U. S. Coast Guard
Marine Safety Office
Portland, Maine

Small Passenger Vessel Guide

U.S. Department of Transportation
United States Coast Guard

Commanding Officer
United States Coast Guard
Marine Safety Office

103 Commercial Street
Portland, ME 04101-4726
Staff Symbol: Prevention
Phone: (207) 780-3681
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LETTER OF INTRODUCTION

16MAR01

Dear Small Passenger Vessel Operator:

The 2001 edition of the Small Passenger Vessel Guide was prepared by the Prevention Department to help you understand the laws, regulations and policies that apply to inspected small passenger vessels. This book has proven to be a very valuable guide by those who have used it and would suitably complement your other nautical publications on board your vessel.

Thank you for your continued commitment to safety and the marine environment. Through continued partnership between government and industry, I am confident that the Small Passenger Vessel fleet in Maine and New Hampshire will continue to meet and exceed the excellent safety record you have been known for. I look forward to meeting you at this year's seminar.

Sincerely,

Roy A. Nash

ROY A. NASH
Commander, U. S. Coast Guard
Officer in Charge, Marine Inspections

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USE OF THIS GUIDE

This guide is intended as a summary of the regulations affecting passenger vessels of less than 100 gross tons. It is intended to interpret and explain the regulations, not duplicate them. Owners and operators should rely on the regulations themselves, not this guide, to ensure that their vessels meet all the applicable requirements.

REVISION TO SMALL PASSENGER REGULATIONS

The Coast Guard has adopted as a final rule, with some changes, the interim Small Passenger Vessel regulations published in the Federal Register on January 10, 1996. The Small Passenger Vessels are now grouped into two categories: Subchapter " T" (46CFR parts 175-185) and Subchapter " K" (46CFR parts 114-122). Although changes were made to every section of these regulations, in some cases existing vessels may continue to comply with the old regulations. Owners and operators should review this guide and the new regulations carefully to determine what regulations apply to their vessel.

At the beginning of each section of this guide, any new regulations which do affect existing vessels are identified. The remaining information in each section applies to both new and existing vessels, unless otherwise specified. Be advised that new installations on existing vessels must generally meet the new regulations.

NEW REGULATIONS

Citations for new regulations are printed in **bold type**. For example:
Steering system regulations are found in 46 CFR 182.30/**182.610/119.600**.
This indicates that steering gear requirements are found in the old Subchapter T regulations at 46 CFR 182.30, in the new Subchapter T regulations at 46 CFR **182.610**, and the Subchapter K regulations in **46 CFR 119.600**.

SUBCHAPTER K

New vessels, less than 100 gross tons which are certificated for over 150 passengers or which have overnight accommodations for 50 or more passengers must comply with the requirements of **Subchapter K (46 CFR 114-122)**. Additional requirements in Parts 72 and 76 of Subchapter H and applicable parts of Subchapter F, Marine Engineering, and Subchapter J, Electrical Engineering, apply to the inspection of a " K" vessel. Existing vessels may continue to comply with the old " T" regulations except where otherwise specified in the overview of Subchapter K at the end of this guide.

NEW VESSEL DEFINITION

For both subchapter T and K, the definition of a NEW VESSEL is a vessel:

(1) the initial construction of which began on or after March 11, 1996,

(2) which was issued an initial COI on or after September 11, 1996

(3) which underwent a major conversion that was initiated on or after March 11, 1996, or

(4) which underwent a major conversion that was completed and for which an amended COI was issued on or after September 11, 1996.

An EXISTING VESSEL is a vessel which is not a new vessel

UNDERSTANDING LAWS AND REGULATIONS WHICH APPLY TO SMALL PASSENGER VESSELS

Although "plain language" is the best way to describe vessel standards, our explanation of requirements or standards will often include law or regulation cites as references. Using legal references is not meant as a bureaucratic response but only to properly identify the source of the requirement.

It is important to be familiar with legal references. The following explanation of "USC's" and "CFR's" is offered to help understand these references.

LAWS AND STATUTES

All laws enacted by Congress during the course of a year are published in chronological order in a volume known as the United States Statutes at Large. The United States Code (USC) is a consolidation and compilation of these laws organized by subject (title) in 50 volumes. Statutes pertaining to vessels are grouped in Title 46 entitled "Shipping" which is further divided into chapters by vessel type or subject. For example, Chapter 35 in Title 46, United States Code, is titled "Carriage of Passengers" and is abbreviated 46 USC Chapter 35. The specific statute that requires small passenger vessels to be inspected is found in Title 46 United States Code 3301 or simply 46 USC 3301.

REGULATIONS

Laws often give only general requirements of the intent of Congress. Specific standards or requirements are generally implemented and enforced by prescribing regulations. Regulations like the Statutes are grouped by subject in Titles and are published in the Code of Federal Regulations which is revised annually. Commercial Vessel Safety regulations are published in Titles 33 (Navigation) and 46 (Shipping) which provide detailed guidance for the design and operation of inspected vessels and establish minimum requirements for uninspected vessels. These titles are divided by Chapters (Chapter I is U.S. Coast Guard) and further divided into Subchapters by vessel type or operation. Most regulations covering small passenger vessels (passenger vessels under 100 gross tons) are in 46 CFR 175-185, Subchapter T and 46 CFR 114-122, Subchapter K.

ADDITIONAL REGULATIONS

Subchapter A, (46 CFR Parts 1-9) Procedures Applicable to the Public: Contains requirements for casualty investigations and license suspension and revocation procedures, appeal rights, boundary lines, etc.

Subchapter B, (46 CFR Parts 10-15) Merchant Marine Officers and Seaman: Contains personnel licensing and certification procedures.

Subchapter C, (46 CFR Parts 24-28) Uninspected Vessels: Applies to motor propelled recreational vessels, non-recreational vessels carrying six or less passengers and vessels less than 15 GT carrying freight for hire. Also contains commercial fishing vessel regulations.

Subchapter D, (46 CFR Parts 30-40) Tank Vessel standards: Applies to all vessels carrying combustible or flammable liquid cargo in bulk.

Subchapter E, (CFR Parts 41-46) Loadline: Applies to vessels over 79 feet in length engaged in international voyages which were built after July 21, 1968.

Subchapter F, (46 CFR Parts 50-64) Marine Engineering: Contains standards and requirements for boilers, pressure vessels, (such as air whistle tank), piping, and welding, etc.

Subchapter G, (46 CFR Parts 66-69) Documentation and Admeasurement: Contains procedures for marking, documentation and measurement of all vessel types.

Subchapter H, (46 CFR 70-89) Passenger Vessels: Contains structural fire protection requirements in 46 CFR Part 72.05. Also applies to existing small passenger vessels carrying more than 150 passengers.

Subchapter I, (46 CFR Parts 90-106) Freight Vessels: Applies in part to small passenger vessels carrying freight for hire.

Subchapter J, (46 CFR Parts 110-139) Electrical Regulations: May be referenced for larger T-boats.

Subchapter K, (46 CFR 114-122), Small passenger vessels carrying more than 150 passengers or with overnight accommodations for more than 49 passengers.

Subchapter Q, (46 CFR Parts 159-165) Equipment Specifications and Approvals: Contains standards for lifesaving and other equipment.

Subchapter S, (46 CFR Parts 170-174) Stability and Subdivision: Contains requirements for T-Boats and K-Boats.

Subchapter T, (46 CFR Parts 175-185) Passenger vessels less than 100 gross tons, carrying not more than 150 passengers or with overnight accommodations for not more than 49 passengers.

Subchapter W, (46 CFR Part 199) Lifesaving Appliances and Arrangements: Contains requirements for lifesaving systems for certain inspected vessels.

Title 33 CFR, Parts 151-165, Navigation and Navigable Waters: Contains pollution prevention requirements.

Title 49 CFR, Parts 171,172, & 176, Dangerous Cargo Regulations: Applies to vessels carrying dangerous cargo, such as dynamite.

ORDERING INFORMATION FOR REGULATIONS

SALES

The Government Printing Office (GPO) processes all sales and distribution of the CFR. For payment by credit card, call (202) 512-1800, M-F, 8 a.m. to 4 p.m. e.s.t or fax your order to (202) 512-2233, 24 hours a day. For payment by check, write to the Superintendent of Documents, Attn: New Orders, P.O. Box 371954, Pittsburgh, PA 15250-7954. For GPO Customer Service call (202) 512-1803.

ELECTRONIC SERVICES

The full text of the Code of Federal Regulations, The United States Government Manual, the Federal Register, Public Laws, Weekly Compilation of Presidential Documents and the Privacy Act Compilation are available in electronic format at www.access.gpo.gov/nara (" GPO Access"). For more information, contact Electronic Information Dissemination Services, U.S. Government Printing Office, phone (202) 512-1530, or 888-293-6498 (toll free). E-mail, gpoaccess@gpo.gov.

PASSENGER DEFINITION

46 USC 2101(21) defines "passenger" as an individual carried on the vessel except:

1. The owner or an individual representative of the owner or in case of a vessl under charter, an individual charterer or individual representative of the charter;

2. the master; or

3. a member of the crew who is engaged in the business of the vessel who has not contributed consideration for carriage and who is paid for onboard services.

46 USC 2101(21a) defines "passenger for hire" as: "A passenger for whom consideration is contributed as a condition of carriage on the vessel, whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person having an interest in the vessel."

The act further defines "consideration" as: "An economic benefit, inducement, right, or profit including pecuniary payment accruing to an individual, person, or entity, but not including a voluntary sharing of the actual expenses of the voyage, by monetary contribution or donation of fuel, food, beverage, or other supplies."

NAVIGATION AND VESSEL INSPECTION CIRCULARS (NVIC's)

Navigation and Vessel Inspection Circulars (NVIC's) are a means of publishing Coast Guard policy, instructions, and guidance on specific commercial vessel issues. They are used to clarify and augment commercial vessel safety laws and regulations. NVICs relevant to small passenger vessels are listed below:

INFORMATION ON SUBSCRIPTION AND ORDERING BACK ISSUES OF NAVIGATION AND VESSEL INSPECTION CIRCULARS

Current calendar year NVIC's are available through the U.S. Government Printing Office. The annual subscription fee is $23.00. Make all checks or money orders payable to " Superintendent of Documents, Government Printing Office."

Orders should be mailed to: Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20590-0001

The National Technical Information Service will sell individual copies of the NVIC's. Call 1-800-553-6847 for pricing. Orders can be mailed to:

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

or to order via E-mail 24 hours a day:
orders@ntis.fedworld.gov

The NTIS Web site is: http://www.ntis.gov

NVIC's may also be found on the Coast Guard's Web Site at:

http://www.uscg.mil/

COMMERCIAL INSPECTION USER FEES

Under the Omnibus Budget Reconciliation Act of 1990, the Coast Guard is required to establish and collect user fees for its services relating to the inspection and

examination of U.S. and foreign commercial vessels, to include small passenger vessels. The effective date for collecting user fees was 01 May 1995.

The Coast Guard has established a vessel user fee anniversary date and fee amount, for each existing vessel. The annual inspection fees are payable each year on or before the vessel's Certification of Inspection date. If the vessel has a valid COI, inspection services will continue to include reinspections, hull examinations, damage surveys/repair check and deficiency follow-up inspections regardless of the vessel's payment status. When service is requested, we will verify the vessel's payment status and advise you of any outstanding fees. If services are provided before payment is received, civil penalty action will be initiated.

However, we will accept as evidence of payment a copy of a check, money order, etc. and receipt for express mail or other proof of mailing as acceptable evidence of payment. For more information regarding the user fee payment process, vessel owners can call 1-800-941-3337.

Annual vessel inspection fees must be mailed directly to Nations Bank at the following address:

USCG Inspection Fees
P.O. Box 105663
Atlanta, GA 30348-5663

CERTIFICATE OF DOCUMENTATION AND VESSEL ADMEASUREMENT

The rules regulating the documentation and measurement of vessels are found in 46 CFR Subchapter G. In brief, these regulations require that any vessel of at least 5 net tons which engages in the fisheries, Great Lakes, or coastwise trade, unless specifically exempted, must be documented. A Certificate of Documentation (COD) serves as evidence of vessel nationality and permits a vessel to be subject to preferred mortgages.

A tonnage determination is required before a vessel may be documented as a vessel of the United States. Tonnage's are determined by the physical measurement of a vessel (Convention, Standard, and Dual Measurement Systems) or by application of a formula based on the vessel's dimensions provided by the owner (Simplified Measurement System). Simplified measurement under 46 CFR 69.205 presently applies to domestically operated commercial vessels less then 79 feet in length overall, to barges of any length, and to pleasure vessels of any length whether or not engaged in international voyages.

Applications for simplified measurement may be submitted as part of the vessel documentation application process at the vessel's intended port of documentation.

Any vessel of at least five net tons which engages in **fisheries** on the navigable waters of the Unites States or in the Exclusive Economic Zone (EEZ) or **coastwise trade** must have a COD bearing a valid endorsement appropriate for the activity in which engaged.

The person in command of a documented vessel must have on board that vessel the ORIGINAL COD currently in effect for that vessel and must produce it upon demand of any person acting in an official public capacity.

There are severe penalties, including in some cases forfeiture of the vessel, for fraudulent application, fraudulent use of a document, alteration of a document, and other violations of Subchapter G.

FOR FURTHER INFORMATION: U. S. Coast Guard Documentation Offices throughout the country have been consolidated into one facility located in Martinsburg, West Virginia. This office can be reached at the following address and telephone number:

National Vessel Documentation Center
2039 Stonewall Jackson Drive
Falling Waters, WV 25419-9502
telephone 1-800-799-8362 or 304-271-2400 fax 304-271-2405

CERTIFICATE OF INSPECTION

A Certificate of Inspection (COI) is required for all commercial vessels that carry more than six passengers for hire and for all chartered vessels less than 100 gross tons, even when a crew is not provided by the owner if they carry thirteen (13) or more passengers.

APPLICATION FOR INSPECTION

An Application for Inspection must be made before new construction or conversion, and to obtain or renew a Certificate of Inspection. At the start of the inspection, the old COI is removed from the vessel until the inspection is completed and a new certificate issued. An application for inspection, form CG-3752, must be completely filled out by the vessel's owner or agent at least 30 days before an inspection for certification (46 CFR 176.01-10/176.105/115.105). The application is not required for dry-dock or reinspection. A sample Application for Inspection is enclosed (see enclosure (10)).

PERIOD OF VALIDITY

All Certificates of Inspection for small passenger vessels are now issued for a period of five years per 46 CFR 176.107/115.107. In the past, COI's were issued for three years only for vessels not more than 65 feet in length. Larger T-boats were issued one year certificates. Annual reinspections will continue to be conducted on all passenger vessels.

INFORMATION ON THE CERTIFICATE OF INSPECTION

It is important that all information on your COI be accurate and up-to-date. You should thoroughly review your COI and completely understand the conditions of operation and any limitations. If any modifications to the vessel or any change in the conditions or route of operation are planned, the OCMI must be notified to evaluate the effect these changes may have on the vessel's certificability and/or suitability for route and service.

POSTING OF CERTIFICATES OF INSPECTION

Each page of the Certificate of Inspection must be framed under glass or other transparent material and posted in a conspicuous place so as to be available for passengers to view (46 CFR 176.01-40/176.302/115.302). In instances where this is impractical, the Certificate may simply be kept onboard. For vessels in this zone, only tank and freight barges not having deckhouses, and open dory-style T-boats are exempt from this requirement. The vessel's stability letter must also be posted (see stability section).

INSPECTION STICKER

Owners and operators are reminded of the requirements of 46 CFR 176.01-45/46 CFR 176.310/115.310, which prohibit the operation of the vessel without a " Certificate

Expiration Date" sticker. If for some reason you do not have one of these stickers, please contact MSO Portland to obtain one. The purpose of the sticker is to increase public awareness of vessel inspection requirements and to encourage the public to favor vessels that meet these requirements. The sticker is a glossy orange, blue and white decal with the expiration date of the Certificate of Inspection punched out.

CERTIFICATED SMALL PASSENGER VESSELS OPERATING WITH 6 OR LESS PASSENGERS

As specified by **46 CFR 176.114/115.114**, an inspected small passenger vessel may operate as an uninspected passenger, freight vessel or fishing vessel only if authorized on the COI, or with the specific authorization by the cognizant OCMI.

PURPOSE AND SCOPE OF INSPECTION

The purpose of the Inspection for Certification is to verify compliance with all applicable regulations and to evaluate the safety of the vessel's hull structure and equipment for the duration of the certificate. The inspection encompasses not only hull integrity but also equipment inspection and operational testing of the engines, steering, and other vital systems.

REQUIREMENTS ISSUED AFTER INSPECTION (" 835's")

At the completion of an Inspection for Certification, reinspection, or dry-dock examination, a Marine Inspector may issue requirements for vessel repairs, equipment replacement, or testing, etc., to the vessel owner or operator. These requirements are generally issued on a self-carbon pad, form CG-835, which are commonly referred to as " 835's" .

An 835 requirement is an outstanding deficiency to the vessel's Certificate of Inspection and will allow the vessel to operate until the items are corrected. CG-835's will generally not be issued for lifesaving, fire protection, or other serious safety deficiencies. These deficiencies will result in the withholding of the COI or if practicable, a modification to the vessel's route and conditions of operations until corrected.

The owner/operator must ensure that these requirements are completed by the date indicated at the inspection. Before the expiration, contact must be made with MSO Portland or the appropriate field office either by telephone or letter to report that the requirements have been completed. Requests for extensions must be in writing, be made well ahead of the " due date" , and will only be granted for reasons outside the operator's control.

Although most owner/operator's are conscientious enough to promptly comply with 835's, there have been cases where an owner/operator's license was suspended by an Administrative Law Judge for not completing repairs issued by a Marine Inspector. Other possible results of non-compliance are civil penalties or revocation of a Certificate of Inspection.

OMB No. 2115-0517

CERTIFICATION DATE : SELF EXPLANATORY

EXPIRATION DATE : (1)

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Certificate of Inspection

VESSEL NAME THE NAME OF THE VESSEL EXACTLY AS IT APPEARS ON THE VESSEL'S OFFICIAL PAPERS	OFFICIAL NUMBER (2)	CALL SIGN (3)	SERVICE (4)		
HOME PORT AS STATED IN VESSEL'S DOCUMENTS OR PORT OF PRINCIPLE OPERATION IF UNDOCUMENTED	HULL MATERIAL (5)	HORSEPOWER (6)	PROPULSION (7)		
PLACE BUILT AS STATED IN VESSEL'S OFFICIAL DOCUMENTS OR PREVIOUS CERTIFICATES	DATE BUILT (8)	GROSS TONS (9)	NET TONS (9)	DWT N/A	LENGTH (10)

OWNER	OPERATOR
OWNER'S NAME AND ADDRESS AS STATED IN THE VESSEL'S DOCUMENTS OR AS STATED BY THE OWNER.	THE NAME(S) AND ADDRESS OF THE COMPANY OR PERSONS WHO ARE RESPONSIBLE FOR OPERATING AND MAINTAINING THE VESSEL IN ACCORDANCE WITH THE STATUTES AND REGULATIONS.

THIS VESSEL MUST BE MANNED WITH THE FOLLOWING LICENSED AND UNLICENSED PERSONNEL, INCLUDED IN WHICH THERE MUST BE _____ CERTIFICATED LIFEBOATMEN AND _____ CERTIFICATED TANKERMAN. NOT APPLICABLE FOR "T" BOATS

(11) MASTER	____ MASTER & 1ST CLASS PILOT	____ ABLE SEAMEN	____ CHIEF ENGINEER	____ FIREMEN-WATERTENDERS
____ CHIEFMATE	____ _____ CLASS PILOT	____ ORDINARY SEAMEN	____ 1ST ASST. ENGINEER	____ OILERS
____ 2ND MATE	____ RADIO OFFICER(S)	(11) DECKHANDS	____ 2ND ASST. ENGINEER	____ _____
____ (11) MATES	____ (11) OPERATOR(S)	____ _____	____ _____ ENG'RS.	____ _____

IN ADDITION, THIS VESSEL MAY CARRY ____(12)____ PASSENGERS, ____(12)____ OTHER PERSONS IN CREW, _____ PERSONS IN ADDITION TO CREW, AND _____. TOTAL PERSONS ALLOWED: (12)

ROUTE PERMITTED AND CONDITIONS OF OPERATION:

THE MAJOR DESIGNATED ROUTE SUCH AS "OCEANS", "COASTWISE", "LIMITED COASTWISE", "LAKES, BAYS AND SOUNDS", ETC. IS STATED IN THIS SECTION. ANY LIMITATIONS IMPOSED OR EXTENSIONS GRANTED WILL ALSO BE DESCRIBED BY BODIES OF WATER, GEOGRAPHICAL POINTS, DISTANCES FROM GEOGRAPHICAL POINTS, DISTANCES FROM LAND, ETC. NOTATIONS REGARDING CONDITIONS OF OPERATION, THE NUMBER OF REQUIRED CREWMEMBERS, LENGTH OF RUNS, DAYLIGHT OPERATION, ETC. WILL ALSO BE NOTED IN THIS SECTION.

(1) EXPIRATION DATE FOR "T" AND "K" VESSELS IS 5 YEARS FROM THE DATE OF COMPLETION OF THE INSPECTION FOR CERTIFICATION.
(2) OFFICIAL NUMBER OR STATE NUMBER IS ENTERED
(3) THE OFFICIAL CALL SIGN OF THE VESSEL
(4) THE AUTHORIZED SERVICE OR USE SUCH AS "PASSENGER" OR "FERRY"
(5) THE MATERIAL USED FOR CONSTRUCTION OF THE HULL (WOOD, STEEL, FRP, ALUMINUM)
(6) THE TOTAL HORSEPOWER AS INDICATED BY THE NAMEPLATE OR ENGINE MANUFACTURER
(7) TYPE OF PROPULSION SUCH AS "MOTOR", "SAIL", "AUXILIARY SAIL", "NON-SELF PROPELLED", OR "OTHER".
(8) AS STATED IN THE VESSEL"S DOCUMENTS OR PREVIOUS CERTIFICATES. IN THE ABSENCE OF THIS INFORMATION, AS STATED BY THE OWNER

WITH THIS INSPECTION HAVING BEEN COMPLETED AT CITY AND STATE ON _____, THIS VESSEL IS CERTIFIED BY THE OFFICER IN CHARGE, MARINE INSPECTION, PORTLAND, MAINE, TO BE IN ALL RESPECTS IN CONFORMITY WITH THE APPLICABLE VESSEL INSPECTION LAWS AND THE RULES AND REGULATIONS PRESCRIBED THEREUNDER.

PERIODIC REINSPECTIONS		
DATE	ZONE	SIGNATURE

THIS CERTIFICATE ISSUED BY:

_____
OFFICER IN CHARGE, MARINE INSPECTION

_____
INSPECTION ZONE

DEPT. OF TRANSP., USCG, CG-841 (Rev. 3-85)
PREVIOUS EDITIONS ARE OBSOLETE

SN 7530-00-FO1-0378

(9) GROSS TONS AND NET TONS AS THEY APPEAR IN THE VESSEL'S DOCUMENTS, ROUNDED OFF TO THE NEAREST WHOLE NUMBER.
(10) THE LENGTH OF THE VESSEL IS THE "REGISTERED LENGTH" AND MAY BE DIFFERENT THAN THE LENGTH SHOWN ON THE VESSEL'S DOCUMENT.
(11) THE REQUIRED NUMBER OF OPERATORS (OR MASTERS UNDER THE NEW LICENSING REGULATIONS), MATES AND DECKHANDS WILL BE ENTERED FOR 24-HOUR OPERATIONS. ANY REDUCTIONS IN REQUIRED MANNING WILL BE SPECIFIED UNDER "ROUTE PERMITTED AND CONDITIONS OF OPERATION."
(12) THE TOTAL NUMBER OF PASSENGERS PERMITTED WILL BE ENTERED, ANY ADDITIONAL CREWMEMBERS, AND THE TOTAL PERSONS ALLOWED. THE TOTAL PERSONS ALLOWED IS THE TOTAL OF ALL CREWMEMBERS, PASSENGERS AND ALL OTHER PERSONS PERMITTED BY THE OCMI. THE NUMBER FOR TOTAL PERSONS SHALL NOT BE EXCEEDED IN THE CARRIAGE OF AN ALTERNATE CREW.

THE FOLLOWING INFORMATION WILL NORMALLY BE FOUND ON THIS PAGE OF THE CERTIFICATE:

STABILITY
THE DATE AND ZONE WHERE THE STABILITY LETTER WAS ISSUED.

LIFESAVING EQUIPMENT
ALL REQUIRED LIFESAVING EQUIPMENT (LIFEFLOATS, LIFERAFTS, PFDs, RING BUOYS, SURVIVAL SUITS, ETC.) WILL BE INCLUDED IN THIS SECTION. ANY PRIMARY LIFESAVING EQUIPMENT IN EXCESS OF THE REQUIRED EQUIPMENT WILL ALSO BE LISTED SHOWING ACTUAL CAPACITY.

