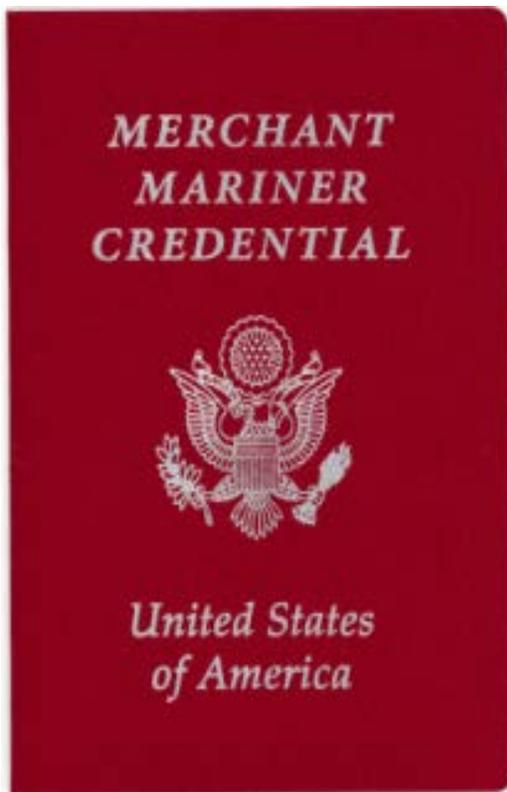
⁵ Delete as appropriate. If limited, specify hp/kW limitation.

⁶ PUMS Endorsement only necessary for voyages to Canada.

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Sample: Consolidated Merchant Mariner Credential (MMC).

The merchant mariner credential or MMC combines the individual merchant mariner's document, license, and certificate of registry enumerated in 46 U.S.C. subtitle II part E as well as the STCW endorsement into a single credential that serves as the mariner's qualification document, certificate of identification, and certificate of service. The MMC has the look and feel of a passport, however, it does NOT substitute for a passport. The MMC retains much of the traditional artwork found on the current credentials. The document is resistant to chemical solvents, oxidants, acids and alkali. [Due to scanning constraints, the color depicted here is not a true color match.]



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Personal Data.

Personal information on the data page adheres to the requirements of ICAO 9303, Machine Readable Travel Documents, and includes all data elements required by the Seafarers' Identity Documents Convention (Revised) (ILO-185). The MMC is not valid without signature of the holder. Mariners should sign the document on receipt.



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Credential Data.

This is an example of the data pages that will be printed on a credential with both International (STCW) and Domestic (Officer and Rating) Endorsements. Each page contains the reference number of the mariner and the serial number of the booklet.

This page contains the International (STCW) Endorsement.

<p>This credential has been issued under the provisions of the International Convention on Standards of Training Certification on Watchkeeping for Seafarers 1978, as amended.</p> <p>The lawful holder of this Credential as endorsed below, is entitled under Title 46 (Shipping) U.S. Code to serve in the capacity or capacities specified, Subject to any limitations indicated.</p> <p>The Government of the United States of America certifies that</p> <p style="text-align: center;">JOHN THE MERCHANTMARINER, JR.</p> <p>has been duly qualified in accordance with the provisions of regulation(s)</p> <p style="text-align: center;">II/2; II/4; VI/2</p> <p>of the above Convention, as amended, and has been found competent to perform the following functions, at the levels specified, subject to any limitation indicated until 01-OCT-2013.</p>							
Ref Num 2500020	Serial Num 000333						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">CAPACITY</th> <th style="text-align: left;">LIMITATIONS APPLYING (IF ANY)</th> </tr> </thead> <tbody> <tr> <td>Chief Mate</td> <td>Valid for service on vessels operating in the global maritime distress & safety system (GMDSS).</td> </tr> <tr> <td>Proficient in the use of survival craft</td> <td>Valid for service in fast rescue boats.</td> </tr> </tbody> </table> <p>Issue Date: 01-OCT-2008 Expiration Date: 01-OCT-2013 Issue Port: Martinsburg, WV</p> <p style="text-align: center;">_____ D.C. STALFORD, CAPT, USCG</p>		CAPACITY	LIMITATIONS APPLYING (IF ANY)	Chief Mate	Valid for service on vessels operating in the global maritime distress & safety system (GMDSS).	Proficient in the use of survival craft	Valid for service in fast rescue boats.
CAPACITY	LIMITATIONS APPLYING (IF ANY)						
Chief Mate	Valid for service on vessels operating in the global maritime distress & safety system (GMDSS).						
Proficient in the use of survival craft	Valid for service in fast rescue boats.						
Ref Num 2500020	Serial Num 000333						

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Credential Data (Con't).

