UNITED STATES COAST GUARD

SECTOR UPPER MISSISSIPPI RIVER

ST. LOUIS, MISSOURI

SMALL PASSENGER VESSEL

INFORMATION GUIDE

Revised July 2015

PREFACE

This document was created to provide assistance to both existing passenger vessel owners and persons seeking to obtain certification for new vessels. In it you will find guidance on topics ranging from construction, the certification process, marine casualty reporting requirements, and crew training. In the "Additional Resources" section at the end of this guide you will find important links for valuable references including one for compliance with Coast Guard mandated drug testing requirements. Although the Small Passenger Vessel Information Guide is through, it should not be used in place of the specific regulations applicable for your vessel. You are highly recommended to purchase a copy of the applicable Federal Regulations from the government printing office (866) 512-1800 or on the Internet: http://bookstore.gpo.gov/.

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INTRODUCTION

Introduction to this Guide

Introduction

This guide applies to vessels less than 100 gross tons, carrying more than 6 passengers and at least one of which who is a passenger for hire.

Although extensive, this guide is not meant to be all-inclusive or to replace the regulations regarding passenger-carrying vessels. It is designed to provide an introduction to the regulations.

Getting a Copy of the Regulations

If you do decide to have your passenger vessel Coast Guard certificated, we strongly recommend that you obtain a copy of the applicable federal regulations.

To remain fully up to date with federal regulations, navigate your web browser to the government's internet web site at: www.gpoaccess.gov/cfr/

Printed copies can be obtained from the government printing office (866) 512-1800. They accept Visa or MasterCard. Ask for 46 CFR Parts 166 to 199 if your vessel carries 150 or less passengers and Parts 90 to 139 if your vessel carries more than 150 passengers.

Introduction to this Guide *(Continued)*

Using This Guide

This guide is divided into sections A thru I, which relate to specific topics covered by the regulations.

Throughout this guide you will find regulatory cites used as references. Those cites marked with ***(T)*** as a suffix apply to those vessels carrying 150 passengers or less, or vessels that have overnight accommodations for 49 or less passengers. Regulatory cites marked with ***(K)*** as a suffix are applicable to vessels carrying more than 150 passengers, or vessels that have overnight accommodations for more than 49 passengers. These references are general in scope and may lead you to other applicable regulations.

Within each section there are numbered pages that correspond with each subtopic (e.g., A-1, B-1, etc.) we hope this makes your search for topics of interest easier.

Summary

We hope this package will help answer questions you have about passenger carrying vessels. If you have additional questions contact our office. **Remember this is only a guide and is not all-inclusive or meant to replace the regulations regarding passenger carrying.**

About Coast Guard Sector Upper Mississippi River

Introduction

Sector Upper Mississippi River is located in the Robert A. Young Federal building.

Our address is:

Commander
Sector Upper Mississippi River
1222 Spruce St., Suite 7.103
St. Louis, MO 63103-2835

Calling our office:

Vessel Inspections (314) 269-2686
(7:30am to 4:00pm)

After Hours Emergencies 1-866-360-3386 *(24 hours)*
Command Center Sector Upper Mississippi River St. Louis, MO

Sending us a fax:

(314) 269-2742

About Sector Upper Mississippi River *(continued)*

About the Office

Sector Upper Mississippi River (Sector UMR) is managed by the Sector Commander. The Sector Commander is both the *Officer in Charge, Marine Inspection (OCMI)* and *Captain of the Port (COTP).*

- The Sector is divided into four departments:

- *Prevention Dept. - Inspections and Investigations Section*- Within this Department are two sections, responsible for the inspection of all U.S. vessels that operate in, or enter our zone. This includes but is not limited to passenger vessels, barges, and ferries. The department is also responsible for conducting investigations of marine casualties in the Sector UMR zone, processing marine violations (civil penalty), and conducting suspension and revocation investigations. In addition, the department is responsible for waterways management, pollution response, marine patrols, and port facility inspections.

- *Logistics Department* – Responsible for procurement and Sector UMR personnel administration.

- *Response Department* –Responsible for port security, pollution investigation and mitigation, and port readiness.

- *Command Centers*: Responsible for coordinating all a response activities and communicating waterways management, coordination of pollution response, patrols, and inspections of port facilities.

- *Planning*: Responsible for the development of operations plans, contingency plans, port security plans.

Regional Exam Center

• Reviews applications for licenses and merchant mariner's documents.