FIRE FIGHTING EQUIPMENT
THE LENGTH OF HOSE REQUIRED, FIRE AXES AND PUMPS WILL BE ENTERED.

FIXED EXTINGUISHING SYSTEMS
THE SPACES TO BE EQUIPPED WITH FIXED FIRE EXTINGUISHING SYSTEMS, THE TYPE OF AGENT (CO2, HALON, ETC.) AND THE CAPACITY OF THE SYSTEM.

FIRE EXTINGUISHERS - HAND PORTABLE AND SEMI-PORTABLE
THE NUMBERS, TYPES AND SIZES OF REQUIRED FIRE EXTINGUISHERS (2-B-I, 1-B-II, ETC), AND ANY SEMIPORTABLE EXTINGUISHERS PERMITTED AS EQUIVALENTS. UNITS IN EXCESS OF THE REQUIRED NUMBER WILL NOT BE NOTED.

CERTIFICATE AMENDMENTS
ANY AMENDMENTS MADE TO THE CERTIFICATE WILL BE NOTED.

*** END ***

NEW REQUIREMENTS All passenger vessels are required to perform a stability test to determine the safe passenger load. The only exception to this policy is for vessels certificated for not more than 49 passengers, limited to operating 1 mile from land, on a Lakes, Bays, and Sounds route, daylight hours only.

Stability requirements are found in 46 CFR 170-171 of the old regulations, and 46 CFR 178 of the new regulations. Although the procedures for determining stability have not changed, additional types of vessels are now required by regulation to conduct stability tests. Although existing vessels may continue to comply with the old regulations, long-standing local OCMI policy has required stability tests for the vessels which the new regulations now incorporate. In effect, small passenger vessels operating in Maine and New Hampshire already meet the new regulations!

HOW DETERMINED

Stability can be determined in one of two ways. A " simplified stability test" can generally be performed by the operator. This test, which must be done in the presence of a Coast Guard Marine Inspector, is designed to conservatively estimate the stability of the vessel by attempting to heel the boat beyond a certain point. This is done by shifting weights approximating that of a full load of passengers. The following vessels, if not more than 65 feet in length, may use a simplified stability test to determine stability:

Vessels carrying not more than 150 passengers on a domestic voyage

Vessels carrying not more than 12 passengers on an international voyage.

Vessels with not more than one deck above the bulkhead deck

Vessels which do not meet the above criteria must conduct a " full incline stability test" , which must be performed by a marine architect. This test is also done in the presence of a Coast Guard Marine Inspector. Full incline stability is also required on most sailing vessels (see 46 CFR 178.325), and vessels of unusual design.

STABILITY AND VESSEL ROUTES

Stability requirements are dependent on the degree to which a vessel's route exposes it to rolling seas, high winds, and other weather conditions. The following terms apply within the OCMI, Portland's area of responsibility:

Protected Waters: Vessels on a Rivers route, or a Lakes, Bays, and Sounds less than 1 mile route are considered to be operating on " protected waters" .

Partially Protected Waters: Vessels on an unlimited Lakes, Bays, and Sounds or limited Coastwise, are considered to be operating on " partially protected waters"

Exposed Waters: Vessels on coastwise or oceans route are considered to be operating on " exposed waters" .

SIMPLIFIED STABILITY TEST: CONSERVATIVE?

A simplified stability test may not be as conservative as is commonly assumed. The simplified test is done on a pass/fail basis moving weight and comparing the angle of heel with a reference mark. The required weight shift is based on passengers remaining in one general area and may not adequately account for large passenger movements.

As an example, consider the possibility where 150 passengers line the rail on one side of a vessel with an 18 foot beam to observe a whale. If the whale suddenly surfaces on the opposite side of the vessel and passengers shift 10 feet, a 240,000 ft-lbs heeling moment is generated (150 passengers x 160 lbs. x 10 ft.). The required stability test heeling moment is only 64,000 ft-lbs (16 ft. beam accessible to passengers x 150 passengers x 160 lbs. divided by 6). In this example actual passenger weight shift exceeded the stability test requirements by almost 400%!

PASSENGER MOVEMENT AND STABILITY

Weight shift by passengers on the upper deck may have a significant effect on vessel stability and all operators are reminded to review their Certificate of Inspection and Stability Letter for upper deck passenger limitations.

Vessel operators should implement stringent control procedures to strictly enforce upper deck passenger limits. Passengers naturally tend to go up and in any circumstances may actually crowd the rails to view a special occurrence such as a whale sighting. Adding extra passengers on the upper deck shifts the vessel's center of gravity up which adversely affects stability. Passenger movement from side to side on the vessel also presents a significant heeling moment, and may affect the vessel's stability.

WIND HEELING EFFECT AND STABILITY

Another important consideration is the effect that wind plays on a vessel's stability. High winds or wind gusts can adversely effect the vessel's stability; which could cause it to capsize in severe conditions. The effect that wind has varies with the wind's strength and direction, the type of vessel and its speed, and has a greater effect on slow moving vessels with large superstructures. Wind Heeling effect has less effect on vessels that have a low profile or that sit lower in the water. Vessels that sit higher in the water, have a higher freeboard, or larger sail area are much more effected by wind. Regardless of vessel type, caution should be exercised when operating in high winds. The vessel's configuration gets taken into consideration during all inclining experiments whether full or simplified.
Vessel operators should know the characteristics of the vessel and how wind may effect its stability. All operators are reminded to review their Certificate of Inspection and Stability Letter for operating limitations.

SAMPLE STABILITY LETTER

Commanding Officer
U.S. Coast Guard..
Marine Safety Office

103 Commercial Street
Portland, ME 04101-4726
Staff Symbol:
Phone: (207) 780-3251

16711
date

Owner
Address
Address
Dear __

A (stability test/simplified stability test) supervised by the U.S. Coast Guard was performed on the VESSEL NAME, O.N. _____, at PLACE, on DATE in accordance with the requirements of Title 46 Code of Federal Regulations section 171.035(f)/(ETC).

Test results and applicable calculations indicate that the vessel as presently outfitted and equipped, has satisfactory stability for passenger service, under reasonable operating conditions, for the carriage of (NUMBER) persons on (protected waters/partially protected water/or exposed waters), during (daylight hours only/(or no time restrictions).

In as much as passenger capacity and route are based on other criteria besides stability, THE NUMBER OF PERSONS ALLOWED TO BE CARRIED AND THE ROUTE SHALL BE AS SPECIFIED ON THE CERTIFICATE OF INSPECTION.

The following restrictions shall apply:

1. Bilges shall be kept pumped to a minimum content at all times

2. No weights are to be added, shifted or removed without prior approval of the cognizant OCMI.

3. (Other restrictions based on individual vessel characteristics).

It shall be the responsibility of the Operator of the vessel to comply with the above restrictions and maintain the vessel in a stable condition at all times.

This stability letter shall be posted under glass or other acceptable transparent material in the pilot house of the vessel.

Sincerely,

ROY A. NASH
Commander, U. S. Coast Guard
Officer in Charge, Marine Inspection

LICENSING REGULATIONS

Licensing regulations can be found in Title 46, Code of Federal Regulations, Part 10. Any questions about licensing should be directed to the staff of U. S. Coast Guard Regional Examination Center Boston, at (617) 223-3040.

REGIONAL EXAMINATION CENTER (REC) BOSTON

The REC is located in Boston's historic North End. Street parking is limited, and parking regulations are strictly enforced. Pay lots in the area are a good option if driving, and the REC is conveniently located between the Aquarium " T" stop and the North Station " T" stop. The office is open Monday - Friday (excluding federal holidays) between 0630 and 1600. Please arrive no later than 1430 if you wish to process a transaction on the same day. Many transactions can be completed through the mail, usually within 3 working days. Please call first if you have any questions.

LICENSING DEFINITIONS

Inland water: The navigable waters of the United States shoreward of the Boundary Lines as described in 46 CFR Part 7, excluding the Great Lakes.

Near coastal: Ocean waters not more than 200 miles offshore.

Oceans: The waters seaward of the Boundary lines per 46 CFR Part 7

Master: The officer having command of a vessel

Mate: A qualified officer in the deck department, other than the master.

Day: Eight hours of watchstanding or day working not to include overtime. On vessels where a 12-hour working day is authorized and practiced, such as on a six-on, six-off watch schedule, each workday may be creditable as one and one half days of service. On vessels of less than 100 gross tons, a day is considered eight hours, unless the Officer in Charge, Marine Inspection determines that the vessel's operating schedule makes the criteria inappropriate. In no case will this period be less than four hours.

Month: 30 days.

Original license: The first deck, engineer or radio officer license issued to a person by the Coast Guard.

Endorsement: A provision added to a license which alters its scope or application. For example, a tonnage limitation increase within a general tonnage category, a pilot license route addition or a radar observer qualification.

Raise of grade: An increase in the level of authority and responsibility associated with a license.

Original Licenses: For inspected vessels original licenses are issued for vessels of 25 gross tons, 50 gross tons, or 100 gross tons, depending on the applicant's experience. An application package for an original license requires:

___ application
___ birth Certificate or passport
___ social security card or two forms of ID listing the number
___ first aid certification within 1 year of application
___ current CPR certification
___ physical form
___ drug free certification
___ documentation of sea time: an Inland route requires 360 days of service, a Near Coastal route requires 720 days of service, 360 days of which on waters beyond the Boundary Line
___ user fees: $65 evaluation fee, $80 examination fee, $35 issue fee

The examination for an original license consists of Chart Navigation, Navigation - General, Deck - General, and Rules of the Road. The applicant has 3 chances at each section, and all sections must be successfully completed within 90 days of the start of testing. If the applicant fails to complete the examination, he must wait 60 days from the last test, submit another examination fee, and test on all modules.

License Renewal: Licenses are valid for 5 years from the date issued. A license can be renewed 1 year before the expiration, and up to 1 year after the license is expired. The latter " grace period" is for renewal purposes only, the license is not valid for employment after the 5th year. Formal disciplinary action has been taken against mariners and their employers for operating on expired licenses; the responsibility for renewal is with the license holder. A renewal package requires:

___ application
___ physical
___ drug free certification
___ copy of license being renewed
___ evidence of 360 days of underway service in the previous 5 years; or, a request for an open book renewal exercise
___ user fees: $45 evaluation fee, $45 examination fee (only if the open book exercise is required), $35 issue fee

All licensing **user fees** can be paid by personal check, money order, or, in person, cash in the exact amount. Personal checks or money orders are preferred and should be made out to U.S. Coast Guard. The applicant's name and Social Security Number must appear on the face of the check or money order.

Evidence of being **drug free** is required for all licensing transactions. This can be in the form of a periodic drug test or pre-employment drug test done within 6 months of the application. A letter from a marine employer indicating that the applicant has been subject to a random drug test program for 60 of the last 185 days and has not failed or refused to test also serves as drug free certification for license transactions. Drug test information and forms are included in the original license application package and the license renewal package.

BAD DRIVER?

In a recent revision to the regulations, the Coast Guard has clarified the law concerning the review of the National Driver Register (NDR) when conducting character evaluations for merchant mariner credentials.

The law implies that an applicant's motor vehicle driving record should be reviewed before any merchant mariner's credential is issued. However, if the NDR cannot provide an answer to an inquiry within three hours, the application will be reviewed based upon the applicant's statements.

The NDR indicates only that the applicant has or does not have a record. No other details are provided. If the applicant has a record, they MUST provide the details of the offense to the evaluator if they wish to continue the application process.

Having a record in the NDR does <u>not</u> necessarily preclude an applicant from receiving a license. The evaluator will consider the nature and date of the offense, and will weigh these factors with the applicants other references.

Again, any questions about licensing should be directed to:

U.S. Coast Guard Regional Examination Center
455 Commercial Street
Boston, MA 02109-1045
(617)-223-3040

VESSEL MANNING

The required complement of licensed officers and deckhands is listed on each vessel's Certificate of Inspection. Factors such as type of operation, waters of operation, configuration of sails and rigging, as well as specific statutory and regulatory requirements, are considered in determining manning levels. Standard manning requirements for small passenger vessels are as follows:

MORE THAN 12 HOURS OF OPERATION

- One Licensed Master
- One Licensed Mate
- One Deckhand for each deck accessible by passengers

NOT MORE THAN 12 HOURS OF OPERATION

- One Licensed Master
- One Deckhand for each deck accessible by passengers
- Deckhands are unlicensed, undocumented persons employed to assist with the safe operation of the vessel. In general, one deckhand is required for each deck accessible to passengers.

ADDITIONAL MANNING FOR VESSELS WITH A HIGH NUMBER OF PASSENGERS

# of passengers	less than 12 hours	12 to 24 hours
0-149	0	0
150-299*	1	2
300-399*	2	4
400-499*	2 + 1 mate	4
500-799	3 + 1 mate	6
800-999	4 + 1 mate	8
1000 +	Manning requirements based on individual review	

*A licensed Mate is required on any vessel carrying between 150 - 399 passengers unless a Senior Deckhand is designated as indicated below.
If the vessel's general operation is 12 hours or less, or there are no adequate facilities for the off duty crew to rest during operations exceeding 12 hours, the COI will be endorsed for the 12 hour crew in the manning block with the following notation:

For a regular T boat...
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.

For a schooner...
WHEN THE VESSEL IS AWAY FROM THE DOCK IN EXCESS OF TWELVE (12) HOURS IN ANY TWENTY-FOUR (24) HOUR PERIOD, OR WHEN THE VESSEL IS NOT ANCHORED IN A HARBOR OF SAFE REFUGE FOR AT LEAST TWELVE (12) HOURS IN ANY TWENTY-FOUR (24) HOUR PERIOD, AN ALTERNATE CREW SHALL BE PROVIDED.

For a yawl boat ...
YAWL BOAT (NAME OR #) MAY CARRY A MAXIMUM OF XXX PERSONS. OPERATION SHA LIMITED TO 1000 YARDS FROM THE SCHOONER TO WHICH IT IS ASSOCIATED. IT S OPERATED BY A LICENSED OPERATOR AND SHALL BE IN CONTINUOUS RADIO CONTACT SCHOONER TO WHICH IT IS ASSOCIATED.

LICENSED MATE

The requirement for licensed mates on small passenger vessels is found in 46 CFR 15.810. The requirement for a licensed Mate may be eliminated on vessels operating less than 12 hours in a 24-hour period when the passengers on board do not exceed 399. However, when the licensed mate is eliminated on vessels carrying between 150-399 passengers, a designated senior deckhand is required.

*Note: Vessels with overnight accommodations for more than 49 passengers, regardless of the number of day passengers, are required to carry a licensed Mate.

SAIL VESSELS

Sail and Auxiliary Sail Vessels will be evaluated on an individual basis for approval under similar standards as motor vessels. Particular attention must be paid to the ease of sail handling. In general, an extra deckhand or more is required above that of a similar motor vessel. Pure sail vessels will normally require an additional deckhand to handle the yawl boat for mooring, anchoring, or maneuvering in restricted areas or light wind.

LAUNCHES AND WATER TAXIS

Launches and water-taxi vessels must carry one deckhand, regardless of the number of passengers embarked or hours of operation. However, the elimination of a deckhand on small launch tenders which can be easily maneuvered and moored by the operator alone may be granted to service vessels at moorings in close proximity to the marina. This deckhand exclusion is in recognition that the marina service is handling passengers already familiar with vessels and to encourage small launches to remain in certification. This deckhand reduction allowance is narrowly interpreted and does not apply to excursion vessels or to any service taking regular passengers " off the street" . Manning for **Launch Tender/Excursion Vessel** combinations will be based on the excursion vessel status. However, when carrying less than six (6) passengers in marina/launch service only, small launch tender/excursion vessels meeting the above criteria may be granted the deckhand exemption. Any reduced manning allowances will be noted on the Certificate of Inspection.

ENGINEERS

Licensed Engineers are generally not required aboard small passenger vessels. However, these vessels should not be operated unless some member of the crew has a certain level of engineering training and experience. This individual should have a good working knowledge of the operation and use of the main and auxiliary machinery, steering systems, alarms, fueling techniques and emergency procedures. Marine Inspectors will ensure that a member of the crew has these qualifications.

CREW DRILLS

Title 46, U.S. Code of Federal Regulations, Section 185.25-10/**185.420/122.420** requires commercial small passenger vessel operators to conduct drills and provide instructions as necessary to ensure that all crew members are familiar with their duties. The OCMI, Portland's policy is that person overboard, fire, and abandon ship drills must be conducted and logged each month. Vessels which operate only during part of the year must conduct these drills before the start of the season and monthly thereafter while the vessel is operating.

Satisfactory completion of underway drills will be required for issuance of a Certificate of Inspection. During the vessel's reinspection, underway drills are not required. However, the marine inspector should conduct underway drills during a reinspection if there is a question as to the ability of the crew or vessel to perform a drill satisfactorily. Drills conducted during Coast Guard inspections will meet the requirement for that month's drills.

DECKHAND TRAINING AND QUALIFICATIONS

The Coast Guard does not prescribe deckhand qualification by regulation. The proper training and qualification of deckhands is the responsibility of the marine employer and ultimately the vessel's Master. Collateral duties of deckhands should not include activities such as cook or food handler.

The employment and training of qualified deckhands is the responsibility of the marine employer. The Coast Guard has issued, by means of NVIC 1-91 dated 20 February 1991, recommended criteria for assessing the qualifications of individual deckhands. The following is a brief summary of those recommendations:

Every deckhand on a small passenger vessel should be at least 16 years of age, qualified as to sight, hearing and physical condition to perform the deckhand's duties and physically able to perform all duties associated with the protection and evacuation of passengers during emergency situations.

Every deckhand should be familiar with the following matters relating to emergency conditions:

A. Person overboard

1. Location and use of lifesaving equipment.
2. The vessel's maneuvering characteristics.
3. Emergency communications skills.
4. Proper recovery procedures.
5. Station bill assignment/duties.

B. Fire

1. Fire detection and alarm systems.
2. Classes of fires & fire fighting procedures for each.
3. Location and operation of fire fighting equipment.
4. Location/operation of power, vents and fuel shut-offs.
5. Location/operation of watertight doors, hatches, etc.
6. Mustering passengers.
6. Station Bill assignment/duties.

C. Abandon ship

1. Location, launching and operation of survival craft and equipment (including lifeboats, rafts, buoy and apparatus, life floats, survival suits and PFD's).
2. Proper method of abandoning the vessel, mustering and disembarking passengers.
3. Proper emergency communications procedures.
4. Station bill assignment/duties.

D. **Foul weather**

1. Location/operation of watertight doors/closures.
2. Means of access to weather information.
3. Location/operation of bilge & emergency pump systems.
4. Station bill assignments/duties.

E. **Medical emergency**

1. Red Cross certified in first aid and CPR. (minimum of 50% of required deckhands)

F. **Collision**

1. Location of watertight doors.
2. Methods of dewatering.
3. Station bill assignment/duties

Deckhands assigned to seamanship duties, engineering or passenger safety/control duties must be familiar with the appropriate vessel operational matters based on their assignments:

A. **Bridge**

1. All navigational equipment, engine alarms/indicators, controls, gauges, and communications procedures.

B. **Engineering**

1. Main and auxiliary machinery, steering systems, alarms, refueling techniques and emergency procedures.

2. In instances where a larger vessel with complex engineering systems or other factors has been required by the OCMI to have unlicensed engineers in the crew, these individuals will require a greater in-depth knowledge of and training in the above areas. The OCMI may require specific training and qualifications for these individuals.

C. **Safety**

1. Crowd control, rigging, line handling, casualty control, first aid and CPR.

D. **Vessel Assistance**

1. Search and rescue techniques, towing and shiphandling.

E. **Seamanship**

1. Knots, line handling, docking/undocking procedures and basic navigation (i.e. piloting, dead reckoning).

SENIOR DECKHAND

In many situations it is important for the vessel's master to have a more highly qualified deckhand, for example where the OCMI has allowed the deletion o required mate. In addition to having a more in-depth knowledge of the a subjects, the senior deckhand should also have practical experience on t on which he/she is serving. The recommended experience for the senior d

1. 30 days experience on board the vessel.
2. 30 hours at the helm under supervision of the master or mate.

The senior deckhand will provide an increased level of experience on vessels where there is only one licensed officer required. The senior deckhand will be responsible for supervising the other deckhands while the vessel is underway and act as the team leader in response to any emergencies on board. He or she will be able to assist the master in the operation of the vessel, and will be available to operate the vessel in the event the master becomes incapacitated. In order to properly identify this individual, the vessel's master should designate the senior deckhand in writing and a copy of this designation should be retained aboard the vessel.

OWNER'S/OPERATOR'S RESPONSIBILITY

It is the owner's responsibility to have the vessel sufficiently manned to ensure the safety of the vessel and passengers. The conditions above apply to the number of deckhands required by the Certificate of Inspection. The operator may use more deckhands than required, but may not exceed the total number of persons allowed onboard by the COI.

VESSEL ROUTES

The area of operation permitted for each vessel is designated by the Officer in Charge, Marine Inspection. These areas are authorized on the Certificate of Inspection under the major headings " OCEANS" " COASTWISE" " LIMITED COASTWISE" " GREAT LAKES" " LAKES, BAYS AND SOUNDS" or " RIVERS" . Route definitions are found in **46 CFR 175.400/114.400**.

Further route limitations are described by reference to bodies of waters, geographical points, distance from geographical points, distances from land, depths of channel, seasonal limitations, etc. in the Conditions of Operation section on the Certificate of Inspection.

The routes a vessel may operate on are determined by a combination of factors, including vessel construction, stability, hatch coaming heights, freeboard, lifesaving equipment and other special hazards, such as cold water, lack of rescue facilities, or safe harbors.

Operation of vessels on routes of less severity than that specifically described on the Certificate of Inspection is always permitted. The general order of severity is considered to be Ocean; Coastwise; Limited Coastwise; Great Lakes; Lakes, Bays, and Sounds; and Rivers. Differences in local conditions of operation may need to be taken into account. The following route definitions apply to the OCMI Portland zone.

1. Rivers - any river, canal, or other similar waterway specifically designated by the CG District Commander.

2. Lakes, Bays, & Sounds - any lake (other than Great Lakes), bay or sound or other body of water specifically designated by the CG District Commander. In this zone, all waters out to the boundary line (defined below), are considered Lakes, Bays, & Sounds, with the exception of the waters from Cape Elizabeth to Great Boars Head, NH, which is considered Limited Coastwise for vessels authorized t more than 1 mile from land. Vessels operating in this area, more than 1 land are required to have at least a limited coastwise route, and must m

lifesaving, stability, coaming heights, subdivision, and watertight integrity requirements of " partially protected" waters.

3. Limited Coastwise - A route that is not more than 20 nautical miles from a harbor of safe refuge. A harbor of safe refuge means a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor.

4. Coastwise - not more than 20 nautical miles offshore on any ocean, the Gulf of Mexico, the Caribbean Sea, the Gulf of Alaska, or other similar waters specifically designated by the CG District Commander. A limited coastwise route may be issued restricting vessel operation to within 20 nautical miles of a harbor of safe refuge, allowing a reduction in certain lifesaving equipment.

5. Oceans - any ocean, the Gulf of Mexico, the Gulf of Alaska, the Caribbean Sea, and other similar waters more than twenty (20) nautical miles offshore.

BOUNDARY LINE

The boundary line is a position defined in 46 CFR Part 7 which delineates the application of various manning, inspection and FCC requirements. A chart showing the safety boundary line is appended to this booklet.

In general, INLAND of this boundary line is considered LAKES, BAYS & SOUNDS and a small passenger vessel may be operated with a MASTER, INLAND license. Seaward of this line out to 200 nautical miles offshore requires a MASTER, NEAR COASTAL license. (See Licensing definitions) The boundary line from Eastport, ME to Cape Ann, MA is defined in 46 CFR 7.10 as follows:

> A line drawn from the eastern most extremity of Kendall Head to latitude 44 54'45" N. longitude 66 59' W.
>
> A line drawn from West Quoddy Head Light to latitude 44 48.5' N. longitude 66 56.4' W. (Sail rock Lighted Whistle Buoy " 1"); thence to latitude 44 37.5' N. longitude 67 09.8' W. (Little River Lighted Whistle Buoy " 2LR"); thence to latitude 44 14.5' N. longitude 67 57.2' W. (Frenchman Bay Approach Lighted Whistle Buoy " FB"); thence to Mount Desert Light; thence to Matinicus Rock Light; thence to Monhegan Island Light; thence to latitude 43 31.6' N. longitude 70 05.5' W. (Portland Lighted Horn Buoy " P"); thence to Boon Island Light; thence to latitude 42 37.9' N. longitude 70 31.2' W. (Cape Ann Lighted Whistle Buoy " 2").