This page contains the Domestic (Officer and Rating) Endorsements. Domestic Officer and Rating Endorsements data are printed in terms of Capacities and Limitations much like the current STCW Certificates.

The lawful holder of this Credential,	
JOHN THE MERCHANTMARINER, III	
as endorsed below, is entitled under Title 46 (Shipping) U.S. Code to serve in the capacity or capacities specified (Domestic Only), subject to any limitations indicated.	
<u>CAPACITY</u>	<u>LIMITATIONS APPLYING (IF ANY)</u>
Master	Limited to Inland Waters
First Class Pilot	Limited to Inland Waters of Southeast AK from Dixon entrance to Yakutat Bay, excluding Klawock Inlet, West Coast Prince of Wales, South Coast Prince of Wales, Sumner Strait West, Gastineau Channel, and Glacier Bay; also first class pilot of any gross tons upon the waters of Kachemak Bay/Homer, Seldovia Bay/Seldovia, Seal Rocks to Bligh Island and Port of Valdez; also first class pilot of steam or motor vessels of any gross tons upon Washington main ship channels between Point Roberts and Vita Rocks and the terminal port of Bellingham.
Ref Num 2500020	Serial Num 000333

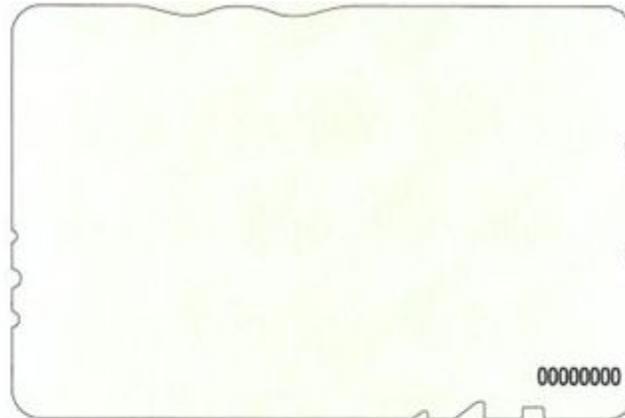
<u>CAPACITY</u>	<u>LIMITATIONS APPLYING (IF ANY)</u>
Any Unlic Rating in Deck Dept.	Except Able Seaman
Lifeboatman	Valid for use on Fast Rescue Boats
Wiper	
Stewards department (FH)	
Issue Date: 01-OCT-2008	Expiration Date: 01-OCT-2013
Issue Port: Martinsburg, WV	
D.C. STALFORD, CAPT, USCG	
Ref Num 2500020	Serial Num 000333

NOTE: In accordance with 46 U.S.C. 7110, each holder of a license issued under Part E shall display, within 48 hours after employment on a vessel for which that license is required, the license in a conspicuous place on the vessel. Mariners holding a consolidated MMC should display the officer endorsement page of the MMC, which is equivalent to the previous officer license. As a security measure, mariners have been advised not to post their credentials while the vessel is visiting foreign ports.

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Endorsement Label.

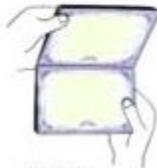
When a mariner applies for an endorsement or raise in grade, the NMC will produce a label to be added to the MMC. The label will be mailed to the mariner with instructions for placement in the credential booklet. Once the label has been adhered to the booklet, it cannot be removed without damaging the document.



Merchant Mariner Credential (MMC) Endorsement

Read all of the information below before inserting label(s) in your MMC.

- This label is the endorsement to your MMC, however, it is not valid unless properly placed within your MMC.
- Please review the information contained on the endorsement label for accuracy, before placing in credential booklet. If, after reviewing the label, you have questions, concerns or need additional information, DO NOT insert in booklet. Instead, please call: (888)427-5662 or send an e-mail to: iasknmc@uscg.mil
- The instructions below must be followed carefully to ensure that this label becomes a permanent part of your MMC. Labels cannot be repositioned and you should not make any attempt to remove it once it is affixed to your MMC.
- If more than one label has been enclosed you must place them in the order indicated by the sequence number next to label beginning with 1.