Introduction to the Certification of Small Passenger Vessels

Introduction

The Vessel Inspections Branch at Sector UMR has the responsibility for inspecting passenger vessels operating in the Sector UMR OCMI zone. This zone encompasses the states of Iowa, Nebraska, North and South Dakota, Kansas, Colorado and Wyoming, and portions of Illinois, Missouri, Minnesota, and Wisconsin.

Federal Regulations

Title 46 of the Code of Federal Regulations, Subchapter K, Parts 114 to 122 and Subchapter T, Parts 175 to 187, govern the inspection and operation of small passenger vessels. These regulations will be used to inspect the vessel.

Passenger for Hire

Passenger for hire means 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 persons having an interest in the vessel.

Uninspected Passenger Vessel

A passenger vessel less than 100 gross tons, that carries 6 or less passengers is <u>not</u> required to be inspected by the U. S. Coast Guard. These vessels are sometimes referred to as "6-pack vessels", and are required to be operated in accordance with *46 CFR Parts 24-28, commonly referred to as Subchapter "C"*.

The person in charge of an uninspected vessel must hold, as a minimum, a valid U.S. Coast Guard license as operator of an uninspected passenger vessel.

Certificate of Documentation

An important distinction must be made here. A Certificate of Inspection (COI) and a Certificate of Documentation (COD) are both Coast Guard issued documents; however, they are different in nature and purpose. COIs are issued by an OCMI and attests to a vessel's conformity to all inspection laws, rules and regulations. The Documentation Certificate is issued by the USCG National Documentation Center and provides evidence of nationality for international purposes, facilitates commerce between the states, and admits vessels to certain restricted trades, such as coastwise

Introduction (Continued)

trade and the fisheries.

Your passenger vessel may be required to be documented for coastwise trade before the vessel can be issued a COI. Please visit the National Documentation Center's web site for additional information: http://www.uscg.mil/nvdc/

A brochure explaining vessel documentation is located at the end of this guide.

Appeals

Introduction

It is your right as the owner or operator of your vessel to appeal any decision or a requirement issued by a Marine Inspector.

Procedure

Your first step in the appeal process is to write a letter to the OCMI explaining why you disagree with the requirement(s) written by the Marine Inspector. This letter should be submitted to Sector UMR Prevention Department in accordance with 46 CFR Part 1.03-20.

If the OCMI denies your request and you are still not satisfied, you have the right to continue your appeal "up the chain of command" in the order as follows:

You may next appeal to the 8th Coast Guard District, Marine Safety Division, New Orleans, LA, in accordance with 46 CFR 1.03-25.

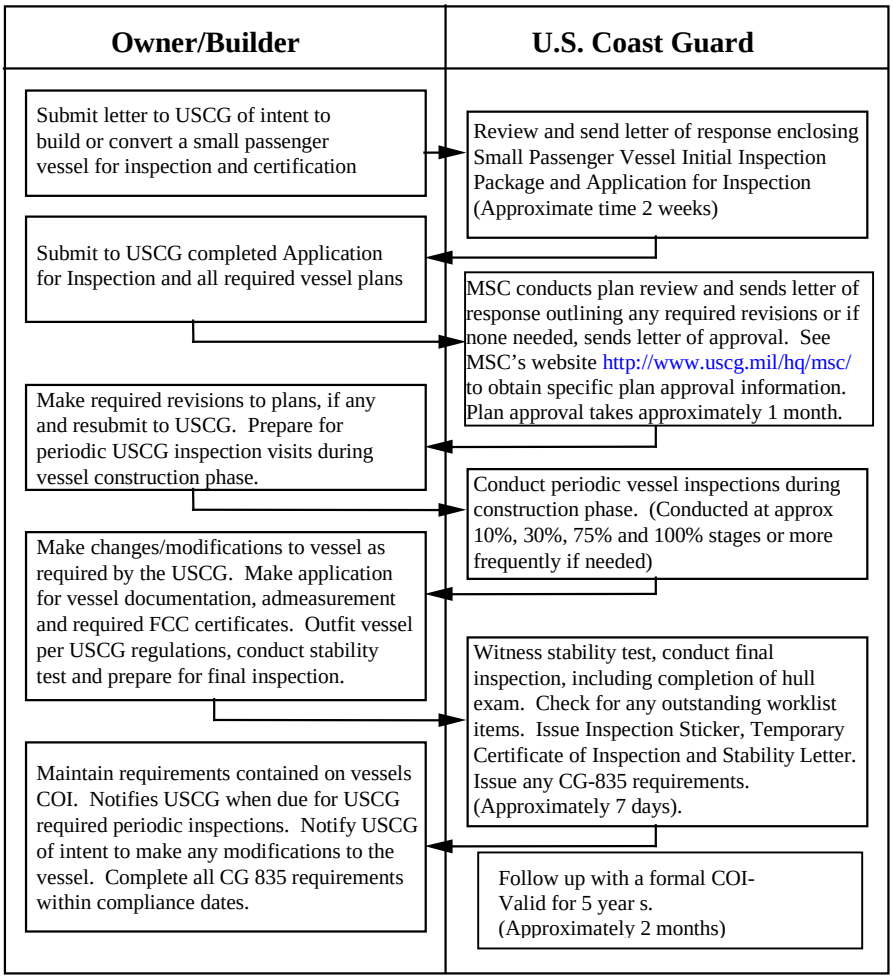
Finally, you have the right to appeal to the Commandant of the Coast Guard, Washington, D.C., in accordance with 46 CFR 1.03-15.