The Boundary Line is used as the dividing line between limited coastwise and lakes, bays, and sounds. This line will be followed in determining appropriate routes for T-Boats with the following exceptions:

a. South of Cape Elizabeth: Due to the *exposed nature of the waters and shoreline in the area, including the waters inside of the Boundary Line, the area between Cape Elizabeth, ME and Great Boars Head, NH is considered *exposed waters, even when the vessel is operating inside the Boundary Line. These vessels must have at least a limited coastwise route.

b. North of West Quoddy Light: The area of Passamaquoddy Bay and St. Croix River areas afford substantial protection equivalent to inside the boundary li the coast and are therefore considered " Inland" waters for vessel certi and manning requirements.

* Do not confuse the adjective **exposed** which means unprotected with the term EXPOSED as used with stability regulations.

CONSTRUCTION CONSIDERATIONS

PLAN SUBMITTAL (46 CFR 177.202/116.202)

Before construction begins, submit plans, folded flat, not rolled from the following groups in accordance with the following applications:

PLAN GROUP A:

(1) Midship Section (2) General Arrangement Plan (3) Outboard Profile
(4) Inboard Profile (5) Arrangement of Decks (6) Machinery Installation
(7) Electrical Installation (8) Fuel Tanks (9) Piping Systems
(10) Hull Penetrations and Shell Connections
(11) Propulsion/propulsion control including shaft details
(12) Steering/steering control including rudder details
(13) Ventilation Diagram (14) Engine Exhaust Diagram
(15) Fire Protection Equipment/Systems (16) Marine Sanitation Device layout
(17) Sail Plans including " Centers of Effort" (sailing vessels only)

PLAN GROUP B:

(1) Structural fire protection arrangements showing compliance with regulations

PLAN GROUP C:

(1) Lines (2) Curves of Form (3) Capacity plan showing centers of gravity
(4) Tank sounding tables (5) Draft mark location

Vessels 65 feet or less in length carrying 49 passengers or less:

Submit three (3) copies of Plan Group A to the Officer in Charge, Marine Inspection (OCMI) at the following address:

Commanding Officer
USCG MSO Portland
103 Commercial St.
Portland, ME 04101-4726

Vessels 65 feet in length carrying from 50 to 149 passengers:

Submit three (3) copies of Plan Group A and C to the OCMI, Portland.

Vessels 65 feet or less in length carrying 150 or more passengers:

Submit three (3) copies of Plan Group A, B, and C to the OCMI, Portland for forwarding to:

Commanding Officer
USCG Marine Safety Center
400 Seventh St. S.W.
Room 6302, Nassif Building
Washington, D.C. 20590-0001
Telephone: (202) 366-6484

Vessels greater than 65 feet in length carrying less than 150 passengers

Submit three (3) copies of Plan Group A and C to the OCMI, Portland for forwarding to the Marine Safety Center in Washington, D.C.

Vessels greater than 65 feet in length carrying 150 or more passengers:

Submit three (3) copies of Plan Group A, B, and C to the OCMI, Portland for forwarding to the Marine Safety Center in Washington, D.C.

The structural standards used for designing the vessel shall be satisfactory to the OCMI and consistently applied to all of the structural components. Materials and equipment used in the vessel construction shall likewise be satisfactory to the OCMI and in accordance with regulatory requirements.

DEFINITIONS

Watertight: Capable of effectively resisting the passage of water when subject to a hose test of 30 psi.

Weathertight: Weathertight means that in any sea condition, water will not penetrate into the vessel in any appreciable amount. Weathertight fittings for small passenger vessels must effectively resist the passage of water under continuous exposure to driving rain or spray.

HATCHES

Hatches in weather decks must be watertight or may be weathertight if on a watertight trunk 12 inches high, in a cabin top, in an enclosed weather tight space, or if the vessel is on a protected route. If for access by crew or passengers, hatches must be operable from both sides and may not be fitted with locks.

HATCH SECURING DEVICES

Professional mariners realize the importance of keeping hatch covers secured to preserve the watertight integrity of the hull. A recent marine casualty revealed that a small passenger vessel flooded and subsequently sank when water entered through an open cockpit. All hatches on weather decks must be fitted with securing devices (dogs, screws, latches, etc.), and captive devices (chains, hinges, etc.).

DOORS

Doors giving access into the hull must either be " Class I" water tight or weathertight if mounted with watertight coaming in accordance with the watertight integrity regulations in 46 CFR 171.124 (6" high if on an exposed or partially protected route, or 3" if on a protected route).

FREEING PORTS Are deck drains which penetrate the cockpit side or the bulwark, but not the deck. Their purpose is to quickly shed water before the next boarding sea. This is particularly important on a " well deck" vessel.

Although it is true that freeing ports make a " wetter" boat, they also contribute to a safer boat. Care should be taken that freeing port areas are not r or covered in any way. Flappers are permitted as long as they are not c being secured.

OPEN BOAT An open boat is a vessel which is not protected from the entry of water by a complete deck, or by a partial weatherdeck and superstructure, which is seaworthy for the waters upon which the vessel operates.

The following conditions define an open boat:

1. The weather deck is open to the bilge.
2. The weather deck can not drain overboard

No more than one-quarter of the freeboard may be immersed. The maximum heel due to wind or passenger weight movement must not exceed 14 degrees for all vessel types. (see 46 CFR 178.330)
Open boats certificated by the OCMI Portland shall not carry more than 49 passengers. Route limitations are determined on a case-by-case basis.

COCKPIT VESSEL A cockpit vessel is a vessel with an exposed recess in the weather deck extending no more than one half the length of the vessel measured over the weather deck.

The following conditions define a cockpit vessel

1. Length of the cockpit cannot exceed half the vessel's overall length.
2. The deck height above the load water line must be a minimum of 10 inches unless on a protected route.
3 The cockpit deck on a vessel that operates on exposed or partially protected waters must be watertight and the bulwarks fitted with scuppers or freeing ports for drainage, (total area for drainage in square inches must be equal to one tenth of the cockpit area in square feet).

FLUSH DECK VESSEL A flush deck vessel is a vessel with a continuous weather deck located at the upper-most sheer line of the hull.

The following conditions define a flush deck vessel:

The weather deck must be continuous with no substantial blockage of overboard drainage.

2. No recessed areas in weather deck.

3. The space over the deck may or may not be fully enclosed

WELL DECK VESSEL A well deck vessel is a vessel with a weather deck fitted with solid bulwarks that impede the drainage of water over the sides or an exposed recess in the weather deck extending one-half or more of the length of the vessel measured over the weather deck.
The following condition defines a well deck vessel:

1. The well deck must be watertight with freeing ports for drainage. The total area for drainage in square inches must be equal to total number of running feet of bulwark in after 2/3 of the vessel, including the transom, times the factor from table 171.150. If the vessel does not have drainage from the fore deck aft, the total length of the bulwark in the ves be used.

Vessels on partially protected routes may reduce the freeing port area by one half if they can meet all of the requirements of intact stability, damage stability and one compartment subdivision for vessels operating on an exposed route. Vessels on protected routes must have at least the same amount of freeing port as required for a cockpit vessel of the same length.

RAIL HEIGHTS
OLD " T"

46 CFR 177.35-1 sets forth the requirements for rail height on T-Boats depending on the type of service of the vessel. In general, 42 inch rails are required. The minimum requirements for vessels engaged in dual service is as follows:

a. On passenger decks of vessels engaged exclusively in ferry or excursion type operations, rails shall be at least 42 inches high. Also, the space below the rail shall be fitted with bulwarks, chain link fencing, wire mesh, or equivalent.

b. On vessels engaged exclusively in sport fishing, where it can be shown that higher rails would interfere with the normal operations of the vessel, rails of at least 30 inches in height will be permitted. This shall only apply to the main deck in the area of fishing with fixed seats equipped with seat belts. Since fishing on the upper deck would be impractical and due to increased hazards on the upper deck, rail heights shall be 42 inches on any upper decks. In general, where sport fishing is combined with excursion services, 39.5 inch minimum rail heights are required, (see e. below).

c. Where the principal business of the vessel requires the discharge of personnel in a seaway, the peripheral rails may be wholly or partially omitted or reduced in height to not less than 30 inches. When such rails are omitted, center rails or other suitable handholds shall be substituted. This rail height reduction applies only to the limited access/discharge area.

d. For vessels subject to the 1966 International Convention on Load Lines, the height of rails and bulwarks at the peripheries of the freeboard and superstructure decks shall be at least 39.5 inches. In general, this criteria should be used as the minimum rail height for any combined service reduction.

e. On vessels that engage in both excursion and fishing, where it can be shown that the 42 inch requirement would interfere with vessel operations, OCMI -Portland has determined that a rail height of at least 39.5 inches will be acceptable. It should be noted that MSO Boston also requires these dual service vessels to have a rail height of 39.5 inches.

f. Sail vessels, small vessels of open launch type and other vessels not specifically covered elsewhere in this section shall have rails or equivalent protection as determined by the OCMI. These rail requirements will be determined on a case-by-case area for areas where sails or operations preclude 42 inch rails

NEW " T" and " K"

46 CFR 177.900/116.900 sets forth the requirements for rail heights for vessels that were built after 11 March 1996:

a. Rails on passenger decks of a ferry or a vessel engaged in excursion trips, including but not limited to sightseeing trips, dinner and party cruises, and overnight cruises, must be at least 39.5 inches h

b. Where the principal business of the vessel requires the discharge of persons or cargo in a seaway, the OCMI may accept alternatives that would not hinder discharge operations.

RAIL CONSTRUCTION

On passenger decks of a ferry or a vessel on an excursion trip, the vessel must have either bulwarks, chain link fencing or wire mesh that has openings of not more than 4 inches in diameter or bars, slats, rail courses, or an equivalent spaced interval of not more than 4 inches.

Rails must be designed and constructed to withstand a point load of 200 pounds applied at any point in any direction.

SEAT CONSTRUCTION AND ARRANGEMENTS

46 CFR 177.30-1/177.820/116.820 The following standards apply to fixed and portable seating:

1. A seat must be provided for each passenger permitted in a space for which the fixed seating criterion has been used to determine the number of passengers permitted.

2. A seat must be constructed to minimize the possibility of injury and avoid trapping occupants.

3 Installation of seats must provide for ready escape

4. Fixed, temporary, or portable seats, must be installed as follows:

   a. An aisle of not more than 15 feet in length must be not less than 24 inches in width.

   b. An aisle of more than 15 feet in length must be not less than 30 inches in width.

   c. Where seats are in rows, the distance from seat front to seat front must be not less than 30 inches and the seats must be secured to a deck or bulkhead.

   d. Seats used to determine the number of passengers permitted must be secured to the deck, bulkhead, or bulwark.

PORTABLE SEATS

Portable seats may be allowed provided the general arrangement meets the requirements for fixed seating. The seating arrangement must be submitted to the OCMI for approval.

Portable seats can be used to compute the number of passengers allowed provided the intentions of the fixed seating requirements are met. The primary concern is the maintenance of clear escape routes. Portable seats, when used in high-density passenger areas, can too easily block escape access if not secured. Some type of securing method for portable seats which will maintain clear escape rout entire row of seats will be required. All portable seats must be specif approved by the OCMI.

METHODS OF DETERMINING MAXIMUM PASSENGERS PERMITTED

The maximum number of passengers permitted is based on such factors as stability restrictions, subdivision requirements of the vessel, lifesaving equipment, the minimum manning requirements, route, general arrangement, emergency escape access rail space or clear deck area and seating. Methods for determining passengers based on clear deck area or by seating are explained below.

OLD " T" (46 CFR 176.01-25)

LENGTH OF RAIL CRITERIA

One passenger for every 30" of clear rail space available to the passengers at the vessel's sides and across the transom. Rail space in congested areas unsafe for passengers, such as at the bow near anchor equipment, line handling gear etc., or in way of sail booms and running rigging, will not be considered.

DECK AREA CRITERIA

One passenger for every 10 sq. ft. of deck area available for passenger use. In computing area, the following will not be counted:

Concession Stands
Toilet and Washrooms
Companionways, stairways, etc.
Spaces occupied by & necessary for handling lifesaving equipment.
Interior passageways less than 30" wide.
Open deck passageways less than 18" wide.
Spaces below deck which are unsuitable for passengers and which would not normally be used by passengers.

FIXED SEATING CRITERIA

One passenger for every fixed seat or 18" of width of bench seating actually provided. Each bench or seat will be measured separately. A total length of all seating will not be divided by 18" to determine seating. Bench seating areas which do not provide adequate legroom (such as inside corner of benches at 90 degrees from each other) are not counted.

COMBINATION OF FIXED SEATING/DECK AREA CRITERIA

Where fixed seating is provided in one area and not throughout the vessel, passengers permitted may be determined by using fixed seating criteria in spaces with fixed seating & deck criteria in other spaces. Combining length of rail with deck area or fixed seating is not permitted when determining the maximum number of passengers permitted on an individual deck.

NEW " T" and " K" (46 CFR 176.113/115.113)

DECK AREA CRITERIA

One passenger for every 10 sq. ft. of deck area available for passenger
computing area, the following will not be counted:

Fixed seating area.

Obstructions including stairway and elevator enclosures, elevated stages, bars, and cashier stands.
Toilet and washrooms.
Spaces occupied by and necessary for handling lifesaving equipment.
Spaces below deck which are unsuitable for passengers and which would not normally be used by passengers,
Interior passageways less than 34 inches wide.
Open deck passageways less than 28 inches wide.

Fixed seating and length of rail criteria may also be used under new " T" and " K" to determine the number of passengers permitted.

DRYDOCK EXAMINATIONS

NEW DRYDOCK INTERVALS

The new regulations revise the required drydocking interval previously set at not more than 18 months for most vessels. The new regulations set this interval at 2 years. Specifically, new drydock intervals are defined in **46 CFR 176.600/115.600** as follows:

-Vessels certificated for an international voyage: 12 months
-Vessels exposed to salt water more than 3 months in any 12 month period since the last drydock: 2 years
-Vessels exposed to salt water not more than 3 months in any 12 month period since the last drydock: 5 years

As in the past, the new regulations allow the OCMI to decrease the drydock interval on any vessel whose material condition warrants a shorter interval.

PURPOSE AND SCOPE

The purpose of the drydock examination is to completely ascertain the structural integrity of the hull, its fasteners, and all through-hull fittings. This inspection encompasses not only the underwater areas such as the hull, water intake/discharge fittings, rudder, shafting, etc. but also all interior spaces, voids, and cofferdams. Fuel, ballast, or fresh water tanks are inspected when necessary to determine hull condition or if already opened for repairs or cleaning during the drydock exam.

In addition to hull repairs and maintenance, drydock periods usually afford the best opportunity for the maintenance and inspection of rigging or equipment and for major repairs or modifications to machinery, electrical and other equipment. Therefore an Inspection for Certification is often conducted with the drydock exam. To complete an inspection for certification, the vessel must be back in the water for testing of the engines, steering system and other operational equipment.

PREPARATION FOR EXAM

To help save time during your inspection, we suggest you make the following preparations:

a. Exterior hull should be cleaned but not freshly painted.
b. All internal spaces should be open for inspection and well ventilated.
c. Bilges should be dry and clean.
d. All through hull valves should be open, clean, with strainers removed.
e. All certificates and documents should be ready for examination.

FALL DRYDOCKING ENCOURAGED

When vessel repairs are contemplated or the hull condition is suspect, early drydocking in the fall will allow ample time to complete any required repairs, alterations, or modifications. As the work is completed, an inspector can periodically visit the vessel during the winter and/or early spring to examine the vessel. This also allows plenty of time for generation of any plans required for modifications and adequate time for Coast Guard review.

WINTER DRYDOCK INSPECTIONS OF WOODEN VESSELS

Freezing temperatures can cause moist, rotten wood to appear hard and sound. For this reason, drydock inspections will not be conducted on wooden vessels during winter months except during long periods of unusually warm temperatures.

WOODEN BOAT FASTENERS

Fastenings are the primary connecting mechanism for structural members of a vessel and as such must be inspected as diligently as the vessel planking, frames, stringers, etc. Inspectors will typically require the removal of fastenings for inspection under the following circumstances:

a When structural conditions indicate fastening problems, i.e. plank ends not fair, heavy running rust between planks and framing, spaces between frames and planking.

b. Removal of random fastenings if the vessel is over 15 years of age and no information is available from previous repairs or drydockings.

c. Whenever, in the inspector's judgement, further examination of fastenings is necessary.

WOODEN HULL PASSENGER VESSELS OVER FIFTEEN YEARS OF AGE

An annual underway check of the hull of all wood vessels over 15 years old must be conducted. This will be done in order to provide an opportunity to view accessible parts of the hull working in the seaway. Should the inspector determine that an underway inspection would not be sufficiently revealing of the hull condition due to ceilings, linings, or other materials that prohibit access to the interior hull, the six year frame survey described below will be required in lieu of the underway examination.

Wooden hull passenger vessels over 15 years of age which have ceilings o coverings installed preventing the inspection of structural members must specially examined in drydock every six years to reliably ascertain the of the frames, keel, floors and fasteners. A six year frame survey and

pull program will be established for these vessels for which owners/operators can make the appropriate preparations in advance of the scheduled survey. Experience has shown that frames in way of the garboard strake and wind/water areas are the most susceptible to rot and deterioration.

Therefore, unless alternative proposals are approved well in advance of the required drydocking, a sufficient length of either the ceilings or strakes of planking at the wind and water line and near the garboard strake must be removed every six years.

Alternative proposals to determine the condition of hidden structural members, such as borings, may be considered by the OCMI. However, the borings are certainly not as effective as visual inspection and soundings of the frames. Borings will only be considered on vessels with excellent inspection records and when there is no evidence of structural deterioration. Evidence of deterioration found by borings will result in a requirement to pull ceilings or planks for visual inspection.

NO FIBERGLASS SHEATHING REPAIRS

Navigation and Inspection Circular (NVIC) 7-95 prohibits the sheathing of the exterior hull of existing wood vessels with fiberglass, bondo, etc. as a means of restoring strength and watertight integrity. Sheathing of a structurally sound hull to extend service life may be approved on a case-by-case basis. The above mentioned NVIC 7-95 is an excellent reference source for the repair of wooden vessels.

DECAY IN WOOD HULL BOATS: CAUSE, DETECTION, & PREVENTION

Wooden vessels have proven to be suitable for long service when properly constructed and maintained. The greatest enemy of wood is decay or " rot" . Most wood decay is preventable if care is used in construction, maintenance, and repair. Decay in wood is caused by fungi which are parasitic plants whose growth depend on suitable temperature (50-90 degrees F.), suitable food (wood) and moisture (20-80 percent wood moisture content). Fresh water from condensation, rainwater, or leaking pipes is necessary to grow fungi. There is no such thing as " dry rot" . Decay will not take place if the moisture content of the wood remains below 20 percent. On the other hand, too much moisture will not support fungi growth either. Fungi are living plants that can and do travel from an infected area to sound wood.

It is easy to detect advance decay. The wood is normally discolored, softened, or brittle and may show cracks or collapsed areas. No known test can be substituted for experience in spotting early decay. Early detection of decay can be found by one or a combination of the below listed methods:

a. Discolored paint or indentations of the wood surface

b. Sounding with a hammer will produce a dull sound and is especially useful in stanchions that may have decayed centers.

c. A wood awl or screwdriver will easily penetrate softwood.

d. Splinters of wood turned up by a knife blade will break off abruptly instead of producing a long clean splinter found in good wood.

e. Fasteners will be easy to remove and will turn freely and fa: a bite, indicating soft and spongy wood.

f. Drilled holes may be used for timbers. The ease of drill entry and the type of chip produced will show the soundness of the timber. Borings should obviously be kept to a minimum.

The most effective prevention of decay is done at initial construction in the use of a naturally decay resistant or pressure treated wood. A vessel design that allows full ventilation of all its enclosed spaces will promote water evaporation; which is one of the most effective measures in the prevention of decay.

Ensure that drain pipes and scuppers are free of rainwater, can drain over the side and that deck seams are well caulked; especially at the end grain. When in fair weather, open hatches and deck fittings to supplement the air circulation. Remove unnecessary dunnage that traps moisture and blocks air circulation. Remember decay will only grow in wood where fresh water is present. Salt water inhibits fungi growth. Some operators add rock salt to their vessel's bilges upon hauling the vessel out for prolonged periods to absorb any fresh water accumulation due to condensation and/or rain. Some may routinely add rock salt to the bilges while operating as a method of inhibiting the development of rot. There are two disadvantages to this practice: (1) strong salt solutions are hard on wood and fastenings, and have questionable value and, (2) salt dissolves rapidly and goes over the side when pumping bilges. When the vessel is in the water, normal salt water seepage into the vessel is usually enough to discourage fungal growth. Well maintained wooden vessels built of good material and well ventilated will give many decades of good service.

WOOD PRESERVATIVES OR CHEMICAL TREATMENT

All wood preservatives or chemical treatments should be specifically approved by the OCMI. In general only treatments sold, over the counter, for normal retail use will be authorized.

REPAIRS AND ALTERATIONS

HOT WORK (46 CFR 176.710/115.710)

The new regulations require that before welding or other hot work is done on or near fuel tanks, fuel lines, or other sections of a fuel system, a marine chemist certified by the NFPA must inspect the space for flammable vapors. This requirement applies to both new and existing vessels, and is effective as of March 11, 1996. The marine chemist will normally certify the space " safe for workers" and/or " safe for hotwork" . The certificate may include requirements to maintain the conditions at the time of the inspection through forced ventilation or other methods. The vessel owner is responsible for maintaining the conditions of the permit while the work takes place.

WHEN TO NOTIFY THE COAST GUARD (46 CFR 176.700/115.700)

Repairs or alterations to the hull, machinery, or equipment which affect the safety of the vessel must only be made with the approval of the Officer in Charge, Marine Inspection (OCMI), except during emergencies. When repairs are made during an emergency, the owner, operator, or master must notify the OCMI as soon as practicable after such repairs or alterations are made. Repairs or alterations which affect the safety of the vessel include but are not limited to the replacement, repair, or refastening of deck or hull planking, plating, and structural members; repair of plate or frame cracks; repair of masts on s vessels; repair or replacement of electrical wiring, fuel lines, tanks, l and other pressure vessels; alterations affecting stability; and repair c alteration of lifesaving, fire detecting, or fire extinguishing equipmen

For vessels under the previously described six year frame survey program, credit may be obtained toward meeting these special hull examination requirements if repairs are sufficiently revealing of the vessel's hull condition and structural integrity. The OCMI must be notified in advance and an examination must be conducted to the satisfaction of the attending marine inspector to obtain credit

The owner or operator shall submit to the OCMI all drawings, sketches, or written specifications describing the details of any proposed alterations to the vessel. The OCMI must approve a proposed alteration before work is started. Drawings are not normally required to be submitted for repairs or replacements in kind.

For vessels that have undergone significant hull repairs or modifications, regardless of age, an underway examination of the hull must be conducted to prove the structural integrity of the hull. This may be performed as part of or in conjunction with any other inspection or independent of any other inspection if deemed necessary by the attending marine inspector.

Undertaking alterations/repairs without prior Coast Guard approval is a risk the owner should not take. Modifications not meeting U.S. Coast Guard rules and regulations and/or the rules of a recognized classification society may not be approved and may have to be revised, causing unforeseen delay and additional costs when starting the new season.

EQUIPMENT APPROVAL

46 CFR SUBCHAPTER Q

In 1945, the Coast Guard established the regulations in 46 CFR 159-164 (Subchapter Q). Its purpose was to consolidate the specifications for equipment and materials that were required to be approved by the Coast Guard, or to meet certain minimum standards. Also, requirements for the operation and construction of inspected vessels were distinguished from specifications applicable to the manufacturers of approved equipment and materials used aboard vessels.

Each item approved under Subchapter Q is assigned a basic approval number. This includes the number of the CFR subpart under which an item was approved, thus identifying the general requirements for approval. No two specifications have the same number. Subchapter Q has been separated into six parts:

a. Part 159 Approval of Equipment and Materials (general);

b. Part 160 Lifesaving Equipment

c. Part 161 Electrical Equipment

d. Part 162 Engineering Equipment and Fixed Fire Equipment

e. Part 163 Construction

f. Part 164 Materials

EQUIPMENT LISTS, COMDTINST M16714.3E

This publication contains a listing of various items of lifesaving, fire: pollution abatement, engineering, electrical, and miscellaneous equipmen aboard vessels. These items are approved or certified by the Commandant

required by certain laws and regulations. It contains three sections that deal with:

Approved instruments, machines, and equipment;

Acceptable hydraulic components; and

Formerly approved instruments, machines, and equipment that are no longer manufactured as approved equipment. Unless otherwise noted, such items may be used as long as they are in good and serviceable condition.