Step 1: Open the MMC booklet to the first blank page. It may be the front or back of a page.



Step 2: Place the opened credential on a hard surface with the page numbers at the bottom (toward you).



Step 3: Carefully remove label from the carrier sheet.



Step 4: Center the label within the page border, with the label inventory number at the lower right corner. Do not obstruct the page number.



Step 5: Press firmly onto the credential page.

- If you make a mistake while inserting this endorsement call (888) 427-5662 or send an e-mail to: iasknmc@uscg.mil to request further instruction.

00000000

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Sample: Medical Certificate.

The medical certificate is a document issued by the Coast Guard under 46 CFR part 10, subpart C that serves as proof that the seafarer meets the medical and physical standards for merchant mariners. Because of differing legal requirements, each medical certificate will carry three expiration dates. One will be the expiration date for STCW (see 46 CFR 10.301(b)(1)), a second expiration date will be for First Class Pilotage under 46 CFR 15.812 (see 46 CFR 10.301(b)(2)), and the third will be the expiration date for all other purposes (see 46 CFR 10.301(b)(3)). A valid medical certificate must be carried when serving under the authority of a MMC [46 CFR 15.401(d); 15.403(a); 15.403(b)(1)]. The medical certificate will note any operational limitations on the mariner's authority to serve. The mariner is responsible for complying with any operational limitations or restrictions on the medical certificate.

United States Coast Guard
Medical Certificate

Seafarer Name: **MERCHANTMARINER, VERSION7534 NATIONAL**
Gender: **Male** Nationality: **US** DOB: **01-OCT-1991**
STCW Exp Date: **01-OCT-2014** National Exp Date: **01-OCT-2014** Pilot Exp Date: **01-OCT-2014**


JEFFREY P. NOVOTNY, CAPT, USCG
OFFICER IN CHARGE, MARINE INSPECTION

SEAFARER SIGNATURE

CN 0000051 Ref Num: 3506824

v DO NOT DETACH v

^ DO NOT DETACH ^

* Mariner is free from any medical condition likely to be aggravated by service at sea or to render the seafarer unfit for such service or to endanger the health of other persons on board.

* Date of Examination:	01-OCT-2013
* Last Color Vision Test Date:	07-AUG-2013
* Hearing IAW STCW A-I/9:	Y
* Visual Acuity IAW STCW A-I/9:	Y
* Color Vision IAW STCW A-I/9:	Y
* Fit for Look-out duties:	Y
* Unaided Hearing Satisfactory:	Y
* Identification Checked at Examination:	Y

* **No Limitations/Restrictions: N**
1) Corrective lenses required

CN 0000051 Ref Num: 3506824

CG-4610A (Rev. 05/12)

* If “No Limitations/Restrictions” is “N” then a Limitation/Restriction should be listed. If “Y” then there are no Limitations/Restrictions.

ANNEX**NOTE: Medical Certificate, Transitional Provisions.**

Issuance of medical certificates to mariners holding only national endorsements will be phased-in over a five-year period. Beginning January 24, 2014, mariners with only national endorsements will be issued a medical certificate during their first credential transaction that requires a medical review. By January 24, 2019, all mariners holding only national endorsements should have a valid medical certificate. In most cases, mariners who have a credential with only national endorsements issued before January 24, 2014 won't have a separate medical certificate until their next credential transaction that requires a medical review. This can be verified by checking the issuance date on the MMC Personal Data page.