Certification Process

Introduction

The process of certificating a vessel takes approximately 6 months. The time can vary considerably but ultimately depends on the quality and quantity of the information submitted in the plans, whether the vessel is a new construction project or a conversion, and how prepared the vessel is for inspection.

The flow chart illustrated below lists all the steps for new build certification.



Inspection Requirements Once Vessel is Certificated

Inspection Intervals

Your vessel is issued a Certificate of Inspection (COI) valid for a period of 5 years. You must submit your written application for renewal of the Certificate of Inspection at least 30 days prior to the expiration date.

On the annual anniversaries of your vessel's COI issuance date, your vessel must be **reinspected**. This is done to ensure your vessel is being maintained in accordance with the regulations. The annual inspection must be conducted within 90 days **before or after** the COI anniversary date for the certificate to remain valid. You must contact the cognizant OCMI to schedule an annual inspection at a time and place, which he or she approves. No application is required to schedule an annual inspection.

In general, the annual inspection will consist of a visit to your vessel by a Coast Guard marine inspector who will examine the internal and external condition of your vessel's hull, assess the status of your vessel's documentation, lifesaving, firefighting, navigation, and machinery equipment. Your vessel most likely will be required to get underway to conduct drills and to examine the vessel under normal operating conditions.

Deficiencies (CG-835's)

Any equipment, machinery or structural items found by the inspector to be deficient will be required to be corrected within a defined period of time.

The inspector will provide you with a list of items found deficient and needing correction. These items are listed on a Coast Guard Form CG-835.

The Marine Inspector may allow your vessel to continue to operate provided the deficiencies are corrected prior to the 835's established deadline date. Some items, such as those involving lifesaving or firefighting equipment, may be required to be fixed prior to your vessel carrying passengers.

Drydocking and Internal Structural Exam Inspection Requirements Once Vessel is Certificated

Dry-docking Intervals

All vessels are required to dry-dock at intervals as follows:

2 Years – Vessels that are exposed to salt water more than 3 months in any 12-month period.

5 Years – Vessels that are exposed to salt water not more than 3 months in any 12-month period. *(most vessels in this zone)*

Whenever damage or deterioration to hull plating or structural members that may affect the seaworthiness of a vessel is discovered or suspected, the cognizant OCMI may conduct an internal structural examination in any affected space including fuel tanks, and may require the vessel to be drydocked or taken out of service to assess the extent of the damage, and to effect permanent repairs. The OCMI may also decrease the drydock examination intervals to monitor the vessel's structural condition.

Note: The Inspections Department must be notified before the vessel is ever dry-docked (for any reason).

Drydocking and Internal Structural Exam Inspection Requirements Once Vessel is Certificated (Continued)

Dry-docking or Hauling Out

You must accomplish the following steps prior to the arrival of the Coast Guard marine inspector:

- Clean the hull ***(do not paint the vessel prior to the Inspector's arrival)***
- Remove all sea strainers, all sea valves (within 6" of the waterline and below). The inspector will need to examine valve surfaces and valve seats.
- Remove all deck plates needed to gain access to interior hull plating and framing
- Open and ventilate all internal spaces
- Clean all water and oily water from the bilges
- Ensure a 32 inch under keel clearance that is free of debris is maintained while the vessel is on dock.