A copy of this publication may be obtained by writing:

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Request publication number ISBN 0-16-045408-5

LIFESAVING EQUIPMENT

EMERGENCY POSITION INDICATING RADIOBEACONS (EPIRB) (46 CFR 180.64/117.64)

Each vessel that operates on the high seas (beyond the 3 mile territorial sea limit) must have on board an FCC Type Accepted Category 1, 406 MHz EPIRB. " Category 1" indicates that the EPIRB is designed to float free and automatically activate in the event the vessel sinks. 406 MHz EPIRB's are vastly superior to the older Class A types because they provide a more accurate fix to search and rescue (SAR) units and, once registered with NOAA, provide data on the name, type, and owner of the vessel in distress.

In short, a properly registered 406 EPIRB ensures that SAR units know where to look, and who to look for!

All 406 MHz EPIRB's must have their hexadecimal code registered with the NOAA database. This is required by 47 CFR 80.1061. A 406 MHz EPIRB registration form is enclosed with this handbook. Once it is registered, NOAA will send a confirmation sticker, which must be placed on the EPIRB. Be sure the number on the confirmation sticker matches the EPIRB itself.

EPIRB's must be tested monthly; the test must be recorded in a log book or other document.

DISTRESS FLARES AND SMOKE SIGNALS (46 CFR 180.68/117.68)

Oceans, and coastwise vessels are required to carry 6 hand red flares and 6 hand orange smoke distress signals. Lakes, bays, and sounds, and rivers vessels are required to carry 3 hand red flares and 3 hand orange smoke distress signals. Vessels on runs of less than 30 minutes are not required to carry distress signals

Approved rocket parachute flares may now be substituted for any of the distress signals on oceans, coastwise, Lakes, Bays and Sound, and Rivers routes. parachute flares, red hand flares or floating orange smoke distress sign substituted for the orange hand smoke signals required on other vessels.

The new regulations also require that flares be stored in the vicinity of the operating station in a brightly colored, portable watertight container marked " DISTRESS SIGNALS" or they may be stored in a pyrotechnic locker, above the freeboard deck, near the operating station and away from any source of heat.

LIFE JACKETS (46 CFR 180.71/117.71)

Old and new regulations require an adult type I personal flotation device (PFD) for each person carried on board a vessel. Child size life jackets (type I) equal to at least 10% of the number of persons permitted must also be provided. Of course, there must always be a child size life preserver for each child onboard.

The new regulations state that if all the adult life jackets are " extended size" (those with a lower limit of 47 inches in height or weighing 45 lbs.), only an additional 5% of child size life jackets need be carried.

LIFE JACKETS FOR INFANTS/SMALL CHILDREN

Special purpose life jackets, such as for infants or small children, may be brought onboard by parents. These life jackets may not be used as a substitute for the required number of children's Type I PFD's. The Operator should specifically address children's PFD's in the safety orientation before getting underway. Cork and balsa wood lifejackets are no longer authorized for use.

PFD'S OTHER THAN TYPE I, IN EXCESS OF REQUIRED EQUIPMENT

Special purpose buoyant devices such as ski vests, work vests, and commercial hybrid PFD's may <u>not</u> be used as a substitute for the required Type I PFD, but are authorized as excess equipment under the conditions outlined in 46 CFR 180.72. Work vests may be worn by crewmembers, and in some cases by passengers performing crewmember type tasks under direct supervision; such as cadets.

Work vests must be stowed separately from the regular stowage of approved life preservers.

STOWAGE OF LIFE JACKETS (46 CFR 180.78/117.78)

All lifejackets must be stored in a container <u>not capable of being locked</u>. The number of life jackets must be marked in clearly legible letters and numbers on each container. Life jackets that are stored overhead must be supported so that they may be quickly released for distribution in an emergency.

Child size life jackets must be stored separately from adult life jackets and marked appropriately. Work vests and other " extra" PFD's must also be separately stored and marked.

INSPECTION OF LIFE PRESERVERS

A Type I PFD is designed to turn an unconscious person in the water from a face down position to a vertical or slightly backward position. The adult size device provides a minimum buoyancy of 22 pounds and the child size provides a minimum buoyancy of 11 pounds. The Type I PFD provides the greatest protection to its wearer on large open water areas where there is little probability of quick rescue

The life preserver is checked visually to determine its general conditio envelope, tie straps, stitching, and lifting attachments should be carefu checked for signs of rot or deterioration. Other conditions that may in

unserviceable condition are hardness, stiffness, lumpiness, or being oil soaked. A gentle squeeze will detect most of these conditions.

Kapok inserts should be checked for waterlogging and mildew. The natural buoyant properties of the kapok fiber, not the sealed bag, provide the required buoyancy. Although a sealed vinyl pad covering may provide additional buoyancy, its primary purpose is to prevent exposure to contaminants. Therefore, small leaks in kapok inserts, provided the conditions noted above are not evident, are acceptable. A ruptured kapok insert is suspect if there is evidence of moisture or oil soaking, since oil and mildew will break down the waxy kapok fibers.

If a life preserver is found unfit for service and beyond repair, it must be destroyed and removed from the vessel. Minor repairs and cleaning may be accomplished in accordance with **46 CFR 160.006 and NVIC 2-63.**

MILITARY TYPE LIFE JACKETS

Military style life jackets differ markedly from commercial, Coast Guard approved types. Military PFDs have many leg and collar straps, removable pads in zippered compartments, and twice the number of strap adjustments. Also, the envelope, webbing, and tie tapes are not mildew inhibited. Finally, they are not generally available through commercial sources except as government surplus equipment; as such, their true condition will be questionable. Accordingly, military type life jackets are <u>not</u> Coast Guard approved and <u>may not</u> be used in lieu of Coast Guard approved personal flotation devices (PFD's).

RING LIFE BUOYS (46 CFR 180.70/117.70)

Life ring buoys are required on vessels as follows:

<u>Vessels 65 feet or less</u>: 1 life ring buoy (24" diameter)

<u>Vessels over 65 feet</u>: 3 life ring buoys (24" diameter)

At least one life ring buoy is required to have a 60' line. The new regulations allow vessels equal to (or less than) 26' to carry a 20" life buoy. Under the old regulations, only vessels less than 26' could do so. The new regulations also specify that the required lifeline be buoyant, non-kinking, dark in color if synthetic, or UV light resistant, and at least 5/16" in diameter.

WATERLIGHTS FOR RING BUOYS AND BUOYANT APPARATUS

Waterlights are required on ring buoys and all buoyant apparatus except those vessels operated only during daylight hours. Waterlights must be Coast Guard approved under 46 CFR 161.010. The new regulations require that floating waterlights be secured to the life ring buoy with a lanyard between 3' and 6' in length. Finally, waterlights on vessels with only one ring buoy must be attached to the lanyard with a clip that allows the waterlight to be disconnected from the ring buoy.

Waterlights are permanently attached to inflatable buoyant apparatus by the manufacturer during construction. Separate or additional waterlights are not required on these devices.

SURVIVAL CRAFT/PRIMARY LIFESAVING EQUIPMENT (46 CFR 180.200/117.200)

The new regulations increase the survival craft requirements for some vessels, but consider the water temperature and the inherent flotation of wooden vessels. The new regulations also allow vessels that meet certain subdivision and damaged stability requirements to carry fewer survival craft. Vessels which meet the standards for collision bulkheads in 46 CFR 179.310 or 171.085, and the subdivision standards in 179.220 and 179.320, or 171.070 - 171.073 and 171.080 will generally require fewer survival craft.

Vessels of not more than 65' carrying not more than 49 passengers built before March 11, 2001, may meet the collision bulkhead standards in 46 CFR 179.310 and one compartment subdivision standards in 179.220 and 179.320 at least in way of the engine room and lazarette.

New survival craft requirements must be met by existing vessels by March 11, 2001, or 10 years after the vessel's keel was laid. Survival craft onboard vessels before March 11, 1996 may continue to be used to meet these requirements as long as they are in good and serviceable condition. New and replacement survival craft must meet the new regulations.

WINTER SURVIVAL CRAFT REQUIREMENTS

In order to provide all persons with an added likelihood of survival and timely rescue in the hypothermic conditions found throughout New England during the winter months, any small passenger vessel operating under the authority of its Certificate of Inspection north of latitude 41 degrees 42 minute north, more than one (01) nautical mile from land, between 1 November and 1 April, shall be equipped with sufficient primary lifesaving equipment to accommodate 100% of the persons onboard. This should facilitate more rapid location by rescue forces while also increasing the likelihood that survivors will be able to limit immersion exposure in the cold water by climbing onto or being pulled into one of these floating devices.

SURVIVAL CRAFT STOWAGE AND EQUIPMENT (46 CFR 180.130/117.130)

All lifesaving equipment must be readily accessible, and capable of being both manually and automatically deployed. See the attached diagrams from NVIC 4-86 for proper float free arrangements or hydrostatic release.

Survival craft equipment must be of good quality, and attached to the survival craft in a way that will not interfere with its proper use. Specific re
are as follows:

Inflatable liferafts SOLAS A pack or SOLAS

Life floats (LF) lifeline, pendant, painter, 2 paddles, 1 light

Buoyant apparatus (BA) lifeline, pendant, painter, 1 light

SURVIVAL CRAFT REQUIREMENTS, NEW AND OLD REGULATIONS

Rivers	New	Old
*Cold water, no subdivision	50% LF	10% LF,BA
*Cold water with subdivision	none	10% LF,BA
Warm water	none	10% LF,BA
Any water, within 1 mile of land	none	none

Lakes, Bays & Sounds	**New**	**Old**
*Cold water, wood vessels, without subdivision	100% LF	30% LF,BA
*Cold water, wood vessels, with subdivision	50% LF	30% LF,BA
*Cold water, all non wood vessels	50% LF	30% LF,BA
Warm water, all vessels	none	30% LF,BA
All waters, within 1 mile of shore	none	none

Limited Coastwise	**New**	**Old**
*Cold water		
Wood vessels, no subdivision	67% IBA	50% LF,BA
Wood vessels, with subdivision	100% LF	50% LF,BA
All non wood vessels	100% LF	50% LF,BA
All vessels without subdivision, within 3 miles of shore	100% LF	50% LF,BA
All vessels with subdivision, within 3 miles of shore	50% LF	50% LF,BA
All vessels with a 406 EPIRB, within 3 miles of shore	50% LF	50% LF,BA
Warm water		
All vessels with routes beyond 3 miles from shore	50% LF	50% LF,BA
All vessels without subdivision, within 3 miles of shore	50% LF	50% LF,BA
All vessels with subdivision, within 3 miles of shore	none	50% LF,BA
All vessel with a 406 EPIRB and within 3 miles of shore	none	50% LF,BA

Coastwise	New	**Old**
*Cold water		
Wood vessels, no subdivision	67% IBA	100% LF,BA
Wood vessels, with subdivision	100% LF	100% LF,BA
All non wood vessels	100% LF	100% LF,BA
Warm water		
All vessels with routes beyond 3 miles from shore		
100% LF	100% LF,BA	
Warm and *cold water, within 3 miles of shore		
All vessels without subdivision	100% LF	100% LF,BA
All vessels with subdivision	50% LF	100% LF,BA
All vessel with a 406 EPIRB	50% LF	100% LF,BA

Oceans	**New**	**Old**
*Cold water		
All vessels without subdivision	100% IBA	100% LF
All vessels with subdivision	100% LF	100% LF
Warm water, all vessels	67% IBA	100% LF

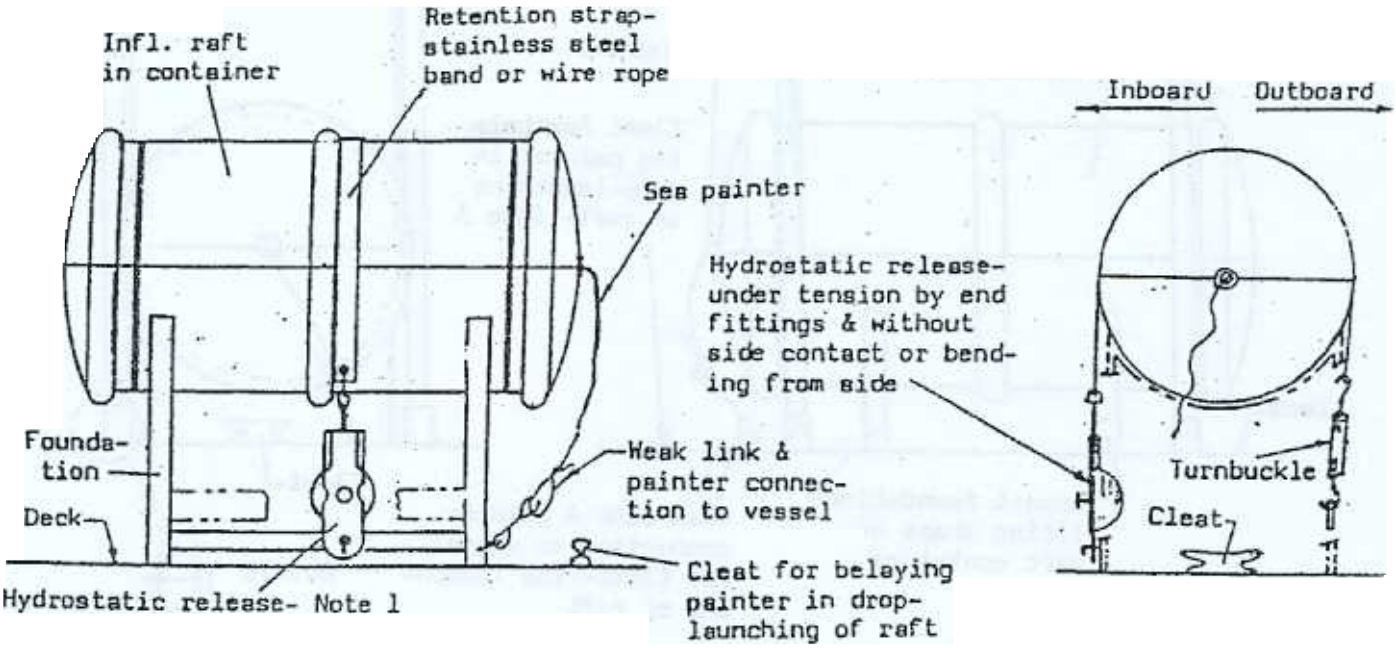
The ENTIRE MSO Portland AOR is considered COLD WATER.

•

IBA= inflatable buoyant apparatus; LF=life float; BA= buoyant apparatus

Existing BA's may substitute for LF's until they become unserviceable.

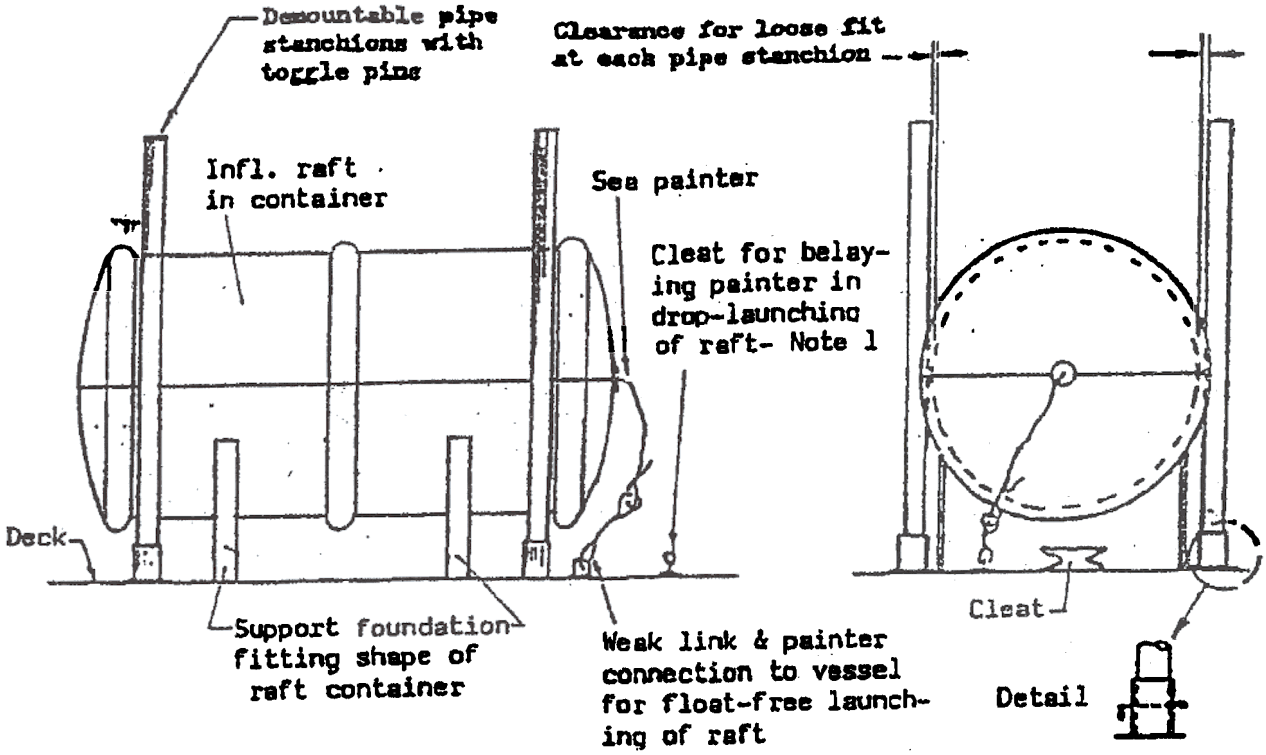
New survival craft requirements must be met by existing vessels by March 11, 2001, or 10 years after the vessel's keel was laid.



Notes

1- A pelican or other slip hook connecting the HRU to the retention strap would be an acceptable addition to the above arrangement.

Installation of Navy/ Coast Guard
Hydrostatic Release Units



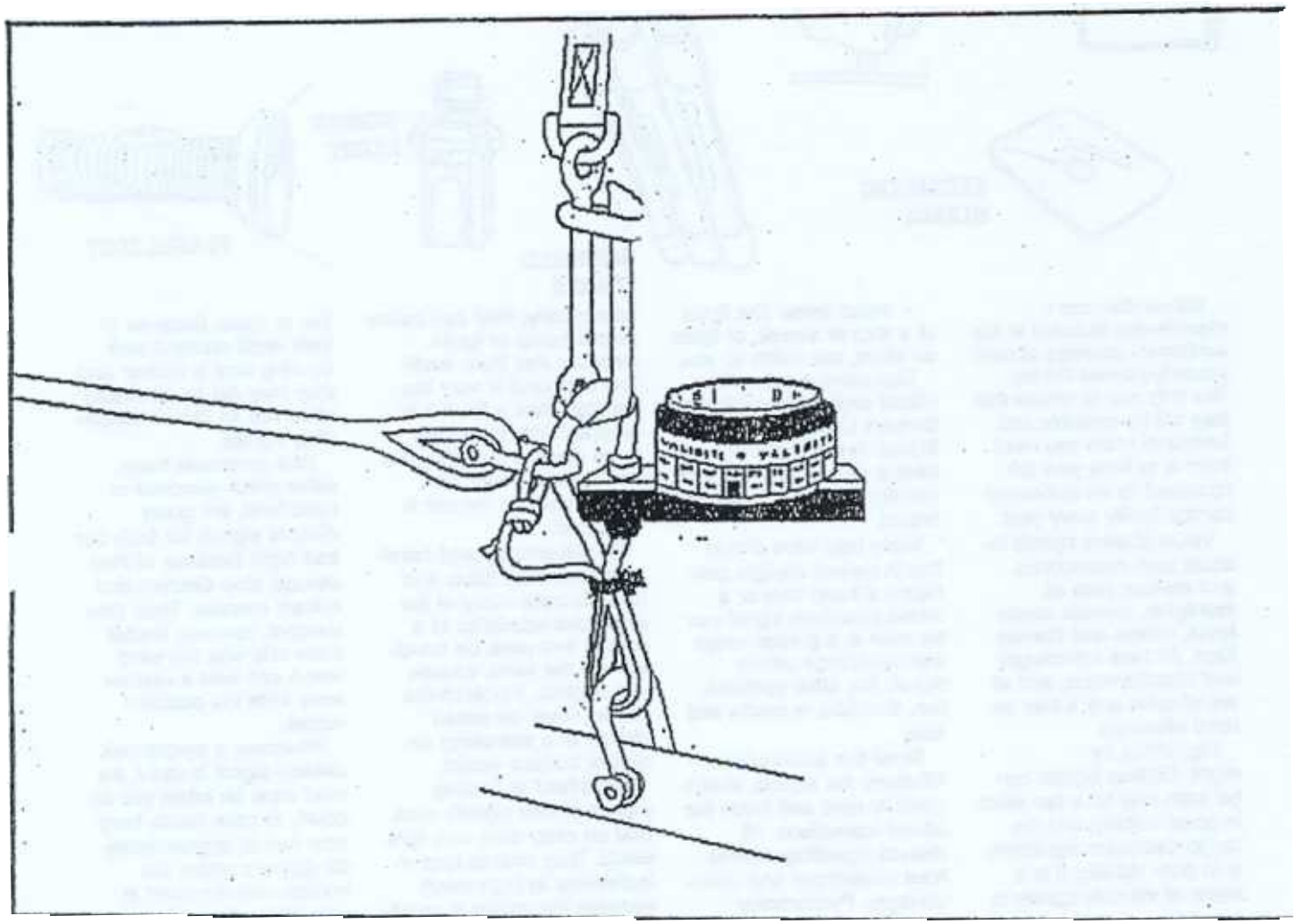
Notes

1- Drop-launching of the raft requires a bypassing of the weak link so that the vessel will keep a strong hold on the raft as it floats alongside for the embarkation of personnel. A few feet of painter pulled out of the raft container and made fast to the cleat will bypass the weak link.

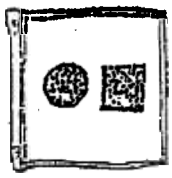
Float-free Crib of Removable Stanchions and Bars

HAMMAR H2O

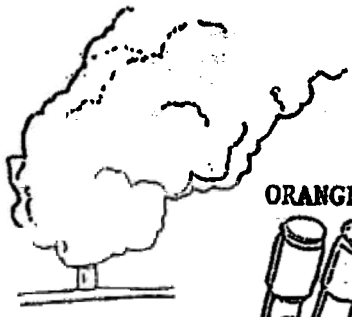
HYDROSTATIC RELEASE FOR LIFERAFTS



The Use of Distress Signals

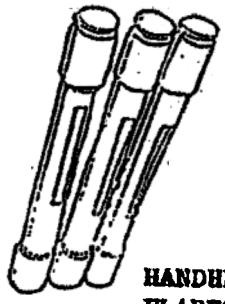


DISTRESS FLAG



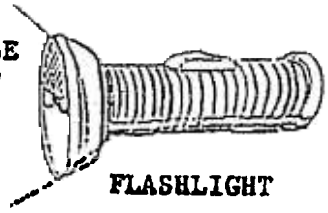
ORANGE SMOKE

SIGNALING MIRROR



HANDHELD FLARES

STROBE LIGHT



FLASHLIGHT

Visual distress signals–are included in the equipment package aboard properly-packed liferafts. The only way to ensure that they will be available and functional when you need them is to have your raft repacked by an authorized service facility every year.

Visual distress signals include both pyrotechnics and devices such as flashlights, portable strobe lights, mirrors and distress flags. All have advantages and disadvantages, and all are of value only if they are used effectively.

Signalling by night–Distress signals can be seen only for a few miles in good visibility, and the range decreases significantly in poor visibility. It is a waste of valuable signals to use them unless the following conditions exist:

- *Parachute signals:* You have good reason to believe that a rescue ship, aircraft or inhabited shore is within the estimated visibility range of your position based on prevailing atmospheric conditions.
- *Hand flares:* The lights of a ship or aircraft, or lights on shore, are visible to you.

Signalling by day–The official daylight signal is the Buoyant Orange Smoke Signal. These, however, have a very limited range of visibility especially in a still breeze.

Many tests have shown that in normal daylight conditions a hand flare or a rocket parachute signal can be seen at a greater range than an orange smoke signal. The ideal combination, therefore, is smoke and flare.

Read the instructions–Whatever the signals, always carefully read and follow the affixed instructions. All distress signalling devices have advantages and disadvantages. Pyrotechnics make excellent distress signals, but they can be used only once, and they can cause injury or property damage if not properly handled.

Pyrotechnics–Flares and smoke signals may expel ash and slag as they burn. Even though these particles cool quickly, they can cause painful burns or ignite materials that burn easily. The flare itself is very hot and can start a fire if it is dropped. You must hold these devices over the side and in such a way that neither you nor the raft is damaged.

Pistol-launched and hand-held parachute flares and meteors have many of the same characteristics of a firearm and must be handled with the same caution and respect. Pyrotechnics should never be aimed directly at a searching aircraft or surface vessel.