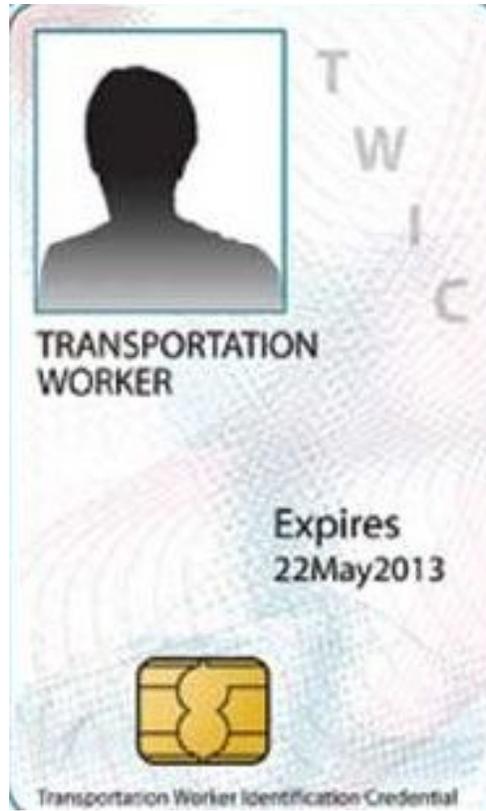
First Class Pilots and those acting as pilot under the provisions of 15.812 are required to have an annual physical examination which meets the requirements of 46 CFR Part 10, Subpart C; however, they are only issued medical certificates every 2 years. The issuance of medical certificates to First Class Pilots will be phased-in over an 18 month period. Beginning January 24, 2014, First Class Pilots will be issued a medical certificate during their first credential transaction which requires a medical review OR at their first required submission of physical examination in accordance with 46 CFR 11.709(b) whichever is earlier. After July 24, 2015, all Pilots should have a valid medical certificate, however those national mariners holding but not acting under the authority of the pilot endorsement need only meet the 5 year phase-in allowance of the previous paragraph.

Full implementation of the medical certificate requirements is based on the following schedule;

STCW:	Beginning on or about 1 January 2014, mariners with current STCW endorsements will be issued a medical certificate. This process should be completed by 1 January 2015. The issuance of STCW endorsements subsequent to that date will include a medical certificate. Once issued, a valid medical certificate must be carried when serving under the authority of a MMC. All persons employed or engaged onboard vessels to which STCW applies must hold a valid medical certificate by 1 January 2017.
National endorsement only:	Once issued, a valid medical certificate must be carried when serving under the authority of a MMC. All mariners serving under their national endorsement should have a medical certificate no later than January 24, 2019.
First Class Pilot (service):	Once issued, a valid medical certificate must be carried when serving under the authority of their pilotage endorsement. All mariners serving under the authority of a pilotage endorsement should have a medical certificate by July 24, 2015.

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Sample: Transportation Worker Identification Credential (TWIC).



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Sample: Document of Continuity.

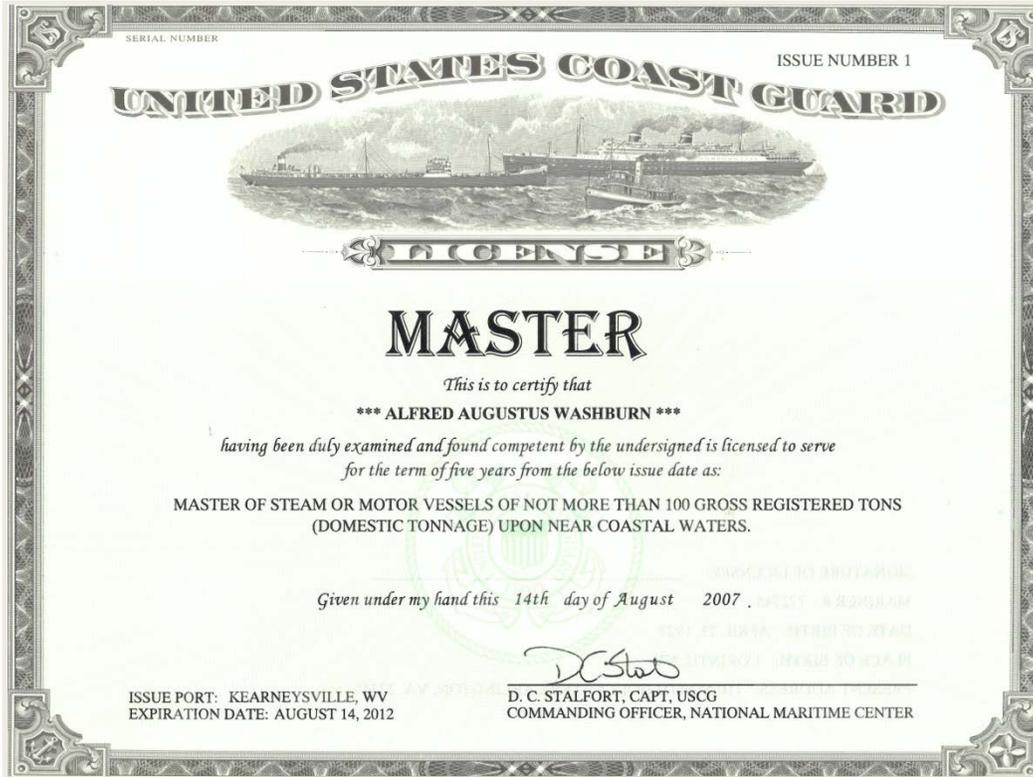
When a mariner makes application to place any/all endorsements into continuity status they will be issued a Document of Continuity. Like the MMC, this document will consolidate all Capacities and Limitations being placed into continuity status. The Document of Continuity will have no expiration date. A document of continuity does not entitle an individual to serve as a merchant mariner.

UNITED STATES COAST GUARD	
	
MERCHANT MARINER DOCUMENT OF CONTINUITY	
<i>This is to certify that</i>	
*** MARINER FNAME, MNAME, LNAME, SUFFIX ***	
<i>has been authorized to hold the following capacities and limitations for Continuity purposes only. Service under the authority of this document is prohibited.</i>	
CAPACITY	LIMITATIONS APPLYING (IF ANY)
Master	Limited to Inland Waters
First Class Pilot	Limited to Inland Waters of Southeast AK from Dixon entrance to Yakutat Bay, excluding Klawock Inlet, West Coast Prince of Wales, South Coast Prince of Wales, Sumner Strait West, Gastineau Channel, and Glacier Bay.
Lifeboatman	Valid for use on Fast Rescue Boats
ISSUE DATE: 21-OCT-2008	<i>(auto-penned signature)</i>
ISSUE PORT: MARTINSBURG, WV	D.C. STALFORD, CAPT, USCG COMMANDING OFFICER, NATIONAL MARITIME CENTER

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Sample: Legacy merchant mariner licenses (MML), merchant mariner documents (MMD), certificates of registry (COR), and STCW certificates [which ceased to be valid after April 9, 2014].

Merchant Mariner License (MML).



Sample: Merchant Mariner Document (MMD) [Front and Back].



CG-2838 (Rev 09/02) Issued by U.S. Coast Guard

Hair	Eyes	WT	HT	Mariner #
BRO	BRO	190	5-07	2500020

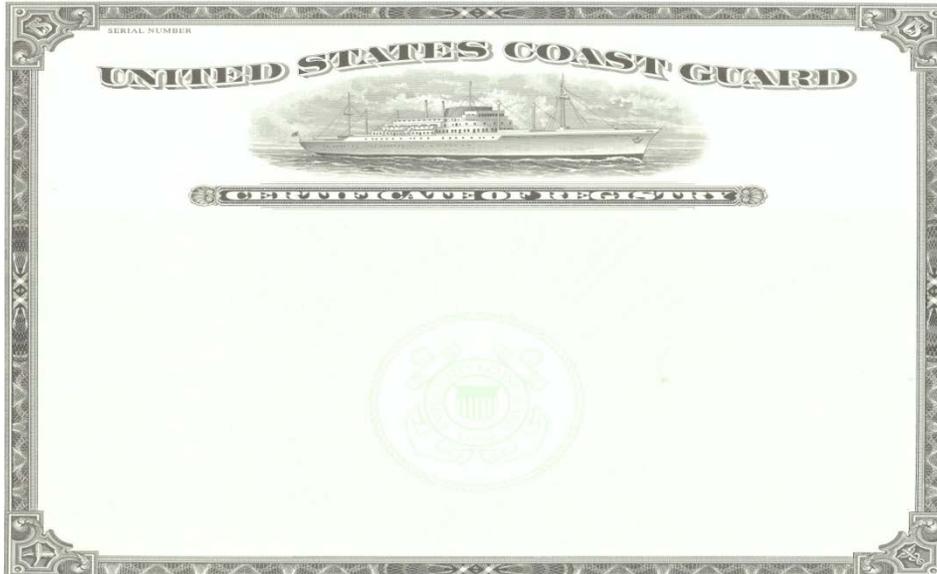
WIPER, SD(FH), CORRECTIVE LENSES REQUIRED, ANY UNLIC DK RATING INCL AB

Issued: 06/06/2008
 Expires: 06/06/2013

Issued by: MARTINSBURG, WV
 D. C. STALFORT
 CAPT, USCG
 Commanding Officer, National Maritime Center

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Sample: Certificate of Registry [Format].