Hand-held or floating orange smoke signals work best on clear days with light winds. They tend to lose effectiveness in high winds because the smoke is rapidly dispersed.

Red hand-held flares can be used by day, but are most effective at night or in restricted visibility such as fog or haze.

Pistol-launched or self-contained rocket-propelled red meteors can be used by day, but are most effective at night. Because of their rapid descent their burning time is shorter and they may not be as readily observed as slower descending signals.

Red parachute flares, either pistol-launched or hand-held, are good distress signals for both day and night because of their altitude, slow descent and brilliant intensity. Their slow descent, however, makes them drift with the wind which can lead a rescuer away from the disabled vessel.

Whenever a pyrotechnic distress signal is used, the wind must be taken into account. In calm winds keep your arm at approximately 60 degrees above the horizon with the wind at your back when firing the device. As the wind increases, increase the angle of your arm up to (but not more than) about 80 to 85 degrees. Never fire a pyrotechnic device straight up or in a direction that may cause it to land on your boat or another boat.

COMMERCIAL VESSEL SAFETY

FACT SHEET

406 MHZ EPIRB SIGNAL REGISTRATION

SUBJECT: Carriage and Registration of 406 MHz Emergency Position Indicating Radio Beacons (EPIRB).

REGULATIONS: 46 CFR 180.64, 46 CFR 117.64, 47 CFR 80.1061(f)

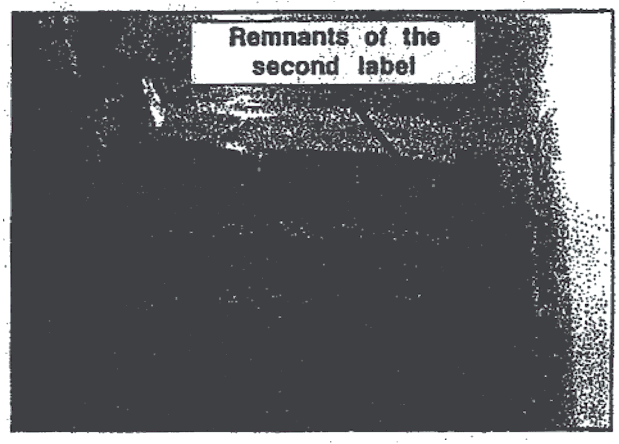
APPLICABILITY: All small passenger vessels operating beyond the 3 NAUTICAL MILE line, as found on National Ocean Service Charts.

PROBLEM: Some small passenger vessels fitted with 406 MHz EPIRB's have improperly or failed to register the 406 MHz EPIRB beacon signal, which will prevent timely, accurate identification of the vessel in distress in the event of an EPIRB transmission.

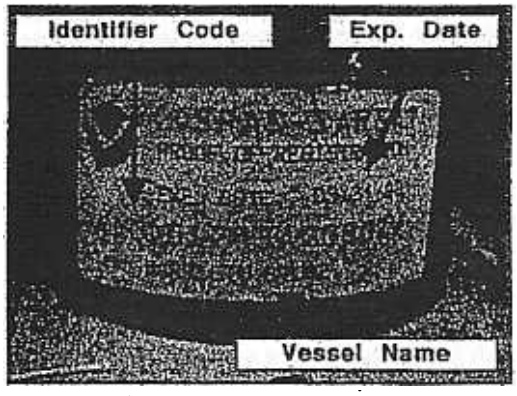
Each 406 MHz EPIRB is designed to transmit a unique identifier code. One of the largest advantages of the 406 MHz EPIRB system is that each EPIRB signal can be registered in a data base to the vessel on which it is located. In the event of a transmission from that EPIRB, the signal registration feature allows the Coast Guard to immediately identify the vessel involved.

Quick and accurate identification of a vessel transmitting an EPIRB signal is critically important. It allows the Coast Guard to issue an urgent VHF marine information broadcast alerting other vessels that may be in the immediate area of the stricken vessel, to make emergency telephone notification to persons designated by the vessel owner, and to provide search and rescue units with an accurate description of the vessel in distress. EPIRB registration is also crucial in the prompt resolution of accidental transmissions of EPIRB's, which continue to the largest source of EPIRB transmissions.

The EPIRB unique identifier code, also referred to as a hexadecimal code, can be found on a white label positioned on the side of the EPIRB. This code will be a 15 digit combination letter and number code. When registering the signal of this EPIRB, it is critically important that exact code be printed legibly on the registration form. Errors in the recording of this code number will prevent accurate identification of the EPIRB in the event of transmission.



U.S. Coast Guard personnel recently found this EPIRB on a commercial vessel. A service facility had replaced the internal microprocessor of the EPIRB, and had affixed a second code identification label over the original label. The second label failed (see remnants on the right). This exposed the original label, which bears a now incorrect identifier code.



Mariners should ensure that their EPIRB beacon ID codes are properly registered with NOAA. Every registered beacon will be supplied a registration verification label, which should be affixed to the EPIRB. The identifier code listed on the label should be carefully cross checked with the manufacturer's identifier code label to ensure that it is correct.

Mariners with questions on EPIRB registration can contact this office or NOAA at 1-888-212-SAVE.

The Use of Distress Signals

EPIRB (emergency position-indicating radio beacons) are vital in distress situations, especially where radio communications have not been or cannot be established. If you have an EPIRB, turn it on as soon as possible and leave it on. If it is Class "A" (automatic), be sure that it is floating properly. A continuous transmission provides the best hope of rescue.

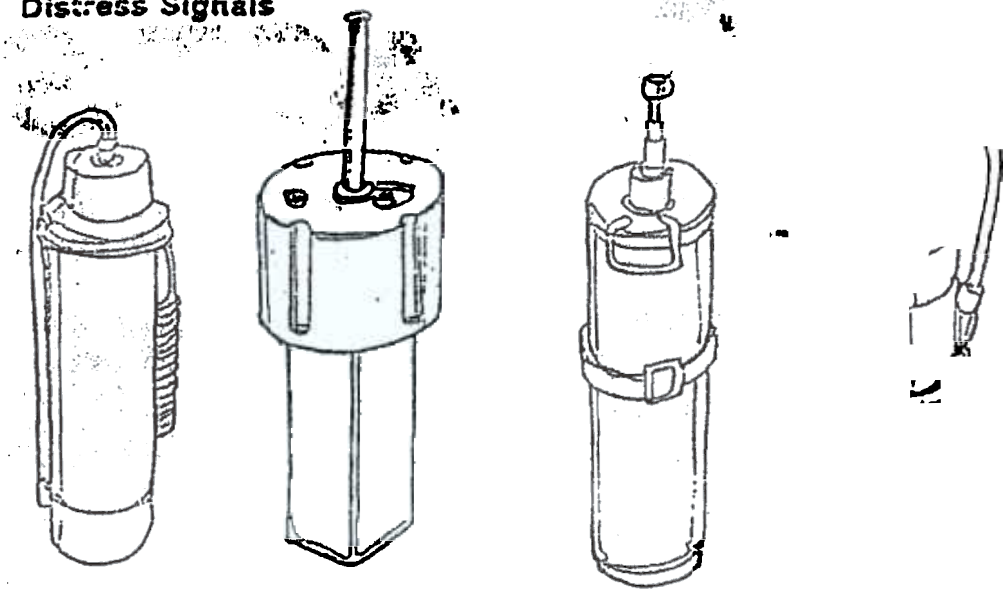
No piece of survival gear is foolproof, and EPIRBs are no exception. Activating an EPIRB may not result in an immediate rescue. Your survival and rescue depend on good judgment and using good quality, well-maintained equipment.

The lanyard attached to the EPIRB should be securely fastened to the raft or to an individual in the water.

Most EPIRBs operate best when floating with the antenna vertical.

In rough conditions, the EPIRB should be operated inside the liferaft, even though this may reduce the range of the signal. A reduced signal is better than a lost EPIRB. Hold it upright, clear of the raft and do not touch the antenna. *Caution:* EPIRBs with water-activated switches must be kept in the water.

EPIRBs should be renewed and serviced according to the manufacturer's recommendations.

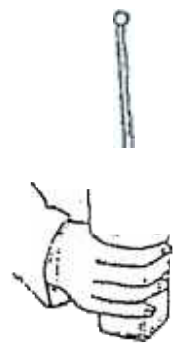


EPIRB's come in a variety of shapes and sizes. They may be either Class A (automatic), Class B (manual) or Class C (for less than 20 miles offshore).

Testing

To test a Class "A" (automatic) or Class "B" (manual) EPIRB you will need the EPIRB, an FM radio receiver, a bucket with enough salt water to activate the water-activated switch (if necessary), and a watch.

- Operate the battery test switch. Turn on the FM radio and tune it to 99.5 MHz. *Check the time.* The full-power test can be made only during the International Distress Frequency test period (the first five minutes of any hour).
- Before placing an EPIRB with a water-activated switch in the water, examine the sealing gasket. If the gasket is missing, torn or loose, do not conduct the immersion test because you might ruin the EPIRB.
- When the time is right, activate the EPIRB. Watch the indicator lamp and listen to the radio. Note: You cannot hear the EPIRB operating unless the radio is Guard approved.



Testing an EPIRB improperly could misdirect rescue units.

NEW REQUIREMENTS

Fire protection requirements are found in 46 CFR 181 in both the new and old regulations. Per 46 CFR 181.115/118.115, existing vessels are not required to meet the new regulations, except in the following cases:

1. New installations of fire protection equipment must meet the new regulations. Replacement of equipment installed before March 11, 1996 need not meet the new regulations.

2. Existing vessels with a hull, machinery space boundary bulkhead, or deck, made of wood, fiber reinforced plastic, or sheathed on the interior in fiber reinforced plastic must comply with the fixed fire fighting system requirements of 46 CFR 181.400 as of March 11, 1999.

GENERAL CONSTRUCTION AND INTERIOR FURNISHINGS (46 CFR 177.10-5/177.405)

The general construction, arrangement and furnishings of a vessel must minimize fire hazards as far as reasonable and practical. The following requirements apply to all vessels:

Internal combustion engine exhausts, boiler and galley uptakes must be kept clear of, and be insulated from combustible material.

Machinery and fuel tank spaces must be separated from accommodation spaces by boundaries that prevent the passage of vapors.

Paint and flammable liquid lockers must be made of, or lined with steel.

All waste containers in passenger lounges below the main deck must have covers, be constructed of noncombustible material, have no openings in the sides or bottom, and be stowed away from heat producing equipment.

Mattresses must be covered with fire resistant treated material.

Carpeting should be 100% wool or equivalent and may not extend up a bulkhead more than 4 inches.

Curtains and Drapes should be kept to a minimum and be fire resistant, and not be within 3 feet of cooking or heating appliances.

Bulkheads with carpeting, fabric or other highly combustible material are not permitted on bulkheads.

Resin used in fiber reinforced plastic must fire retardant, having an ASTM E-84 flame spread of not more than 100.

Insulation must be noncombustible if required for structural fire protection and meet the standards of 46 CFR 164.007 and 164.009. Limited combustible insulation may be used in a machinery space. Insulation around accommodation or control spaces must be noncombustible for vessels with more than 150 passengers and have very limited flammability/smoke/toxicity for vessels with under 150 passengers. Polyurethane foam is not permitted.

Existing vessels certificated for over 150 passengers must comply with the structural fire protection requirements for passenger vessels in 46 CFR 72.05.

New vessels, and existing vessels which undergo major alterations or conversions must comply with the new regulations of **46 CFR 177.115.**

New vessels certificated for over 150 passengers or which have overnight accommodations for more than 49 passengers must comply with the requirements of **Subchapter K (46 CFR 114-122).**

POWER DRIVEN FIRE PUMPS (46 CFR 181.10-1/181.300)

Under new and old regulations, a self priming, power driven fire pump must be installed on the following vessels:

1. Ferry vessels.
2. Vessels that carry more than 49 passengers.
3. Vessels more than 65 feet in length.

The power driven pump must have a minimum capacity of 50 gallons per minute and a pressure of 60 psi at the pump outlet. Ferry vessels not more than 65 feet in length, and carrying not more than 49 passengers, are required only a power pump with a 10 gpm capacity and capable of projecting an effective stream of water 25'.

Under the new regulations **(46 CFR 181.300)**, the fire pump must be capable of both remote operation from the operating station and local, manual operation at the pump.

The new regulations **(46 CFR 181.610)** require that all vessels not equipped with a power driven fire pump must have three 2 gallon buckets on lanyards and stenciled " FIRE BUCKET" . The new regulations also delete the requirement for all vessels to have a hand operated portable fire pump.

The old regulations require vessels over 65' in length to have at least 2 fire hydrants. The new regulations **(46 CFR 181.310)** simply state that all vessels have a sufficient number of fire hydrants to reach any part of the vessel with a single length of fire hose

FIXED FIRE FIGHTING SYSTEMS (46 CFR 181.20/181.400)

Under the old regulations, fixed carbon dioxide fire fighting systems are required in machinery and tank spaces using gasoline as fuel, paint lockers and similar spaces for hazardous or flammable materials, and cargo spaces used for combustible cargo which are inaccessible during a voyage.

The new regulations include these spaces, and add a requirement for a fixed system in any propulsion machinery space, any space with an internal combustion engine of greater than 50 hp, any space with an oil fired boiler, any space containing gasoline tanks or machinery, and spaces containing liquors of 80 proof or higher stored in containers of 2 gallons or more.

Existing vessels with a hull, deck, or machinery space bulkhead composed of wood or fiber reinforced plastic, or sheathed on the interior in fiber reinforced plastic, must comply with the new fixed fire fighting systems requirements as of March 11, 1999.

DESIGN, INSTALLATION, AND TESTING OF FIXED FIRE FIGHTING SYSTEMS

The new regulations incorporate many of the requirements of Subchapter H (Passenger Vessels) for details concerning the design, installation, and testing of fixed fire fighting systems. Although the old regulations simply stated that installation be " to the satisfaction of the OCMI" , Subchapter H requirements have generally been enforced and accepted as industry standards wherever fixed CO2 systems are installed.

Complete requirements for new fixed fire fighting systems are found in 46 CFR 181.410. The following are some of the key provisions of a proper CO2, Halon or other approved " clean agent" fixed fire fighting system:

Halon fixed firefighting systems may be used in lieu of fixed CO2 systems required in subpart 181.20 or where fixed CO2 systems are permitted except that Halon is not acceptable in cargo spaces used for combustible cargoes. Halon is not effective in extinguishing or controlling deep seated Class " A" fires.

A single system may protect more than one space. The quantity of extinguishing agent must be at least sufficient for the single largest space protected.

Only one system approved under this subpart is permitted in each protected space; i.e. two smaller systems may not be used in lieu of one larger system.

Valves and system controls must be located outside the space protected.

A system must have releasing controls at the storage cylinders. A normally manned space must also have releasing controls at the main exit from the space.

Systems protecting manned spaces must have an approved alarm and time delay device which will sound an alarm and delay release of the system for 20 seconds, or the time necessary to evacuate the space, whichever is longer.

Valves and controls must be protected from damage or accidental release. Pull cables must be enclosed in conduit. The system must include a device to automatically shut down power ventilation and engine air intakes to the protected space.

Piping for the system must be protected inside and outside from corrosion and be securely supported and protected from damage.

Drains and dirt traps must be fitted to prevent the accumulation of dirt and moisture in the piping

Piping passing through accommodation spaces must not be fitted with drains or other openings within such spaces.

Piping will be subject to an installation test pressurizing the piping to check for leaks or flaws in the system.

Systems must be maintained and periodically tested in accordance with the manufacturer's instructions and existing Coast Guard regulations.

Fixed fire fighting systems must include the instructions and warning placards required by 46 CFR 185.612.

FIRE DETECTING SYSTEMS (46 CFR 181.400/118.400)

The new regulations contain a new requirement for fire detection systems meeting the requirements of 46 CFR 76.27 in the following spaces:

A space containing propulsion machinery.
A space with an internal combustion engine of more than 50 hp.
A space with an oil fired boiler.
A space with machinery powered by gasoline.
A space with a gasoline fuel tank.

A fire detecting system is made up of sensors connected to a central alarm cabinet with visual and audible alarms in the pilothouse or fire control station. Vessels over 150 feet in length must also have an alarm panel in the engine room.

A diagram indicating the location of the various detecting zones, and giving instructions on the use of the system must be posted near the central alarm panel or cabinet. The diagram must also include instructions for the maintenance and testing of the system. A licensed officer of the vessel must witness or conduct periodic tests

Existing vessels with a hull, machinery space boundary bulkhead, or deck, made of wood, fiber reinforced plastic, or sheathed on the interior in fiber reinforced plastic must comply with the fixed fire fighting systems requirement of 46 CFR 181.400/118.400 as of March 11, 1999.

Detectors, central panels, and alarms must be Coast Guard approved.

PORTABLE FIRE EXTINGUISHERS (46 CFR 181.500/118.500)

The new regulations reduce the number of portable fire extinguishers required on small passenger vessels. This reduction is based on the installation of fixed fire fighting systems in accordance with the new regulations. Existing vessels must therefore continue to comply with the old requirements for portable extinguishers until the other new requirements of this part are met.

ANNUAL INSPECTION/5 YEAR HYDRO REQUIREMENTS

Portable CO2 and stainless steel dry chemical fire extinguishers must be hydrostatically tested every 5 years. All other dry chemical extinguishers must be hydrostatically tested every 12 years.

The approval specification for portable fire extinguishers, 46 CFR 162.028, requires all fire extinguishers to be listed and labeled by a recognized independent laboratory. For CO2 extinguishers, the laboratory is Underwriters Laboratories (UL).

UL tests extinguishers with the assumption that maintenance will be conducted in accordance with a nationally recognized standard, the National Fire Protection Association (NFPA) Standard No. 10, entitled " Portable Fire Extinguishers" . This is stated on every extinguisher label. NFPA Standard No. 10 specifies a hydrostatic test interval of five years, subject to DOT cylinder specifications.

DOT specifications for cylinders used for CO2 fire extinguishers (DOT-3A, 3AA) also specify a test interval of five years.

TYPE, NUMBER, AND LOCATION OF PORTABLE FIRE EXTINGUISHERS

OLD REGULATIONS - TABLE 181.30-1(a)

SPACE PROTECTED	NUMBER REQUIRED	CLASS	MEDIUM	SIZE
Operating station	1	B-I	Foam	1 gal
			CO2	4.0 lb
			Dry Chem	2.0 lb
Propulsion space, gasoline fuel system w/ fixed C02 system	1	B-I	Foam	1 gal
			CO2	4.0 lb
			Dry Chem	2.0 lb
Propulsion space, gasoline fuel system no fixed Co2 system	2	B-II	Foam	2 gal.
			CO2	15 lb
			Dry Chem	10 lb
Propulsion space diesel fuel system w/ fixed CO2 system	None			
Propulsion space diesel fuel system no fixed CO2 system	2	B-II	Foam	2.5 gal
			CO2	15 lb
			Dry Chem	10 lb
Vehicle Space	1 for every 5 vehicles	B-II	Foam	2.5 gal
			CO2	15 lb
			Dry Chem	10 lb
Accomodations And galley spaces	1	B-II	Foam	2.5 gal
			CO2	15 lb
			Dry Chem	10lb

NEW REGULATIONS - TABLE 181.500(a)

SPACE PROTECTED	NUMBER REQUIRED	CLASS	MEDIUM	SIZE
Operating station	1	B-1, C-1	Halon	2.5 lb
			CO2	4 lb
			Dry Chem	2 lb
Machinery Space	1	B-II, C-II located just outside the space	CO2	15 lb
			Dry Chem	10 lb
Open Vehicle Deck	1 for every 10 vehicles	B-II	Foam	2.5 gal
			Halon	10 lb
			CO2	15 lb
			Dry Chem	10 lb
Accomodation Space	1 for each 2,500 sq. ft.	A-II	Foam	2.5 gal
			Dry Chem	10 lb
Galley, Pantry, Concession Stand	1	A-II, B-II	Foam	2.5 gal
			Dry Chem	10 lb

MACHINERY AND EQUIPMENT

NEW REQUIREMENTS

The machinery and equipment requirements are found in 46 CFR 182 in both the new and old regulations and subpart 119 for subchapter K. Per 46 CFR 182.115, existing vessels are not required to meet the new regulations, except in the following cases:

New installations of machinery must meet the new regulations. Replacement of equipment installed before March 11, 1996 need not meet the new regulations.

An existing vessel equipped with gasoline powered machinery must be equipped with a flammable vapor detection device meeting 46 CFR 182.480 as of March 11, 1999. The requirements of such a system include:

The system must meet UL standard 1110, or be approved by an independent laboratory.

The system must be operational for 30 seconds before engine start up and continue operating while the engine operates.

The system must provide a visual and audible alarm at the operating station A sensor must be located in the lowest part of the machinery space, and in the lowest part of a fuel tank space if separate from the machinery space.

Procedures for checking the proper operation of the system must be posted at the primary operating station. The system must be self monitoring and include a ground fault indication alarm.

Existing vessels must comply with the bilge high level alarm requirements in 46 CFR 182.530 as of March 11, 1999. This regulation requires that, in vessels of at least 26 feet, a visual and audible alarm at the operating station must indicate high water in the following spaces:

A space with a through hull fitting below the deepest load waterline.

A machinery space bilge, shaft alley bilge, or other space subject to flooding from sea water piping within the space.

A space with a non watertight closure, such as a space with a non watertight hatch on the main deck.

Wooden vessels must also have high level alarms in all watertight compartments, except small buoyancy chambers.

ENGINE COOLING

In general, all engines must be water cooled. Auxiliary engines with self contained fuel systems may be air cooled when installed on an open deck. The engine head, block, and exhaust manifold must be water jacketed and cooled by water from a pump which operates whenever the engine operates. Closed, fresh water systems may also be used. Keel and grid coolers must be designed to prevent flooding, with shut off valves located where the cooler piping penetrates the hull. Shut off valves are not required if the keel cooler is " integral to the hull" i.e., the cooler structure is the same thickness to the hull, faired to the hull, secured with full penetration welds, and with any flexible connections located well above the waterline.

EXHAUST COOLING

Like engine cooling systems, most exhaust pipes must be water cooled. Exceptions are permitted in certain vertical exhausts, and horizontal pipes that do not pass through berthing spaces, terminate above the waterline, and are arranged to prevent the entry of water from rough seas. Exhaust pipes on air cooled engines need not be water cooled.

Exhausts should be installed to provide adequate clearance and protection from combustibles and to properly support exhaust system weight and vibration. Refer to the American Boat and Yacht Council Standards, Project P-1, ABYC P-1-86.

VENTILATION

Engine and fuel tank spaces are required to be ventilated to prevent the buildup of flammable vapors. A space containing machinery powered by, or fuel tanks for, gasoline engines must have both natural and powered ventilation. Blower motors must not be installed in a duct, and must be as high above the bilge as practical. Blower blades must be non sparking. Blower motors for gasoline spaces must be interlocked with the starting switch, so that the blowers are started before the engine starts.

FUEL SHUT OFF VALVES

Fuel shut off valves must be fitted in the fuel supply lines. One valve must be at the tank connection, and one must be at the engine end of the fuel line. The shut off valve at the tank must be manually operable from outside the compartment in which the valve is located, preferably from the weather deck. As an alternative, if suitably protected from flames, the valve handle may be located so that the operator does not have to reach more than 12 inches into the space where the valve is located.

BILGE PUMPS

All vessels must be capable of draining all watertight compartments. The table below details the number, type, and capacity of required bilge pumps

NUMBER OF PASSENGERS	LENGTH OF VESSEL	NUMBER AND TYPE REQUIRED	CAPACITY
Any number	More than 65'	2 fixed power pumps	50 gpm
More than 49 and all ferry vessels	Not more than 65'	1 fixed power pump & 1 portable hand pump	25 gpm 10 gpm
Not more than 49 except ferry vessels	26'-65'	1 portable hand pump 1 fixed hand pump & 1 portable hand	10 gpm 10 gpm 5 gpm
Not more than 49 except ferry vessels	Less than 26'	1 portable hand pump	5 gpm

A second power pump is an alternative to a hand pump only if it is supplied by a separate source of power. Individual power pumps used for separate spaces must be controlled from a central manifold. New vessels must be equipped with a light for each pump at the operating station to indicate pump operation.

All vessels of 26 feet or more must be provided with individual bilge lines and bilge suctions for each watertight compartment. The space forward of the collision bulkhead need not be so equipped provided normal leakage can be removed with a portable pump or other equipment.

INDIVIDUAL ELECTRIC BILGE PUMPS

Old "T"

Submersible electric bilge pumps may be used in lieu of the required bilge suction piping and manifold system required for vessels of 26 feet in length and over (46 CFR 182.25-5(a)). The intent of the requirements in 46 CFR 182.25 is to provide each compartment of a vessel with an efficient and effective means of pumping out the bilge. Small electrically operated pumps have been in use throughout the marine industry in smaller vessels for many years and have a history of proven reliability. These pumps use a float switch to automatically activate the pump when the water in a compartment reaches a certain level. This means that the pump will be in operation probably long before anyone on board is aware of a problem. Rule or similar type electric bilge pumps may be allowed as direct substitutes for the required fixed piping system required by 46 CFR 182.25 subject to the following conditions:

Where the vessel is required to have two bilge pumps, electric pumps may be substituted for only one of the two required.

Overboard discharge through-hull fittings for these pumps shall not be placed lower than 6 inches above the load water line.

Where the vessel is required by 46 CFR 181.10 to be fitted with fixed power driven fire pumps, such shall be provided in addition to the electric bilge pumps.

There shall be located at the helm station a means of manual operation of automatic bilge pumps.

Individual electric pumps shall each have a capacity in accordance with the above table.

The size of the discharge piping for such pumps shall be in accordance with 46 CFR 182-25-1(b) and piping material shall be in accordance with 46 CFR 182.40. A suitable marine flexible hose may also be used.

New "T" and New Installations

Rule or similar type submersible electric bilge pumps shall be allowed as substitutes for the fixed piping system required by 46 CFR 182.520 subject to the following conditions:

The pump is listed by Underwriters' Laboratories Inc. or another independent laboratory and shall have a capacity in accordance with the table in 46 CFR 182.520 (a).

The pump is used to dewater not more than one watertight compartment.

The pump is permanently mounted.

The pump is equipped with a strainer that can be readily inspected and cleaned without removal.

The pump discharge line is suitably supported.

The opening in the hull for the pump discharge is placed as high above the waterline as possible.

A positive shutoff valve is installed at the hull penetration.

The capacity of the electrical system, including wiring, and size and number of batteries, is designed to allow all bilge pumps to be operated simultaneously.

There shall be a means of manual operation of automatic bilge pumps located at the helm station.

The size of the discharge piping for such pumps shall be in accordance with 46 CFR 182.510.

Vessels of at least 26' in length must have a visual and audible alarm at the operating station to indicate high water level in normally unmanned spaces.

Where the vessel is required by 46 CFR 181.300 to be fitted with fixed power driven fire pumps, such pumps shall be provided in addition to the electric bilge pumps.

INSPECTION OF ELECTRIC WATER HEATERS

An electric water heater is acceptable for shipboard use if it:

(1) has a capacity of 120 gallons or less

(2) has a heat input of 200,000 btu/hour or less

(3) is listed in Underwriter's Laboratories under UL 174 or 1453

(4) is protected by a pressure-temperature relief device

(5) is installed and secured from rolling by straps or other devices to the satisfaction of the OCMI.

A water heater must meet parts 52 and 63 of this chapter if it is rated at more than 100 psig or 250 F.

Water heating boilers not meeting the above criteria must meet the requirements of 46 CFR Parts 52 and 63. Low pressure water heaters in the OCMI Portland zone are inspected as follows:

Fireside examination under normal working hydrostatic pressure,

2. Waterside examination (if accessible)

3. Operational test of control and safety systems as guided by 46 CFR 63

4. Operational test of the safety (relief) valve.

STEERING SYSTEMS

Regulations for existing vessels (46 CFR 182.30) simply state that all vessels be equipped with " suitable steering apparatus" . Steering is a vital system, and owners should ensure that their steering system is in excellent material and operational condition. An auxiliary steering system is required for most vessels not equipped with twin props.

Regulations for new vessels (46 CFR 182.610) are much more detailed. For example, the main steering gear on all new vessels must be capable of moving the rudder from 35 degrees on one side to 30 degrees on the other side in no more than 28 seconds, with the vessel moving ahead at full speed. There are also requirements for rudder stops, rudder angle indicators, and limit switches on new vessels with power driven steering.

Under 46 CFR 185.320, new and existing vessels must test their steering gear, signaling whistle, propulsion controls, and communications systems prior to getting underway for a voyage. This testing need not be conducted more than once in any 24 hour period.

ELECTRICAL SYSTEMS

NEW REQUIREMENTS

Electrical systems requirements are found in 46 CFR 183 in both the new and old regulations and subpart 120 for K vessels. Per 46 CFR 183.115, existing vessels are not required to meet the new regulations, except in the following cases:

1. New installations of electrical equipment must meet the new regulations. Replacement of equipment installed before March 11, 1996 need not meet the new regulations.

2. Repair or replacement of cable and wire must meet the new regulations. New regulations covering cable and wire are found in 183.340.

3. Existing vessels must meet the navigation lights requirements of 183.420. This regulation requires all vessels to have navigation lights in compliance with the International and Inland Navigation Rules. These requirements were previously found only in 33 CFR 81. Vessels over 65 feet in length must have navigation lights that meet UL 1104.

4. Existing vessels must be equipped with at least 2 portable battery lights. One such light must be at the operating station, the other at the access to the engine room.

The above requirements apply to all vessels after March 11, 1996. The following requirements apply to existing vessels.

PROTECTION FROM WET AND CORROSIVE ENVIRONMENTS

Electrical equipment in machinery spaces, or where exposed to splashing water, such as galleys and washrooms, must be dripproof. Electrical equipment exposed to the weather must be watertight. All electrical equipment exposed to saltwater must be corrosion resistant.

GENERATORS

Generators and motors must be mounted as high above the bilge as possible to avoid splash damage or contact with low lying flammable vapors. Generators must have overcurrent protection of not more than 115% of the full load rating. Generators on systems with potentials of 50 volts or more must be equipped with an ammeter and voltmeter.

SWITCHBOARDS

Switchboards must be in a dry, ventilated space, preferably outside the engine space. Switchboards must be of the dead front type. On systems with potentials of 50 volts or more, and all new vessels, nonconducting mats are required in front of all switchboards.

BATTERIES

Batteries must be located as high above the bilge as practical, secured to protect against shifting, and free from exposure to water splash or spray. Connections must be made to terminals with permanent connectors. Spring clips and other temporary clamp arrangements are prohibited. Batteries must be well ventilated and mounted in trays lined with, or constructed of material resistant to damage by the electrolyte.

ACCEPTABLE ELECTRICAL WIRE

All wire must have stranded copper conductors of minimum 14 AWG size. Stranded wire, as opposed to solid metal, protects wire from potential cracks or breaks due to vibration. The following specifications apply to wire used on existing small passenger vessels:

1. Cable which meets section 310-13 of the National Electrical Code, except cable with asbestos insulation or for use in a dry location.

2. Cable listed as " UL Boat Cable" or " UL Marine"

3. Cable which meets Subchapter J (Electrical regulations) section 111.60. This includes IEEE-45 and Military Specification shipboard cables.

Wiring must be installed with sufficient metal supports, plastic ties may be used to bundle, but not support wires. Wiring must be installed to avoid sharp bends, chafing, and splash hazards.

GROUNDING

On metal vessels, all major electrical equipment must be permanently grounded to the metal hull of the vessel. On nonmetal vessels, major electrical equipment must be connected to a common ground.

ELECTRICAL CONNECTIONS

All wire connections must be made in an enclosure such as a junction box or connection box, (46 CFR 183.05-50(b)). This rule is clearly stated and lists no exemptions.

OVERCURRENT PROTECTION

Overcurrent protection must be provided for all conductors. Overcurrent protection will open the electric circuit before the current reaches a value that causes a dangerous temperature in the conductor or its insulation. Steering gear systems should not be equipped with overcurrent protection.

Single pole breakers are acceptable for use in a 110 volt system provided that a polarity indicator is installed. This assures that the current carrying conductor will be properly protected by the single pole breaker. Without the polarity indicator installed a double pole breaker must be used in case the polarity is inadvertently reversed. Good examples for acceptable electrical systems can be found in American Boat and Yacht Council standards and recommended practices for small craft.

VITAL SYSTEMS (NEW VESSELS ONLY, 46 CFR 183.310/120.310)

The following vital systems, if powered by electricity, must have two separate sources of electric power:

Interior lighting, except decorative lighting,
Communications systems, including the PA system,
Navigation equipment and lights,
Fire main, CO2 and Halon systems,
Bilge system,
Steering and propulsion systems and controls.

Batteries sufficient to power the systems for 3 hours, along with a ship's service generator will meet 1 of the 2 source requirements.

LIGHT FIXTURES

Each lighting fixture globe, lens, or diffuser must have a guard or be made of high strength material, except in spaces where it is not subject to damage. Lighting fixtures may not be used as a connection box for a circuit other than the branch circuit supplying the fixture. Lamps must be secured against being displaced by the roll or pitch of the vessel.

Exterior light fixtures for systems of 50 volts or more must meet the requirements of UL 595, " Marine Type Electric Lighting Fixtures" . Each of these fixtures will have an UL 595 marking or approval sticker affixed to it. Lighting in accommodation, radio, galley, and similar interior spaces may comply with UL 1570, 1571, 1572, 1573, or 1574 as long as the general marine requirements of UL 595 are met. Should you wish to install a non UL listed fixture, you must provide this office with a line by line comparison to the UL standards showing equivalence. Fixtures for systems of less than 50 volts shall be a suitable marine type, acceptable to the attending Coast Guard Inspector.

EMERGENCY LIGHTING

" OLD T"

Each vessel must be equipped with one at least 2 portable battery lights, one at the operating station and the other at the access to the engine room.

Each vessel must have adequate emergency lighting fitted along the line of escape to the main deck from all passenger and crew accommodations spaces located below the main deck. The emergency lighting must automatically activate upon failure of the main lighting system. If not equipped with a single source of emergency power, batteries may be used provided the lights activate automatically, are not readily portable, are connected to a battery charger and have capacity for at least 6 hours of continuous operation.

" NEW T"

Each vessel must be equipped with one at least 2 portable battery lights, one at the operating station and the other at the access to the engine room.

Each vessel must have adequate emergency lighting fitted along the line of escape to the main deck from all passenger and crew accommodations spaces located below the main deck.

The emergency lighting must automatically activate upon failure of the main lighting system. If not equipped with a single source of emergency power, batteries may be used provided the lights activate automatically, are not readily portable, are connected to a battery charger and have capacity for at least 2 hours of continuous operation

SHORE POWER

On vessels with an electric system of more than 50 volts that connects to shore power, a shore power connection box and connecting cable must be permanently installed. A circuit breaker must be provided at the switchboard for this connection. On new vessels, the shore power circuit breaker must be interlocked with the vessel's power sources so that shore power and vessel power may not be operated simultaneously.

RADIO-TELEPHONE EQUIPMENT

Radios must be equipped with a separate circuit with overcurrent protection.

VESSEL CONTROL AND MISCELLANEOUS SYSTEMS

NEW REQUIREMENTS

These requirements are found in Part 184 of both the new and old regulations and subpart 121 for " K" vessels. Some requirements have been moved to this part from Part 185. Except where otherwise specified, existing vessels are required to comply with the new regulations as of March 11, 1996.

COOKING AND HEATING

Cooking and heating equipment must be suitable for marine use. Equipment designed and installed in accordance with the American Boat and Yacht Council (ABYC) A-3 (galley stoves), and A-7, or the National Fire Protection Association (NFPA) 302 complies with this requirement. Cooking systems using liquefied petroleum gas or compressed natural gas must meet the ABYC and NFPA standards specified in **46 CFR 184.240/121.240.**

Cooking equipment must have rails, guards, locks, etc to protect against injury due to movement of the vessel. Electric heaters must have thermal cutouts to prevent over-heating. Fireplaces and all other open flames are prohibited.

CONTROL AND INTERNAL COMMUNICATIONS SYSTEMS (46 CFR 184.602/620/121.602/620)

Unless equipped with multiple engines, each with independent pilothouse control vessels must comply with the following engine control requirements:

a. Have 2 independent means of controlling the propulsion engine. Control for engine speed, direction of shaft rotation, and engine shut down must be provided.

b. Also, have a means, independent of the engine's speed control, for shutting down a main propulsion engine at the main pilothouse control.

c. The engine control system must be designed so that a loss of power to the control system does not result in an increase in shaft speed or propeller pitch.

d. Unless direct voice communication is adequate, have a fixed means of 2 way communication between the main pilothouse and at the location of the secondary means of engine control and auxiliary steering.

PUBLIC ADDRESS SYSTEM (46 CFR 184.610/121.610)

Existing vessels must be equipped with a public address system by March 11, 2001. New vessels must be so equipped as of March 11, 1996. The details of such a system are as follows:

a. Vessels of more than 65 feet in length must have a fixed PA system which is audible throughout all spaces normally occupied by passengers and/or crew during normal operating conditions.

b. Vessels of not more than 65 feet may use a battery powered bullhorn provided it is audible throughout the accommodation spaces.

c. Vessels of not more than 65 feet, certificated for not more than 49 passengers, are not required to have a PA system or bullhorn provided normal voice announcements from the operating station are audible throughout the accommodation spaces.

FIRST AID KIT (46 CFR 184.710/121.710)

New and existing vessels must be equipped with a first aid kit as of March 11, 1997. The first aid kit need not be Coast Guard approved, but should include an appropriate amount and variety of first aid equipment for the vessel's intended service. (See enclosure #13).

NAVIGATION LIGHTS AND SOUND DEVICES

Navigation light requirements are found in the International Rules of the Road (COLREGS) and 33 CFR 88. 46 CFR 183.420/120.420 also requires that vessels over 65' long have navigation lights that meet UL 1104. This is the only new navigation light regulation.

NAVIGATION LIGHTS

All vessels must be equipped with navigation lights and sound producing devices as prescribed in the Inland or International Navigation Rules. Vessels operating seaward of the demarcation line must comply with the International Regulations for Preventing Collisions at sea, 1972, which is commonly referred to as the 72 COLREGS. Vessels inland of the demarcation line must comply with the Inland Navigational Rules Act of 1980 (Inland Rules). Compliance with the International Rules is automatic compliance with the Inland Rules. (See appended Chart of zone marking Inland Rule Areas.)

Rule 22 of the Inland/International rules specifies navigation light visibility requirements. ANNEX I of these rules gives technical requirements in terms of color, arcs and positioning.

SIDELIGHT PLACEMENT

Sidelights must not be " in front" of the forward mast (ANNEX I 2(g), 3(b)). This rule also applies to single masted vessels and requires sidelight repositioning on many vessels in the 20-50 meter range.

SIDELIGHT SCREENS

Sidelight screens must be painted matte (flat) black to comply with the 72 COLREGS/Inland Rules. Under Inland Rules, a vessel less than 20 meters in length must be fitted with screens only if they are necessary to bring the sidelights into compliance with the horizontal sector requirements of the Inland Rules.

SOUND DEVICES

Requirements for sound devices are contained in ANNEX III of the rules. These requirements are aimed at increasing the mariner's ability to identify targets audibly through the use of different sound characteristics for vessels of different length. The sounds produced by whistles, bells, and gongs should all be distinctive so that they are not confused with each other.

ELECTRONIC SOUND DEVICES

ANNEX III.2(b) specifies that a bell be made of corrosion resistant material and further specifies bell mouth diameter, etc. However, electronic devices which meet the sound requirements may be substituted for the mechanical equivalent if a manual backup is provided.

VESSELS LESS THAN 12 METERS IN LENGTH

These vessels are not required to carry whistles and bells that meet the technical standards in ANNEX III of the Navigation Rules. However, if no such equipment is carried, the vessel shall be provided with some other means of making an efficient sound signal.

NAVIGATION EQUIPMENT

NEW REQUIREMENTS

These requirements are found in Subpart D of 46 CFR 184/121. Although existing vessels are required to meet the " new" regulations, there are no changes to the navigation equipment requirements that apply to existing vessels.

COMPASSES - All vessels are required to have a suitable compass except vessels on a " rivers" route, non-self propelled vessels, or vessels operating in protected waters with short restricted routes. The compass should be illuminated except on vessels limited to daytime operations.

RADAR - Radar is not required on existing small passenger vessels but is highly recommended in Maine and New Hampshire waters due to quickly changing weather conditions. Radar is required on new small passenger vessels certificated for more than 49 passengers on a limited coastwise, coastwise, or oceans route.

ELECTRONIC POSITION FIXING DEVICES - Electronic position fixing devices, such as GPS, are required on new vessels certificated for an oceans route. (46 CFR 184.410/121.410)

FATHOMETERS - Fathometers are not required but are recommended for all vessels due to the rocky nature of coastal waters in this area.

CHARTS AND PUBLICATIONS

All vessels must carry adequate, up-to-date charts and nautical publications. Publications include U.S. Coast Pilot, Coast Guard Light List, and tide and current tables. (46 CFR 184.420/121.420).

MOORING EQUIPMENT

Ground tackle and hawsers are required by **46 CFR 184.300/121.300**. The following table sets forth the guidelines used by this office for determining appropriate size, weight, and type. If vessels have serviceable equipment of at least 80% of the sizes indicated here, such equipment will be allowed to remain in use until it becomes unserviceable.

" T" -BOAT ANCHOR/CHAIN REQUIREMENTS

Vessel Length	Manila Rope*		Danforth**			Northill**		
	Circumference	length	Standard	Hi-tensil		symbol	wt.	Hold
			Wt & hold	wt & hold				power
			Symbol power	Symbol power				
17-24'	1 ¾"	270'	8S, 9SR 480	5H	400	6R	12	450
25-32'	1 ¾"	270'	13S, 16SR 720	12H	900	12R	27	900
33-38'	2 ¼"	270'	22S 1200	12H	900	12R	27	900
39-44'	2 ¾"	270'	40S 1500	20H	1250	20R	46	1500
45-54'	3 ¼"	270'	65S 2300	35H	1600	20R	46	1500
55-70'	3 ¾"	270'	85S 2700	60H	2400	30R	80	2200
71-90'	9/16" Galv	360'	130S 3100	90H	2900	50R	105	3200
	cable							
91-110'	5/8" Galv	360'	180S 3500			50R	105	3200
	cable							

*If synthetics, wire or chain are used, their strength should be at least equal to manila line.

S=Standard H=Hi Tensile
SR=Sure Ring R=Northill

The weights in the table are based on standard light weight anchors with high holding power such as the Danforth or Northill types. Suitable reductions in the anchor weights can be permitted on an equivalency basis for anchors of unusually high holding power such as Danforth Hi-Tensile. Conversely, if patent (stockless) anchors are used, the weight should be increased by 30%.

ANCHOR WINDLASSES

Generally, a small anchor (up to about 75-80 pounds), can be raised by hand by one person when fitted with a manila or synthetic line. Heavier anchors will require a mechanical hand or powered windlass. However, available manpower, means to secure the anchor line permitting a rest period while raising by hand may be considered. Wire and chain is not acceptable for raising of all but the smallest anchors by hand.

RADIO REQUIREMENTS

REQUIRED EQUIPMENT

All small passenger vessels that operate more than 1000 feet from land must be equipped with a VHF-FM radio (**46 CFR 184.502/121.502**). All vessels operating more than twenty miles offshore (Oceans) must be required to be equipped with a single side band (SSB) radio. A test of the required radios will be conducted by the Coast Guard at each inspection.

FCC REQUIREMENTS

Any vessel operating outside of the headlands is required to have a FCC Safety Radio Telephone Certificate, Radio Operator's License, and a Ship's Station License. The Federal Communications Commission (FCC) has issued an amendment to the rules dealing with the FCC inspection interval for small passenger vessels. The amendment changed the inspection interval from 2 to 5 years and it extended for 3 years any valid Safety Radiotelephone Certificate.

NO RADIO CHECKS ON CHANNEL 16 VHF-FM

The FCC prohibits routine radio checks with the Coast Guard on channel 16. The purpose of this rule is to relieve congestion on the distress channel. Radio checks may still be conducted by qualified radio technicians installing equipment or correcting deficiencies in the station's radiotelephone.

EMERGENCY BROADCAST PLACARD (46 CFR 184.506/121.506)

A durable placard must be posted next to all radios. The placard must describe emergency broadcast instructions specific to the vessel. The following text, modified as needed, will satisfy this requirement:

1. Ensure the radio is on.

2. Select channel 16 (or 2182 kHz for SSB radios).

3. Key microphone, and in a calm, slow voice say:

   " MAYDAY, MAYDAY MAYDAY" - for situations of immediate danger, or
   " PAN PAN, PAN PAN, PAN PAN" - for less urgent emergencies.

4. Say: " This is (vessel name), (vessel name), (vessel name), over."

5. Release the microphone button and listen for a reply. If there is no response, repeat steps 3 and 4.

6. Key microphone, and repeat " MAYDAY" , or " PAN PAN" and the vessel name

7. Describe your position, in latitude/longitude, and distance and bearing from a known position or point of land.

8. State the nature of distress i.e. fire, flooding, etc.

9. State the number of people on board, and the nature of any injuries

10. Estimate the present seaworthiness of the vessel.

11. Describe the vessel, i.e., length, type, color, etc.

12. Say: " I will be listening on channel 16" (or 2182 kHz).

13. Say: " This is (vessel name and call sign)"

14. If possible, stand by the radio to await further instructions.

REQUIRED MARKINGS

Certain markings are required on the vessels' hull, lifesaving equipment, and on firefighting and other safety related equipment. Although there have been small changes to the marking requirements found in 46 CFR 185, existing vessels may generally continue to comply with old regulations until the existing markings become illegible and require remarking. New hull markings are not required until the vessel's next drydocking.

HULL MARKINGS (46 CFR 185.602, 67.121, 123/122.602)

Vessels more than 65' long, vessels authorized to carry more than 12 passengers on an international voyage, and vessels with more than 1 deck above the bulkhead deck, exclusive of the pilot house, must be marked as follows:

1. Name, hailing port, and official number of the vessel

2. Permanent draft marks at each end of the vessel, or permanent loading marks on each side to indicate the maximum allowable draft and trim.

3. Name, hailing port must be in 4" numbers. The official number must be permanently marked on the main beam or similar location, in 4" numbers. Draft and loading marks must be in 8" by 1" horizontal lines.

4. On any vessel whose stability limits the number of passengers on an upper deck, the maximum number of passengers allowed must be marked in 1" letters and numbers at the entrance to each such deck.

LIFEFLOATS AND BUOYANT APPARATUS (46 CFR 185.604/122.604)

1. Vessel's name

2. Number of persons allowed,

3. Oars shall be marked with the vessel's name in clear letters and numbers.

INFLATABLE LIFERAFTS - Marked by the manufacturer or service facility.

RESCUE BOAT - The number of persons capacity must be marked or painted in clearly legible letters and numbers on each side of the bow.

RING BUOY - Vessel's name, reflective tape.

EMERGENCY POSITION INDICATING RADIOBEACON (EPIRB) - Vessel's name

LIFE PRESERVERS - Vessel's name, reflective tape

LIFE PRESERVER STOWAGE (If PFD's are not readily visible to passengers).

1. Containers shall be marked " LIFE PRESERVERS" .
2. Separate containers for children's life preservers shall be so marked.
3. Containers shall be marked with the number of life preservers contained.
4. All letters and numbers shall be at least 2 inches high.

REMOTE FUEL SHUTOFF VALVES - Marked in 1 inch letters indicating the purpose of the valve and the direction of operation.

WATERTIGHT DOORS AND WATERTIGHT HATCHES - Marked on both sides in at least 1 inch letters: **" WATERTIGHT DOOR - KEEP CLOSED"** or **" WATERTIGHT HATCH - KEEP CLOSED"** .

ESCAPE HATCHES/EMERGENCY EXITS **" EMERGENCY EXIT, KEEP CLEAR"** in 2" letters.

FIXED FIRE FIGHTING SYSTEMS - Instructions on the use of the system at the operating station, warning signs by fire fighting gas outlets, and other requirements per **46 CFR 185.612/122.612.**

PREPARATION FOR EMERGENCIES

Subpart E of 46 CFR 185 contains requirements for preparations for drills, training, and other measures to prevent or mitigate accidents before they happen. The purpose of the passenger lists, voyage plan, and passenger count requirements is to aid Search and Rescue units in the event of an accident. New and existing vessels must comply with these regulations by March 11, 1996 unless otherwise specified.

CREW AND PASSENGER LISTS (46 CFR 185.502/122.502)

A list of all persons that embark on and disembark from the following vessels must be kept. The list must be communicated to the vessel's representative ashore before departure and available to the Coast Guard upon request.

1. Vessels on a coastwise or oceans voyage where passengers embark or disembark to or from another vessel or port other than the port of origin.

2. Vessels carrying overnight passengers.

3. Vessels arriving from a foreign port.

VOYAGE PLAN (46 CFR 185.503/122.503)

A voyage plan, consisting of the date, time, and place of departure, planned route, and date, time, and place of arrival is required for the following vessels. The voyage plan must be communicated to the vessel's representative ashore before departure and available to the Coast Guard upon request.