Sample: STCW Certificate.

 United States of America		
<p>ENDORSEMENT ATTESTING THE ISSUE OF A CERTIFICATE UNDER THE PROVISIONS OF THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED.</p> <p>The Government of the United States of America certifies that Certificate No. _____ has been issued to Alfred A. Washburn, who has been found duly qualified in accordance with the provisions of regulation(s) A-WAV of the above Convention, to serve in the capacity or capacities listed below, subject to any limitations indicated until 2 June 2008. This endorsement is not valid unless accompanied by a valid U.S. Merchant Mariner's license or document.</p>		
FUNCTION	LEVEL	LIMITATIONS APPLYING (IF ANY)
<p>The lawful holder of this endorsement may serve in the following capacity or capacities specified.</p>		
CAPACITY	LIMITATIONS APPLYING (IF ANY)	
Waiver	Medical Waiver: Required to wear a hearing aid and have spare batteries on board.	
		
<p>Endorsement No.: issued on June 2, 2005 at Nmc.</p>		
<p>April 23, 1927 Date of birth of certificate holder</p>	<p>NMCAS</p>	<p>Signature of duly authorized official</p>
<p>Signature of certificate holder</p>		<p>C. PARKER Name of duly authorized official</p>
<p>DEPT. OF HOMELAND SECURITY, USCG, CG-5611 (01-05)</p>		
<p>ALFRED AUGUSTUS WASHBURN</p>		

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Sample: Merchant Mariner Certificate Suitable for Framing.

Mariners who hold or have held a valid Merchant Mariner Credential (MMC) can download, save, print and display a merchant mariner certificate suitable for framing. The certificate, which is to be used for display purposes only, is not authorized as a substitute for a valid MMC and will not substitute for the MMC where the requirement to post a credential exists.



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Common COI/SMD Sample Endorsements.

(Noninclusive.)

Periodically unattended or minimally attended machinery space. [MSM Vol. III, Part B, Chapter 6]

APPROVED FOR [PERIODICALLY UNATTENDED*] OR [MINIMALLY ATTENDED*] MACHINERY SPACE OPERATION. THIS APPROVAL AND THE MINIMUM MANNING LEVEL SPECIFIED ON THIS CERTIFICATE OF INSPECTION ARE CONTINGENT UPON THE PROPER OPERATION OF THE AUTOMATED CONTROL/AUTOMATED MONITORING/AUTOMATED MACHINERY MANAGEMENT SYSTEM(S). ANY MAJOR ALTERATION OR FAILURE MUST BE REPORTED IMMEDIATELY TO THE NEAREST OCMI.

*Delete as appropriate

Unattended machinery space, Subchapter L only. [500 GT ITC and above, endorsement aligns with SOLAS II-1/46.3 and IMO Resolution A.1047(27) for international voyages]

[APPROVED FOR PERIODICALLY UNATTENDED MACHINERY SPACE OPERATION. THIS APPROVAL AND*] THE SPECIFIED MANNING LEVEL IS CONTINGENT UPON THE PROPER OPERATION OF THE ENGINEERING AUTOMATED CONTROL/MONITORING SYSTEMS. ANY MAJOR ALTERATION OR ESSENTIAL COMPONENT FAILURE MUST BE REPORTED IMMEDIATELY TO THE COGNIZANT OCMI.

*Delete as appropriate

Unattended machinery space, Subchapter L only. [Less than 500 GT ITC or for domestic voyages]

THE SPECIFIED MANNING LEVEL IS CONTINGENT UPON THE PROPER OPERATION OF THE ENGINEERING AUTOMATED CONTROL/MONITORING SYSTEMS. ANY MAJOR ALTERATION OR ESSENTIAL COMPONENT FAILURE MUST BE REPORTED IMMEDIATELY TO THE COGNIZANT OCMI.

Foreign near-coastal voyages. [MSM Vol. III, Part B, Chapter 3]

VESSEL LIMITED TO A NEAR COASTAL ROUTE WHEN OFFICERS HOLD NEAR COASTAL ENDORSEMENTS AND STCW CERTIFICATES. A NEAR COASTAL ROUTE IS THE LESSER OF 200 NM FROM SHORE OR THE DISTANCE AS DEFINED BY THE LOCAL COUNTRY WHERE THE VESSEL IS OPERATING.

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Canadian Marine Personnel Regulations. [MSM Vol. III, Part B, Chapter 3]

CHIEF ENGINEER, ASSISTANT ENGINEERS, OR DESIGNATED DUTY ENGINEERS NOT REQUIRED OTHER THAN ON VOYAGES TO CANADA IN ACCORDANCE WITH DIVISION 4 OF THE CANADIAN MARINE PERSONNEL REGULATIONS.

Offshore supply vessels (OSV) and Mobile Offshore Drilling Units (MODU) foreign crew waiver. [MSM Vol. III, Part B, Chapter 1]

WHEN OPERATING FROM A FOREIGN PORT, NOT ON U.S. WATERS, FOREIGN NATIONALS WITH VALID STCW CERTIFICATES, ISSUED BY A COUNTRY DEEMED BY THE IMO TO BE GIVING FULL AND COMPLETE EFFECT TO THE STCW CONVENTION, AS AMENDED, MAY SERVE AS AN OFFICER WITHOUT ADDITIONAL ENDORSEMENT, PROVIDED THE MASTER ADHERES TO TITLE 46, CODE OF FEDERAL REGULATIONS (CFR) 15.720(D). THE MASTER OF THE VESSEL MUST BE A U.S. CITIZEN, DULY CERTIFICATED BY THE UNITED STATES.

THIS ENDORSEMENT ESTABLISHES CONFORMITY WITH THE SAFE MANNING REQUIREMENTS OF THE UNITED STATES PERTAINING TO 46 CFR 15.720(B) IN FULL CONSIDERATION OF THE GUIDING PRINCIPLES FOR PORT STATE CONTROL (APPENDIX 11, IMO RESOLUTION 1052(27), AS REVISED).

Multi-Service (Certificated) Offshore Supply Vessels. [MSM Vol. III, Part B, Chapter 1]

VESSEL IS MULTI-CERTIFICATED AS FREIGHT VESSEL, OFFSHORE SUPPLY VESSEL AND INDUSTRIAL VESSEL. VESSEL MUST CONFORM AT ALL TIMES TO THE MOST STRINGENT DESIGN AND EQUIPMENT STANDARDS OF THE APPLICABLE RULES AND REGULATIONS, INCLUDING SOLAS, REGARDLESS OF WHICH SERVICE THE VESSEL IS IN. VARIATIONS FROM STANDARD OPERATING DETAILS AND MANNING ARE DEPICTED BELOW BASED ON SERVICE THAT THE VESSEL IS ACTUALLY ENGAGED IN. CHANGES IN SERVICE SHALL BE LOGGED IN THE VESSEL'S OFFICIAL LOG BOOK.

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Permissive crewing. [MSM Vol. II, Section A, Chapter 3]

Where a vessel owner/operator voluntarily elects to crew a barge not otherwise required to be crewed, the vessel's Route Permitted and Conditions of Operation section of the COI should be endorsed:

****PERMISSIVELY MANNED****

PERMISSIVE MANNING AUTHORIZED PROVIDED RESTRICTIONS ON THE CURRENT LOAD LINE CERTIFICATE ARE MET. THE VESSEL MAY CARRY [##] PERSONS AS MAINTENANCE PERSONS WITH NO DUTIES CONNECTED WITH THE NAVIGATION OF THE VESSEL.

On seagoing barges over 100 GRT, the endorsement should include the statement:

ALL MAINTENANCE PERSONS MUST POSSESS MERCHANT MARINER CERTIFICATES, AND A MINIMUM OF 75 PERCENT OF THOSE PERSONS ABOARD MUST BE U.S. CITIZENS.

This endorsement may be further modified to limit the route on which personnel may be aboard based upon load line, lifesaving equipment, or other relevant factors.