1. Vessels on a coastwise or oceans voyage.

2. Vessels carrying over night passengers.

3. Vessels arriving from a foreign port.

PASSENGER COUNT (46 CFR 185.504/122.504)

All vessels, except those required to keep a passenger list, shall keep a written count of all passengers that embark on and disembark from the vessel. Before the vessel departs, the count must be communicated to the vessel's representative before departure and available to the Coast Guard upon request.

PASSENGER SAFETY ORIENTATION (46 CFR 185.506/122.506)

Before getting underway, the master of each vessel shall ensure that a public announcement is made informing all passengers of various safety information, including the location of emergency exits, survival craft, life jackets, and ring buoys; donning instructions for life preservers, procedures during an emergency, and the location and contents on the required emergency instruction placard.

EMERGENCY INSTRUCTIONS (46 CFR 185.510/122.510)

Emergency instructions, including the actions to be taken in the event of fire, heavy weather, or man overboard, must be posted at the operating station. The recommended format is on the following page.

46 CFR 185.514 requires that a " station bill" be posted on vessels more than 65' long requiring at least four crew members. The station bill sets forth the duties and duty station of each crew member in various emergencies.

46 CFR 185.516 requires a placard with instructions for the donning and use of life jackets be posted on all vessels. Instruction placards for inflatable survival craft are also required for vessels so equipped.

RECOMMENDED EMERGENCY INSTRUCTIONS (46 CFR 185.512/122.512)

ROUGH WEATHER AT SEA, CROSSING HAZARDOUS BARS OR FLOODING

1. Close all watertight and weathertight doors, hatches, and air vents to prevent taking water aboard or further flooding the vessel.

2. Keep bilges dry to prevent loss of stability due to water in bilges. Use power driven bilge pump, hand pump and buckets to dewater.

3. Align fire pumps to use as bilge pump if possible.

   Check all intake and discharge lines which penetrate the hull for leaks.

5. Keep passengers seated and evenly distributed.

6 Have passengers put on life preservers if the going becomes very rough or you are about to cross a hazardous bar.

7 Never abandon a vessel unless actually forced to do so

8. If assistance is needed use the International Distress call over radiotelephone or call the Coast Guard immediately. Follow the procedures on the emergency broadcast placard posted by the radiotelephone.

9. Prepare survival craft (liferafts, lifefloats) for launching.

PERSON OVERBOARD

1. Throw a ring buoy overboard as close to the person as possible.

2. Post a lookout to keep the person overboard in sight

3. Launch the rescue boat or maneuver the vessel to pick up the person

4 Have a crew member put on a lifejacket and safety line and prepare to jump into the water to assist the person overboard if necessary.

5. If person is not immediately located notify the Coast Guard and other vessels in vicinity by radiotelephone.

6 Continue search until released by Coast Guard.

FIRE AT SEA

1 Cut off air supply to fire - close hatches, ports, doors, and ventilators, etc. and shut off ventilation system.

2. Cut off electrical system supplying affected compartment, if possible.

3. If safe, immediately use portable fire extinguishers at base of flames for flammable liquid or grease fires or water for fires in ordinary combustible materials. Do not use water on electrical fires.

4. If fire is in machinery spaces shut off fuel supply and ventilation and discharge fixed extinguishing system if installed.

5. Maneuver vessel to minimize effect of wind on fire

6. If unable to control fire, immediately notify Coast Guard and other boats in the vicinity by radiotelephone, etc.

7. Move passengers away from fire, have them put on life preservers, and if necessary, prepare to abandon the vessel.

STATION BILL (46 CFR 185.514/122.514)

This requirement must be met by existing vessels until completion of the first inspection for certification after March 11, 1996.

A station bill must be posted by the master on a vessel more than 65' long and having a Certificate of Inspection requiring more than 4 crew members at any time, including the master.

The station bill must set forth the duties of each person in various emergencies. These duties must include, at a minimum, closing watertight doors and hatches, etc, preparing for launching survival craft, extinguishing fires, and mustering and control of passengers.

LIFE JACKET PLACARD (46 CFR 185.516/122.516)

Placards explaining the donning and use of life jackets must be posted in a conspicuous space on all vessels.

INFLATABLE SURVIVAL CRAFT PLACARDS (46 CFR 185.518/122.518)

Every vessel equipped with an inflatable survival craft must have placards with launching and inflating instructions posted in a conspicuous space.

DRILLS AND TRAINING

Small passenger vessel operators are required by 46 CFR 185.520/122.520 to conduct " sufficient drills and give sufficient instructions to make sure that all crew members are familiar with their duties during emergencies that necessitate abandoning ship or recovery of persons who have fallen overboard" . Drills and training are also required to ensure that " each crew member is familiar with his or her duties in case of a fire" .

The regulations further require that each rescue boat be launched in such a drill once a month if possible, and in any case not less than once within a 3 month period.

The OCMI, Portland's policy is that man overboard, fire, and abandon ship drills must be conducted and logged each month. Vessels which operate only during part of the year must conduct these drills before the start of the season, and monthly thereafter while the vessel is operating.

Satisfactory completion of underway drills will be required for issuance of a Certificate of Inspection. During the vessel's reinspection, underway drills are not required. However, the marine inspector should conduct underway drills during a reinspection if there is a question as to the ability of the crew or vessel to perform a drill satisfactorily. Drills conducted during Coast Guard inspections will meet the requirement for that month's drills.

The importance of frequent, realistic drills and training can hardly be overstated. Recent studies by the Coast Guard and other agencies indicate that at least 80% of all accidents are caused by " human error" rather than equipment failure. Drills and training are the best way to prevent accidents before they happen, and to ensure the vessel and crew can make the best possible response when they do happen.

POLLUTION CONCERNS

Public concern over pollution of coastal waters with trash, sewage, and, in particular, oil has risen sharply over the past few years. The major obstacle to achieving the goal of eliminating floating wastes is to identify the sources. For this reason, timely reporting of observations are critical to successful surveillance and investigation.

There are 3 primary laws that deal with dumping of waste materials into navigable waters:

1. The Federal Water Pollution Control Act (FWPCA) This law was enacted primarily to prevent and prohibit discharges of oil and hazardous substances in quantities that may be harmful. A discharge of oil into or upon the navigable waters of the U.S. which causes a film or sheen upon or discoloration of the surface of the water, or causes a sludge, or emulsion to be deposited beneath the surface of the water or upon the shoreline is prohibited. The FWPCA also requires that marine sanitation devices (MSD's) be installed on vessels with fixed toilets on board (see discussion on MSD's).

2. The Act to Prevent Pollution from Ships This law implements the protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships 1973 (MARPOL). The part most significant to small passenger vessel operations is Annex V which became effective on December 31, 1988. Annex V deals with the disposal of vessel garbage and is discussed in greater detail later in this section.

3. Title I of the Marine Protection, Research, and Sanctuaries Act of 1972 This law implements the international Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 1972, referred to as the London Dumping Convention, to which the United States is a party. The act prohibits, with certain exceptions, the dumping or transportation for dumping of " materials" into ocean waters.

OIL POLLUTION PLACARDS

All vessels 26 feet in length and over must have a placard of at least 5 by 8 inches, made of durable material fixed in a conspicuous place in each machinery space, or at the bilge and ballast pump control station. This placard must state the following:

DISCHARGE OF OIL PROHIBITED

The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste into or upon the navigable waters of the United States, or the waters of the contiguous zone, or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States, if such discharge causes a film or discoloration of the surface of the water or causes a sludge or emulsion beneath the surface of the water. Violators are subject to substantial civil penalties and/or criminal sanctions including fines and imprisonment.

Existing stocks of placards may be used for the life of the placard. The placard must be printed in the language or languages understood by the crew.

Report all pollution sightings or incidents 24 hour a day to the National Response Center telephone number 1-800-424-8802.

MARINE SANITATION DEVICES (MSD's)

As of January 30, 1980, if a vessel has a toilet or head installed, it must be equipped with an operable marine sanitation device (MSD). Vessels built after 30 January 1980 must install a Type II, or III MSD. Type I MSD's are authorized if installed before 30 January 1980 and are still in good operating condition. The objective of the MSD requirements is to prevent the discharge of untreated or inadequately treated sewage into U. S. waters.

Under the old regulations, vessels with routes longer than 30 minutes were required to have toilets and wash basins. The new regulations have dropped this requirement. Toilets and wash basins which remain onboard must be in a safe and sanitary condition.

MSD TYPES

TYPE I MSD - These devices treat the sewage with disinfectant chemicals, and by other means, before it is discharged into the water. The treated discharge must meet certain health standards for bacteria content and must not show any visible floating solids.

TYPE II MSD - This is also a treatment device like the Type I, but it must meet a higher level of sewage treatment. Because it is larger in size than a Type I, and generally has higher power requirements, it is usually installed only in commercial and larger recreational vessels.

TYPE III MSD - Type III MSD's are certified to a no-discharge standard. Type III devices include recirculating and incinerating MSD's and holding tanks. Sewage is stored in the holding tank until it can be pumped out to a reception facility on shore, or at sea beyond the territorial waters of the U.S. (three miles from shore). By regulation, the overboard discharge valve on Type III MSD's must be secured with a locking device to prevent accidental discharge while within territorial waters.

Reception facilities (sometimes called pump-out stations) are not required by Coast Guard regulations. Their availability at marinas or other locations is largely a function of local boater demand. Most cruising guides and boating almanacs list the availability of pump out stations.

CERTIFICATION LABELS

Except as noted in the next paragraph, MSD's must have a certification label affixed. Among other things, the certification label shows the name of the manufacturer, the name & model number of the device, the month & year of manufacture, the MSD type (i.e. Type I, Type II, or Type III), a certification number, and a certification statement. Type III holding tanks are considered automatically certified under a clause in the Coast Guard MSD regulations if they store sewage and flush water only, at ambient (outside) air temperature and pressure. These MSD's will not have a certification label affixed.

DISCHARGE OF SEWAGE

Discharge of raw sewage from a vessel in U.S. territorial waters (within the three mile limit) is illegal. However, a valve may be installed on any MSD to provide for the direct discharge of raw sewage when the vessel is outside U.S. waters more than three miles from shore. The valve must be secured while operating in U.S. waters. Use of a padlock, non-releasable wire-tie, or the removal of the valve handle would be considered adequate securing of the device.

The regulations do not permit installation of a spectacle flange or discharge valves, or the blanking off of discharge lines. These are temporary means of preventing overboard discharge that, by their very nature, do not render the system permanently inoperable. They do not change the inherent character of the system, and the reasonable conclusion is that the vessel owner intends to use the uncertified, installed system at a later time.

MSD MALFUNCTIONS

The Coast Guard is interested in all complaints about faulty MSD's. Such complaints should be addressed to: Commandant (G-MMS-4), U. S. Coast Guard Headquarters, Washington, D. C. 20593. Complaints should be specific in nature, describing in detail the problem encountered, and should also include the name of the device manufacturer and certification number, the type vessel the MSD is installed on, when it was installed, and what the maintenance schedule is for the MSD.

EFFECT ON STABILITY

Stability must be considered in evaluating MSD installations aboard a small passenger vessel. This is especially important for vessels fitted with holding tanks, which can add considerable weight and/or significant free surface effect.

PORTABLE SYSTEMS

Portable systems do not make use of any of the vessel's installed systems (water, electrical, etc.). They are not certified by the Coast Guard because they are not " installable" devices; the regulations apply only to vessels with installed toilet facilities.

A portable system, if used, must meet the following criteria:

a. The device must be manufactured of a durable material, such as molded plastic, aluminum, etc., that facilitates its removal for sewage disposal ashore. Collapsible units with disposable bags are not acceptable, due to their susceptibility to tearing and the resultant discharge of sewage into the water.

b. The system must be operated in accordance with the manufacturers instructions for disposal of waste, use of chemical additives, etc

c While the vessel is underway, the device must be securely fastened to the vessel with straps, wooden framing, or similar materials.

WASHROOMS AND TOILETS

Under the old regulations, vessels certificated for runs of over 30 minutes had to be provided with toilets and wash basins. The new regulations have removed all requirements for toilets and wash basins. Existing vessels may remove this equipment. Equipment installed in either new or existing vessels must be in a safe and sanitary condition.

GARBAGE HANDLING RESTRICTIONS

ANNEX V of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and implemented through the Act to Prevent Pollution From Ships (33 USC 1901) went into effect on December 31, 1988. This annex prohibits the discharge of plastic refuse and restricts the discharge of other ship-generated garbage at sea. Also, ANNEX V requires that adequate facilities for receiving garbage from ships be available at U.S. ports and terminals, including commercial fishing facilities and recreational marinas.

These regulations apply to all vessels, including commercial, recreational and fishing vessels of any size and type and the facilities that serve them. For U.S vessels these regulations apply worldwide. Foreign flag vessels need to comply once they have entered the 200 mile limit of the U.S. Exclusive Economic Zone. A matrix indicating garbage type and vessel type follows:

GARBAGE TYPE	RESTRICTION
Plastics	Disposal prohibited (DP)
Dunnage, lining and packing materials	DP less than 25 NM from nearest land
Paper rags, glass, metal bottles, crockery and similar refuse	DP less than 12 NM from nearest land
Paper, rags, glass, etc. comminuted or ground**	DP less than 3 NM from nearest land
Food waste NOT comminuted or ground	DP less than 12 NM from nearest land
Food waste ground or comminuted**	DP less than 3 NM from nearest land

Mixed refuse: When mixed with other harmful substances having different disposal requirements the more stringent disposal restrictions apply.

** Ground-up or pulverized garbage must be able to pass through a screen with a mesh size no larger than 25 mm (1 inch).

PLASTIC - Any garbage that is solid material that contains as an essential ingredient one or more synthetic organic high polymers and is formed or shaped during either manufacture of the polymer or fabrication into a finished product by heat or pressure or both. Plastics are in various forms (plastic products, raw resin products, and composite products) including but not limited to:

1. Packaging: vaporproof barriers, bottles, containers and liners
2. Ship Construction: fiberglass, laminates, siding, pipe insulation flooring, carpets, adhesives and electrical components.
3. Disposable eating utensils/cups including foamed products.
4. Floats.
5. Synthetic nets, ropes and lines.

NOTE: So called "**BIODEGRADABLE**" plastics are included in this definition. These plastics consist of polymers connected by starch molecules which cause the plastic to break down when exposed to sunlight or water. Biodegradable plastics are included in this definition to avoid a transfer from entanglement related environmental damages to ingestion related ones.

GARBAGE PLACARD

33 CFR 151.59 requires that each manned U.S. vessel 26 feet or more in length shall display one or more placards containing specific information concerning the discharge of garbage. See Fig. 1 for an example of the required information. These placards shall be displayed in prominent locations and in sufficient numbers so that they can be read by the crew and passengers of the vessel. Suggested sites include embarkation points, food service facilities, garbage handling spaces, and common spaces on deck.

NOTE: Any person who violates the above requirements concerning the discharge of garbage is liable for a civil penalty of up to **$25,000**, and a criminal penalty of up to **$50,000** and imprisonment for up to five years per violation.

WASTE MANAGEMENT PLANS

Each manned, oceangoing* ship of 40 or more feet in length, either engaged in commerce or equipped with a galley and berthing, must have a waste management plan meeting the requirements specified below.

Each waste management plan must be in writing and:

a. provide for the discharge of garbage by means that meet the requirements of ANNEX V;

b. describe procedures for collecting, processing, storing, and discharging garbage; and

c. designate the person in charge of carrying out the plan.

The plan can be as simple as this:

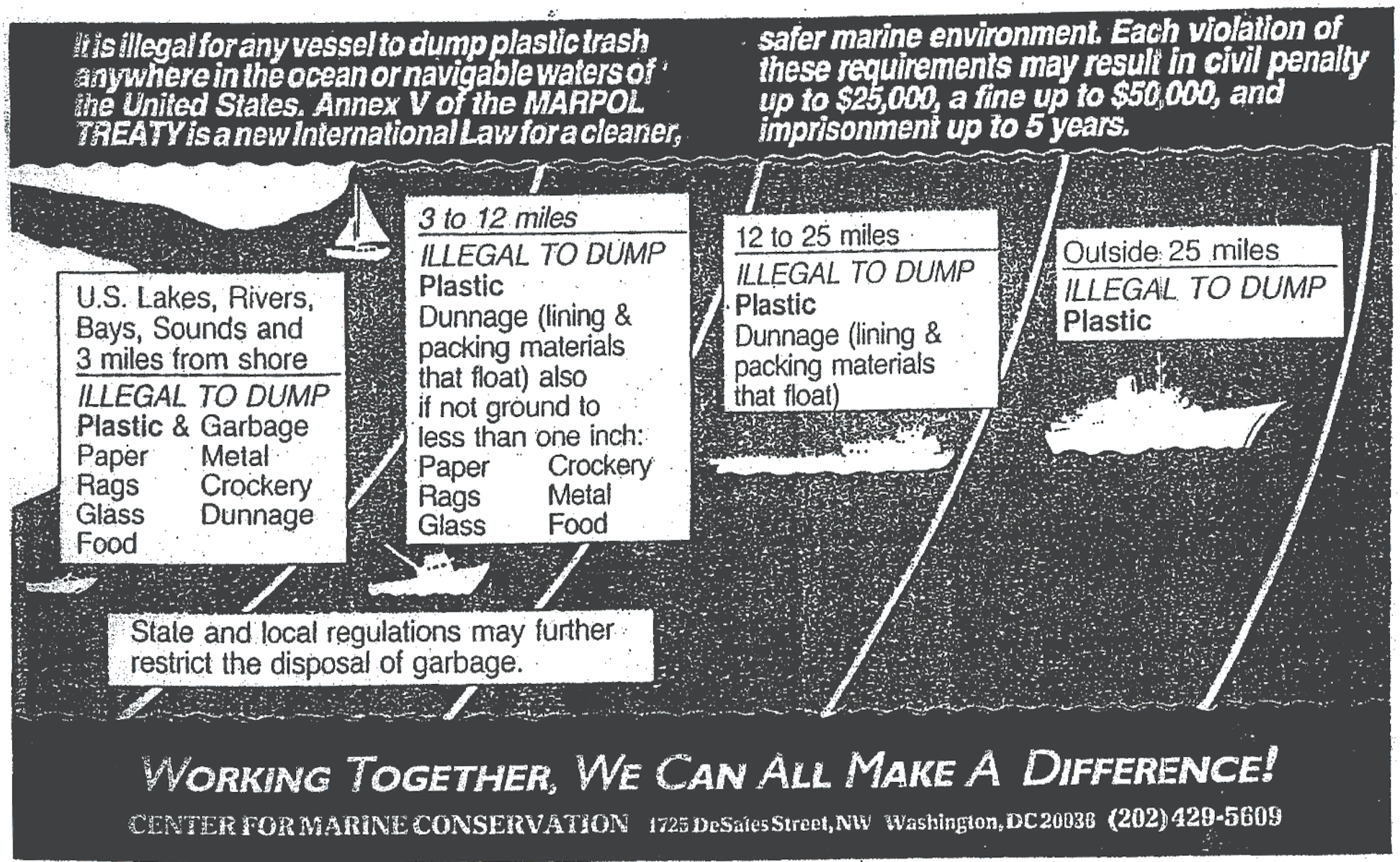
"All garbage generated aboard this vessel is stored onboard for discharge to an appropriate shore facility. Mr./Mrs./Capt._____ is in charge of implementing this plan."

Oceangoing means:

a. A U.S. vessel certificated for ocean service;

b. A U.S. vessel operating seaward of the territorial sea (outside of three miles), regardless of certification; and

c. A foreign vessel.


It is illegal for any vessel to dump plastic trash anywhere in the ocean or navigable waters of the United States. Annex V of the MARPOL TREATY is a new International Law for a cleaner, safer marine environment. Each violation of these requirements may result in civil penalty up to $25,000, a fine up to $50,000, and imprisonment up to 5 years.
U.S. Lakes, Rivers, Bays, Sounds and 3 miles from shore
ILLEGAL TO DUMP
Plastic & Garbage
Paper Metal
Rags Crockery
Glass Dunnage
Food
3 to 12 miles
ILLEGAL TO DUMP
Plastic
Dunnage (lining & packing materials that float) also if not ground to less than one inch:
Paper Crockery
Rags Metal
Glass Food
12 to 25 miles
ILLEGAL TO DUMP
Plastic
Dunnage (lining & packing materials that float)
Outside 25 miles
ILLEGAL TO DUMP
Plastic
State and local regulations may further restrict the disposal of garbage.
WORKING TOGETHER, WE CAN ALL MAKE A DIFFERENCE!
CENTER FOR MARINE CONSERVATION 1725 DeSales Street, NW Washington, DC 20036 (202) 429-5609

INVESTIGATIONS

PURPOSE

The purpose of a Coast Guard investigation is to determine the cause of an accident, casualty, or alleged misbehavior, to determine what remedial measures, if any, should be taken; and to determine whether any violations of federal laws or regulations have occurred. Investigations promote safety of life and property and protect the marine environment. The Coast Guard does not investigate to fix civil liability in disputes between private litigants.

An important purpose of marine casualty investigations is to obtain information for the prevention of similar casualties. It is necessary for the causes of casualties to be determined as precisely as possible so that factual information will be available for program review and statistical studies.

NOTICE OF MARINE CASUALTY (46 CFR 4.05-1)

Immediately after addressing safety concerns, the owner, agent, master, operator, or person in charge, shall notify the nearest Marine Safety Office, Marine Inspection Office, or Coast Guard Group Office whenever a vessel is involved in a marine casualty consisting of:

a. All accidental groundings, or accidental strikes of (allisions with) bridges and any intentional groundings or strikes of bridges which also meet any other reporting criteria or which create hazards to navigation, the environment, or the safety of the vessel.

b. Loss of main propulsion or primary steering, or any associated component or control system, the loss of which causes a reduction of the maneuvering capabilities of the vessel. Loss means that systems, component parts, sub-systems, or control systems do not perform the specified or required function.

c. Any occurrence that materially and adversely affects the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, or failure or damage to fixed fire extinguishing systems, lifesaving equipment, auxiliary power generating equipment, or bilge pumping system.

d. Loss of life or injury requiring treatment beyond first aid, and, if the person is engaged or employed on board a vessel in commercial service, that renders the individual unfit to perform his or her routine duties.

e. An occurrence not meeting any of the above criteria but resulting in damage to property in excess of $25,000.00. Damage cost includes the cost of labor and material to restore the property to the service condition which existed before the casualty, but does not include the cost of salvage, cleaning, gas freeing, drydocking, and demurrage.

WRITTEN NOTICE ALSO REQUIRED (46 CFR 4.05-10)

The owner, agent, master, operator, or person in charge shall, within five days, file a written report of any marine casualty. This report is in addition to the immediate notice required by 46 CFR 4.05-1. This written report must be delivered to a Coast Guard Marine Safety Office or Marine Inspection Office on Form CG-2692 (Report of Marine Accident, Injury, or Death). (see enclosure (8)).

PROCEDURES AGAINST LICENSES AND DOCUMENTS

46 USC Chapter 77 authorizes the Coast Guard to conduct personnel investigations or to initiate suspension and revocation proceedings. This authorizes action against any mariner for incompetence, misconduct, negligence, or violation of laws or regulations intended to promote marine safety or to protect navigable waters while acting under the authority of seamen's papers, including certain drug offenses. Personnel investigations are conducted to promote safety on the high seas and the navigable waters of the United States, and to prevent or mitigate personnel-related hazards to life, property, and the marine environment.

ZERO TOLERANCE DRUG ENFORCEMENT

Illegal drugs have no place in the marine environment. Those who operate vessels on our nation's waterways must be free from operating under the influence of illegal drugs and controlled substances. Boaters, whether recreational or commercial, have a responsibility to themselves, to others on board, and to other vessels to ensure that nothing interferes with the safe operation of their vessels. The Coast Guard Zero Tolerance approach complements the Secretary of Transportation's desire for a drug free transportation system, and also complements our nation's war against drug abuse.

Passengers should be made aware that drugs are not allowed aboard any vessels. The National Party Boat Owners Alliance, Inc. (ph. 203-535-2066) has published a warning poster.

FEDERAL RULES GOVERNING OPERATION OF A VESSEL WHILE INTOXICATED

In 1988 the Coast Guard issued rules to establish intoxication standards and prescribe restrictions and responsibilities applicable to personnel operating recreational and commercial vessels while intoxicated. * Intoxicant means any form of alcohol, drug or combination thereof. These regulations set a federal standard for behavioral signs of intoxication and an independent blood alcohol concentration (BAC) standard. The regulations are incorporated in part 95 of Title 33, Code of Federal Regulations. The following is a brief summary of those regulations:

APPLICABILITY

These regulations apply to all vessels (except a public vessel) operating on U. S waters and to a vessel owned in the U. S. operating on the high seas. This includes a foreign vessel operating in U. S. waters. The regulations are also applicable at all times to Coast Guard inspected vessels.