Specially Trained Ordinary Seamen (STCW). [MSM Vol. III, Part B, Chapter 4]

UP TO TWO ORDINARY SEAMEN WITH A STCW CERTIFICATE ENDORSED FOR REGULATION II/4 'RATING FORMING PART OF A NAVIGATION WATCH' MAY BE SUBSTITUTED FOR TWO ABLE SEAMEN WITHOUT FURTHER ENDORSEMENT AS ABLE SEAFARER-DECK II/5.

Specially Trained Ordinary Seamen (Domestic). [MSM Vol. III, Part B, Chapters 2, 4, 6]

UP TO TWO ORDINARY SEAMEN MAY BE SUBSTITUTED FOR TWO ABLE SEAMEN. UNLICENSED SEAMEN PERFORMING NAVIGATIONAL WATCH KEEPING DUTIES MUST POSSESS MERCHANT MARINERS CREDENTIALS ENDORSED AS ABLE SEAMAN OR ORDINARY SEAMAN WITH A LETTER OF QUALIFICATION AND SPECIAL TRAINING AS PROVIDED IN NAVIGATION INSPECTION CIRCULAR 3-83.

ANNEX**Deck and Engine Maintenance-Person Endorsements.** [MSM Vol. III, Part B, Chapters 4]

ENGINE MAINTENANCE-PERSONS MUST EACH HOLD A QMED ENDORSEMENT AS JUNIOR ENGINEER, DECK ENGINE MECHANIC, OILER, OR ENGINEMAN AND AN STCW ENDORSEMENT ATTESTING TO 'RATING FORMING PART OF AN ENGINEERING WATCH'. WHEN CARRYING REFRIGERATED UNITS, ONE OF THE TWO ENGINE MAINTENANCE PERSONS MUST HOLD AN ENDORSEMENT AS A REFRIGERATION ENGINEER OR AS AN ELECTRICIAN.

THREE OF SIX MAINTENANCE-PERSONNEL SHALL HOLD QUALIFIED MEMBER ENGINE DEPARTMENT RATINGS WITH ENDORSEMENTS AS EITHER JUNIOR ENGINEERS OR OILERS. THE OTHER THREE MAINTENANCE-PERSONNEL SHALL HOLD ABLE SEAMEN ENDORSEMENTS.

Maintenance Department Endorsement. [MSM Vol. III, Part B, Chapters 4]

THE ABOVE MANNING IS CONTINGENT UPON THE UTILIZATION OF A MAINTENANCE DEPARTMENT AS INDICATED IN THE VESSEL'S OPERATING MANUAL. ANY SUBSTANTIAL CHANGE IN THE OPERATION OF THIS DEPARTMENT MUST, PRIOR TO IMPLEMENTATION, BE REPORTED TO THE OCFI WHO ISSUED THE VESSEL'S CERTIFICATE OF INSPECTION.

Small Passenger Vessels and Passenger-Carrying Barges. [MSM Vol. III, Part B, Chapter 2]

IF THE VESSEL IS AWAY FROM THE DOCK, OR PASSENGERS ARE ON BOARD OR HAVE ACCESS TO THE VESSEL FOR A PERIOD EXCEEDING 12 HOURS IN A 24 HOUR PERIOD AN ALTERNATE CREW SHALL BE PROVIDED.

Oil Spill Response Barges. [MSM Vol. III, Part B, Chapter 2]

WHEN TRANSFERRING RECOVERED OILY LIQUIDS OR OIL TO OR FROM ANOTHER VESSEL OR FACILITY, A TANKERMAN-PERSON-IN-CHARGE SHALL BE PROVIDED.

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*****DO NOT USE. NO LONGER AUTHORIZED FOR USE.*****

International Convention On Tonnage Measurement Of Ships, 1969 (ITC). [MSM Vol. III, Part B, Chapters 3]

ALL LICENSED INDIVIDUALS MUST HOLD LICENSES AUTHORIZING SERVICE ON VESSELS OF A TONNAGE AT LEAST EQUAL TO THE VESSEL'S U.S. REGULATORY TONNAGE AS INDICATED ON THIS CERTIFICATE OF INSPECTION AS PROVIDED FOR IN IMO RESOLUTION A.540(XIII).

*****DO NOT USE. NO LONGER AUTHORIZED FOR USE.*****