OPERATING A VESSEL

An individual is considered to be <u>operating</u> a vessel when: 1) The individual has an essential role in the operation of a recreational vessel underway, including but not limited to navigating or controlling the vessel's propulsion system; or, 2) The individual is a crewmember, pilot, or a watchstander not a regular member of the crew of a vessel other than a recreational vessel.

STANDARD OF INTOXICATION

The <u>federal</u> blood alcohol concentration (BAC) standard for <u>recreational vessels</u> is .10%, or the state standard if the state standard is lower. The state standard in Maine is .08%.

The standard for all other vessels, including commercial vessels is .04%. Additionally, a person operating any vessel is deemed intoxicated if the effects of the intoxicant(s) consumed by the individual on the person's manner, disposition, speech, muscular movement, general appearance or behavior is apparent by observation.

CHEMICAL DRUG AND ALCOHOL TESTING REGULATIONS

A law enforcement officer or a marine employer may direct an individual operating a vessel to undergo a chemical test when reasonable cause exists. Reasonable cause exists when: a) the individual was directly involved in a marine casualty; b) The individual is suspected of being in violation of the intoxication standards defined in the regulations.

REFUSAL TO SUBMIT TO TESTING

If an individual refuses to submit to a timely chemical test when directed by a law enforcement officer based on reasonable cause, evidence of refusal is admissible in any administrative proceeding and the individual will be presumed to be intoxicated. This includes administrative proceedings looking toward suspension or revocation of an individual's Coast Guard license or document.

If an individual refuses to submit to a timely chemical test when directed by a marine employer for any reason other than involvement in a Serious Marine Incident that individual will be charged with misconduct under 46 USC 7703. If an individual refuses to submit to a chemical test when directed by a marine employer after having been determined to be directly involved in a Serious Marine Incident, that individual will be charged with a violation of a regulation under 46 USC 7703

In a recent decision, an Administrative Law Judge revoked a mariner's credentials for a charge of Misconduct. Specifically, the mariner refused to provide a urine specimen for a random chemical test, in violation of a company regulation. While the suggested range of sanctions allows a 12-24 month suspension for this offence, the judge felt the act was a serious breach of the mariner's responsibility and elected to revoke the license.

In the past, settlement agreements between the mariner and the Coast Guard have allowed the mariner to avoid a hearing in these cases. Sanctions typically ranged from 1-4 months suspension of the mariner's credentials. A refusal to cooperate with a random test is contrary to the intent of the entire chemical testing program. The Coast Guard will no longer offer settlement in these cases, but will take the mariner to a public hearing before an Administrative Law Judge.

GENERAL OPERATING RULES - CHAPTER 33 OF TITLE 46, UNITED STATES CODE

While on board a vessel subject to inspection, a crewmember (including a licensed individual), pilot or watchstander not a regular member of the crew: a) Shall not perform or attempt to perform any scheduled duties within four hours of consuming any alcohol; b) Shall not be intoxicated at any time; c) Shall not consume any intoxicant while on watch or duty; and, d) May consume a legal non-prescription or prescription drug provided the drug does not cause the individual to be intoxicated.

RESPONSIBILITY FOR COMPLIANCE

The marine employer shall exercise due diligence to assure compliance with the applicable provisions of this part. If the marine employer has reason to believe that an individual is intoxicated, the marine employer shall not allow that individual to stand watch or perform other duties.

PENALTIES

An individual who is intoxicated when operating a vessel shall be:

a. Liable for a civil penalty of not more than $1000.00;

b. Fined not more than $5000.00, imprisoned for not more than one year, or both.

An individual holding a Coast Guard license or document who is found to be in violation of these regulations may also be subject to suspension and revocation proceedings.

DRUG TESTING REQUIREMENTS

These regulations apply to all individuals acting under the authority of a License, Certificate of Registry or MMD and to individuals employed on U.S. vessels required to be operated by individuals holding a License or MMD. Persons whose duties do not affect the safety of the vessel's navigation or operations are excluded. The following occasions require drug testing:

PRE-EMPLOYMENT:

All new employees must be drug tested before being hired.

PERIODIC TESTING

Whenever a physical examination for a license or document is required by the U.S Coast Guard, that examination must include a test for dangerous drugs. If an individual has passed a pre-employment or periodic test within six months or has successfully participated in a random testing program during the preceding 12 months the drug test portion of the physical examination will not be required.

RANDOM TESTING

Employers are required to implement a random drug testing program. This regulation applies to crewmembers on inspected vessels who occupy a position required by the vessel's COI, act as patrolmen or watchmen, or assist passengers in any way during an emergency. It applies to crewmembers on uninspected vessels who are required to hold a Coast Guard license, perform duties related to the safe operation of the vessel, act as patrolmen or watchmen, or assist passengers in any way during an emergency.

SERIOUS MARINE INCIDENT (46 CFR 4.03-2)

The term " Serious Marine Incident" Includes the following events involving a vessel in commercial service:

(a) Any marine casualty or accident as defined in 46 CFR 4.03-1 which is reported to the Coast Guard and which results in any of the following:

One or more deaths;

An injury to a crewmember, passenger, or other person which requires professional medical treatment beyond first aid, and, in the case of a person employed on board a vessel in commercial service, which renders the individual unfit to perform routine duties;

(3) Damage to property, as defined in 46 CFR 4.05-1(f) of this part, in excess of $100,000

(4) Actual or constructive total loss of any vessel subject to inspection under 46 U.S.C. 3301; or

(5) Actual or constructive total loss of any self-propelled vessel, not subject to inspection under 46 U.S.C. 3301 of 100 gross tons or more.

(c) A discharge of oil of 10,000 gallons or more into the Navigable waters of the United States, as defined in 33 U.S.C. 1321, whether or not resulting from a marine casualty.

(d) A discharge of a reportable quantity of a hazardous substance into the navigable waters of the United States, or a release of a reportable quantity of a hazardous substance into the environment of the United States, whether or not resulting from a marine casualty.

REASONABLE CAUSE

Crewmembers shall submit to chemical testing when the employer has a reasonable belief that the individual has used a dangerous drug. This belief must be based on the observation of specific physical, behavioral or performance indicators. The fact that the crewmember has been directed to undergo testing should be entered in the vessel's log if the vessel is required to maintain a log. If the individual refuses to undergo the required test this should also be logged.

RECORDS

Employers must maintain records of chemical tests which are reported by the Medical Review Officer as positive for a period of five years. These records shall be made available to the Coast Guard upon request. Records of negative tests must be maintained for a period of one year. The records must identify the total number of individuals chemically tested annually for dangerous drugs in each of the categories of testing required, the number of individuals failing the tests and the number and types of drugs for which individuals tested positive.

STANDARDS FOR CONDUCTING TESTS

Chemical tests for dangerous drugs must be conducted under the guidelines set forth in 49 CFR Part 40. These guidelines are quite extensive and include specific requirements for approval of testing laboratories, collections sites, security of specimens, controlling access to specimens, insuring the privacy of the person providing the specimen, insuring that the integrity of the specimen is maintained, and use of collection kits which meet regulations. Once the specimen is collected a chain of custody must be maintained, the laboratory selected to conduct the testing must be one approved by the U.S. Department of Health and Human Services, and any confirmed positive tests must be referred to a Medical Review Officer (MRO). The Medical Review Officer shall review and interpret positive tests and report his findings to the employer.

EMPLOYEE ASSISTANCE PROGRAM

Each employer shall provide an Employee Assistance Program (EAP) for all crewmembers. The program can be part of the employer's internal personnel services or it can be contracted through an outside source. Each program must contain an education program and a training program.

CHEMICAL TESTING PROGRAM CHECKLIST

Enclosed in this handbook is a checklist used by USCG Marine Inspectors to determine if Marine Employers are in compliance with the chemical testing requirements of 46 CFR Part 16, and 49 CFR Part 40. Please feel free to use the checklist to prepare for your inspection for certification or a reinspection.

ANNUAL MIS REPORTING (46 CFR Part 16.500)

The required Form CG-5573 is provided for your information and use as enclosure (4) to this handbook. If your company has fewer than ten (10) employees, submit Form CG-5573 for three (3) consecutive years, then the form is no longer required. If a consortium files the form for a company, then the company is no longer required to notify the Coast Guard in writing.

SUBCHAPTER K

The Interim Final Rule published in the Federal Register on January 10, 1996 created an entirely new set of regulations to cover larger " small" passenger vessels of less than 100 gross tons. The new regulations are contained in Subchapter K, 46 CFR 114-122, and apply to vessels less than 100 gross tons which:

1. Carry more than 150 passengers -OR-

2. Have overnight accommodations for more than 49 passengers.

Furthermore, some of the corresponding subchapters below must be followed for K vessels.

Subchapter H, Construction and Arrangement, 46 CFR Part 72.

Subchapter H, Fire Protection Equipment, 46 CFR Part 76.

Subchapter F, Marine Engineering, 46 CFR Parts 50-64

Subchapter J, Electrical Engineering, 46 CFR Parts 110-139.

This section of the guide identifies all portions of Subchapter K which apply to existing vessels. Lifesaving and fire fighting requirements are covered in detail. Other sections contain only new requirements for existing vessels, major deviations from Subchapter T regulations, and a summary of other new vessel regulations.

LIFESAVING EQUIPMENT

Lifesaving requirements are found in Part 117 of Subchapter K. Existing vessels must comply with the new regulations (described in this section) as of March 11, 1996 except as otherwise stated. " Same as Subchapter T" indicates that the noted sections are identical to those found in the new version of Subchapter T, including implementation dates for specific regulations.

EPIRB's Same as Subchapter T

DISTRESS FLARES AND SMOKE SIGNALS Same as Subchapter T.

LIFE RING BUOYS AND LIFE JACKETS Same as Subchapter T.

SURVIVAL CRAFT New survival craft requirements must be met by existing vessels by March 11, 2001, or 10 years after the vessel's keel was laid. Survival craft onboard vessels before March 11, 1996 may continue to be used to meet these requirements as long as they are in good and serviceable condition. New and replacement survival craft must meet the new regulations. The following summary of the number and type of survival craft required is taken from 46 CFR 117.200.

RIVERS	
Cold water	50% LF
Cold water, within 1 mile of shore	NONE
Warm water	NONE
LAKES, BAYS, AND SOUNDS	
With overnight accommodations	67% IBA
No overnight accommodations, cold water	100% LF
No overnight accommodations, warm water	50% LF
Any waters, within 1 mile of shore	NONE
LIMITED COASTWISE	
With overnight accommodations	100% IBA
No overnight accommodations	
Cold water	67% IBA
Cold water, within 3 miles of shore, with 406 EPIRB	50% LF
warm water	50% LF
warm water, within 3 miles of shore, with 406 EPIRB	NONE
COASTWISE	
With overnight accommodations	100% IBA
Cold water, no overnight accommodations	67% IBA
Warm water, no overnight accommodations	100% LF
Any water, within 3 miles of shore, with 406 EPIRB	50% LF
OCEANS	
Cold water, all vessels	100% ILR
Warm water, with overnight accommodations	100% IBA
Warm water, no overnight accommodations	67% IBA

ILR = inflatable liferaft, IBA = inflatable buoyant apparatus, LF = life float

Substitution are permitted in some cases per 46 CFR 117.200 (c).

SURVIVAL CRAFT EQUIPMENT, STOWAGE, ETC. Same as Subchapter T.

FIRE PROTECTION EQUIPMENT

Existing vessels may continue to comply with old fire protection equipment regulations, except in the following cases:

Vessels with a hull, or a machinery space boundary bulkhead or deck, composed of wood or fiber reinforced plastic, or sheathed on the interior in fiber reinforced plastic must comply with the fixed gas fire fighting and detecting systems as of March 11, 1999.

FIRE PUMPS

All K boats are required to have a self priming, power driven fire pump. On vessels with overnight accommodations for not more than 49 passengers, the pump must be capable of delivering pressure of 50 psi at the highest hydrant. On vessels with overnight accommodations for more than 49 passengers, the pump must meet the requirements of 46 CFR 76.10-5 (Subchapter H).

HOSES AND NOZZLES

Unlike certain Subchapter T vessels, garden type hoses may not be used on Subchapter K vessels. All hoses must be lined, commercial fire hoses approved by UL 19. Nozzles must be approved under 46 CFR 160.027.

FIXED FIRE EXTINGUISHING AND DETECTING SYSTEMS

The following spaces must be equipped with a fixed gas fire extinguishing system:

A space with propulsion machinery.
A space with an internal combustion engine of more than 50 hp
A space with an oil fired boiler.
A paint locker.
A storeroom with flammable liquids.

The following spaces must be equipped with a fixed fire detecting system:

A space with propulsion machinery.
A space with an internal combustion engine of more than 50 hp
A space with an oil fired boiler.

Details concerning the design and installation of these systems are found in 46 CFR 118.410.

PORTABLE FIRE EXTINGUISHERS

The portable fire extinguisher requirements are identical to those of the new Subchapter T regulations (46 CFR 181.500).

ADDITIONAL EQUIPMENT

Subchapter K vessels, more than 65 feet long, must have a fire axe in or near the primary operating station. Unlike new "T" vessels, "K" vessels are not required to have fire buckets.

MACHINERY INSTALLATION

New installations of machinery, bilge, and ballast system equipment, steering equipment, and piping systems must meet the new regulations. Replacement of existing systems may continue to meet the old regulations.

Existing vessels must comply with the bilge high level alarm requirements of 46 CFR 119.530 as of March 11, 1999. Such a system includes a visual and audible alarm at the operating station to indicate high water in each of the following spaces:

1. A space with a through hull fitting below the deepest load waterline.

2. A machinery space bilge, bilge well, shaft alley, or other space subject to flooding from sea water piping from within the space.

3. A space with a non watertight closure, such as a space with a non watertight hatch on the main deck.

A visual indicator must be provided at the operating station to indicate when any automatic bilge pump is operating.

INSPECTION OF ELECTRIC WATER HEATERS (46 CFR 119.320)

An electric water heater is acceptable for shipboard use if it

(1) has a capacity of 120 gallons or less,

(2) has a heat input of 200,000 btu/hour or less,

(3) is listed in Underwriter's Laboratories under UL 174 or 1453,

(4) is protected by a pressure-temperature relief device,

(5) is installed and secured from rolling by straps or other devices to the satisfaction of the OCMI.

A water heater must meet parts 52 and 63 of this chapter if it is rated at more than 100 psig or 250 F.

Water heating boilers not meeting the above criteria must meet the requirements of 46 CFR Parts 52 and 63. Low pressure water heaters in the OCMI Portland zone are inspected as follows:

1. Fireside examination under normal working hydrostatic pressure,

2. Waterside examination (if accessible),

3. Operational test of control and safety systems as guided by 46 CFR 63,

4. Operational test of the safety (relief) valve.

FUEL RESTRICTIONS 46 CFR 119.405 The use of any fuel, other than diesel fuel, for any internal combustion engine (except gasoline outboards) will be reviewed on a case-by-case basis by Commandant.

ENGINE COOLING The engine head, block, and exhaust manifold must be water jacketed and cooled by water from a pump that operates whenever the engine is operating. Unless a closed fresh water system is used, a hull strainer must be installed in the raw water intake line.

BILGE PUMPS 46 CFR 119.520 K vessels must be equipped with installed, power bilge pumps in accordance with the table 56.50-55(a), which is duplicated in part below:

Vessel Length	International voyages	Ocean and Coastwise voyages	All Other voyages
180 or more	3	3	2
over 65', less than 180'	3	2	2
65' or less	3	1	1

Exceptions to this are found in 46 CFR 56.50-55(a)

Vessels 65' or less must also be equipped with a second pump capable of dewatering any watertight compartment. This pump may be either an independently powered power pump, or a hand pump.

Steering systems must comply with the requirements of Subchapters F (marine engineering) and J (electrical engineering).

Other machinery requirements are similar to those of the new Subchapter T regulations.

ELECTRICAL INSTALLATIONS

Electrical systems requirements are found in 46 CFR 120 of Subchapter K. existing vessels are not required to meet the new regulations, except in the following cases:

1. New installations of electrical equipment must meet the new regulations Replacement of equipment installed before March 11, 1996 need not meet the new regulations.

2. Repair or replacement of cable and wire must meet the new regulations New regulations covering cable and wire are found in 120.340.

3. Existing vessels must meet the navigation lights requirements of 120.420 This regulations requires all vessels to have navigation lights in compliance with the International and Inland Navigation Rules. These requirements were previously found only in 33 CFR 81. Vessels over 65 feet in length must have navigation lights that meet UL 1104.

4. Existing vessels must be equipped with at least 2 portable battery lights after March 11, 1996. One such light must be at the operating station, the other at the access to the engine room.

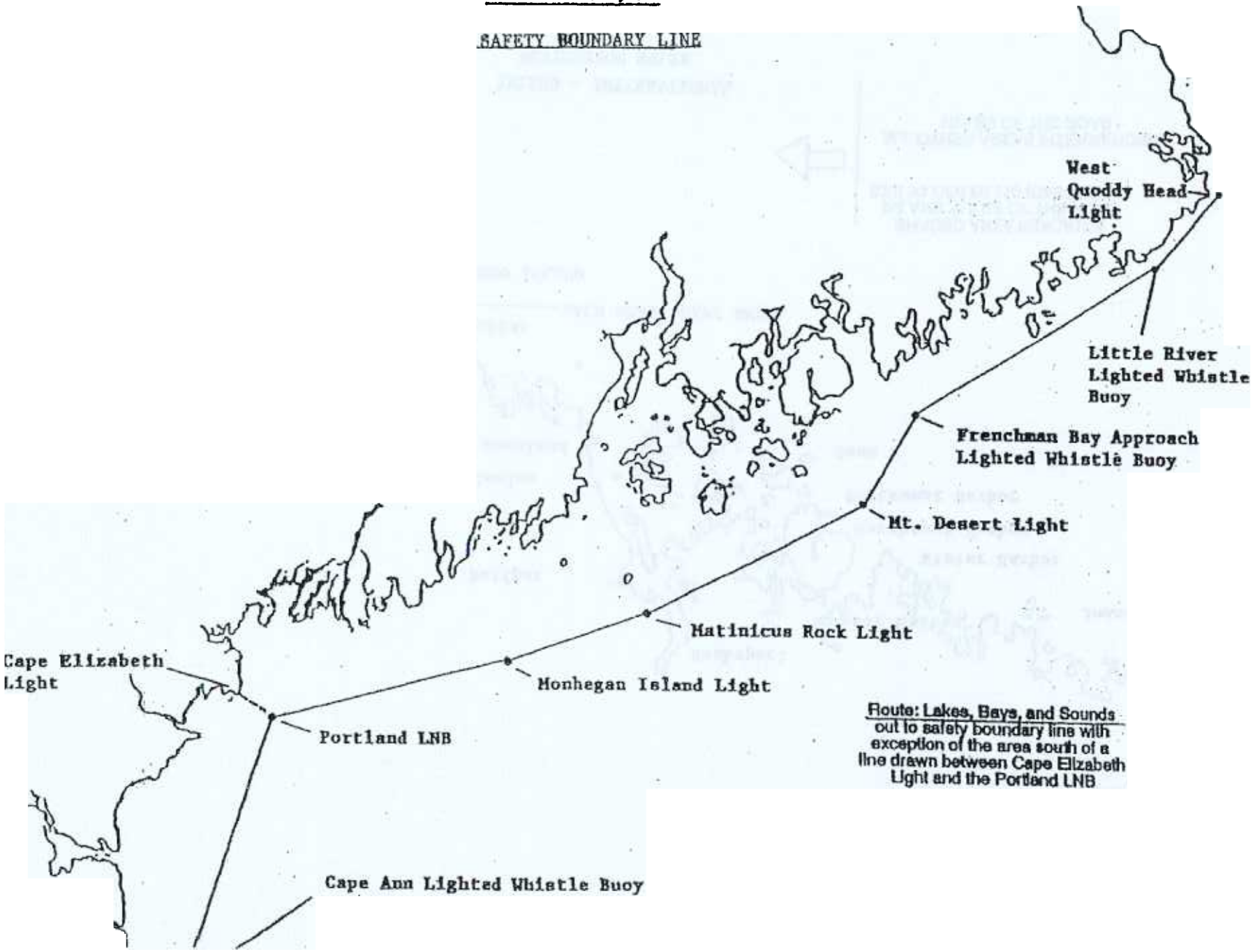
The K regulations are generally more stringent than those of the new Subchapter T regulations. K vessels with an electrical installation operating at less than 50 volts may meet the requirements of the new Subchapter T regulations.

VESSEL CONTROL AND MISCELLANEOUS SYSTEMS

These requirements are found in **46 CFR 121** of Subchapter K. Existing vessels are required to meet the new regulations.

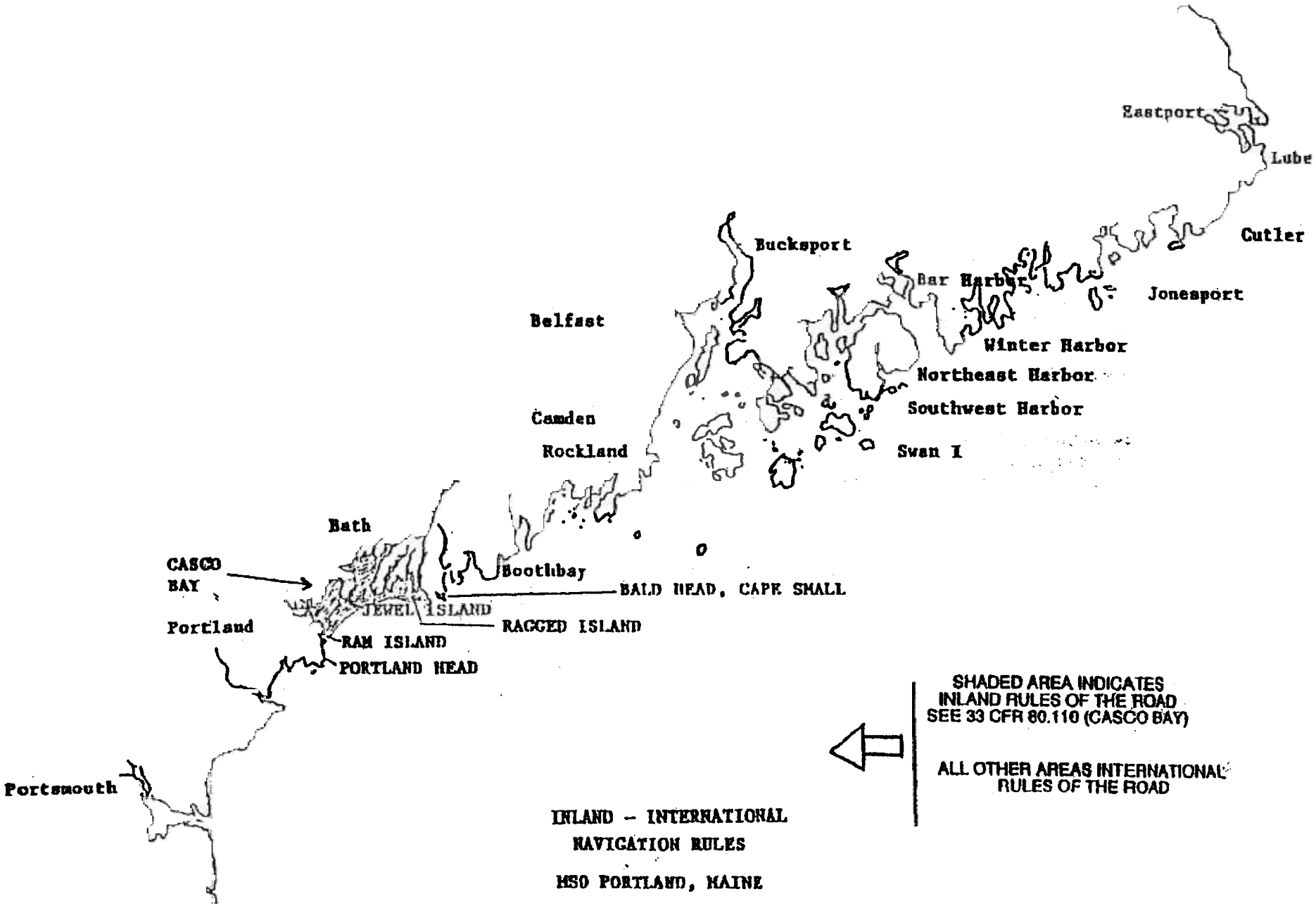
This section is nearly identical to the corresponding section of the new Subchapter T, **46 CFR 184**, including the requirement for a public address system. Unlike Subchapter T, **46 CFR 121.404** requires all K vessels to have radar, except for ferry vessels on rivers routes, within 1 mile of shore, and other vessels on restricted routes specifically exempted by the OCMI.

MSO PORTLAND, ME



ENCLOSURE (1

ENCLOSURE (2)



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