The marine inspector will inspect all items as listed above and inspect the vessel's shaft(s), shaft bearing(s), propeller(s) and rudder(s). If necessary, the inspector may require that the propeller(s) or shaft(s) be pulled for inspection, and based on the condition of the hull, may require gauging to further determine its condition.

Note: Water lubricated shaft bearings and rudder bushings shall be renewed if any water groove is found to be worn down to half or more of its original depth.

Scheduling an Inspection

Application for Inspection

You must schedule a COI inspection by either filling out and submitting an application for inspection form (CG-3752) or contacting the Inspections Department directly at (314) 269-2686.

Please note that it is your responsibility to schedule a time and date to have a marine inspector visit your vessel. You will need to contact the Inspections Department to schedule inspections for COIs, Reinspections, Drydock Exams, and any required follow-up visits.

We recommend that you contact the Inspections Department several weeks in advance to schedule an inspection. This allows the staff time to make travel arrangements and to block off time in their schedules.

Preparing Vessel for Inspection

Prior to inspection, we encourage you to prepare by using the CG-840 book (a copy may be requested from Inspections Branch). Although not all-inclusive, it will provide you with an overview of the items the inspectors may check. It will also help expedite the inspection process.

Length of Inspections

The length of time it takes to complete an inspection varies from vessel to vessel. Having the vessel prepared prior to the marine inspector's arrival helps streamline the process. On average, a COI will take 2 to 2 1/2 hours, while a reinspection may only take 1 to 1 ½ hours. A Drydock inspection should take approximately 2 hours depending on your vessel's age and size.

Vessel Routes

Introduction	The Certificate of Inspection specifies the route the vessel will be allowed to operate on while carrying passengers. Depending on the vessel's route, different construction and equipment requirements may apply.
Oceans	A route that is more than 20 nautical miles from shore.
Coastwise	A route that is not more than 20 miles from shore.
Limited Coastwise	A route that is not more than 20 miles from a harbor of safe refuge.
Lakes, Bays and Sounds	A route that is inshore of the boundary line on any lakes, bays or sounds.
Rivers	A route on the following waters: a river, a canal or such other similar waters designated by the Coast Guard District Commander.
Note	The regulations often refer to the following descriptions of waters: **Exposed Waters**- These normally include vessel on an Oceans, Coastwise, and Great Lakes route beyond 20 miles from a harbor of safe refuge. **Partially Protected Waters**- Includes vessels operating on Great Lakes within 20 miles of a harbor of safe refuge and Lakes, Bays and Sounds. **Protected Waters**- Includes vessels on lakes, harbors, and rivers that are not partially protected or exposed.

Required Manning

Introduction

The Inspections Department evaluates each vessel and determines a safe manning level.

The vessel must have the required number of crewmembers on board while carrying passengers.

Master

All vessels are required to have a licensed master qualified for the type and tonnage of the vessel being operated. The MTSA act of 2002 & the Safe Port act of 2006 require all mariners holding a Coast Guard issued credential, a Transportation Work Identification Credential (TWIC). TWIC cards must be renewed every 5 years. TWIC NVIC 03-07, www.tsa.gov/twic 1-866-347-8942.

Licensed Mate

Licensed Mates are required on all vessels carrying more than 150 passengers and/or having overnight accommodations for more than 49 passengers.

Senior Deckhand

A designated Senior Deckhand may replace the mate provided he or she is qualified under NVIC 1-91 guidelines. Crewmembers qualified as senior deckhand should be designated in writing by the master with a copy of the designation retained on board the vessel. A Senior Deckhand shall be capable of directing the emergency response actions of the vessel's crew. In the event the master becomes incapacitated, a senior deckhand must be capable of maneuvering the vessel and returning it to a position of safety.

You may obtain a copy of NVIC 1-91 from the Marine Safety Center Web site at: http://www.uscg.mil/hq/msc/.

Required Manning *(Continued)*

Crewmembers

The following is provided as a reference.

Most "T" boats are required to have, as a minimum, 1 crewmember in addition to the Master. In addition a crewmember is normally required for each deck that is available to passengers.

The vessel will also be required to increase manning based on the amount of passengers the vessel is carrying. "T-Boats" are usually not required any additional manning.

The below table shows that additional manning is required of vessels regulated by Subchapter K, since they can carry more than 150 passengers.

Passengers on board	Not more than 12 hours operation	More than 12 hours operation
0-149	0	0
150-299	1	2
300-499	2	4
500-799	3	6
800 & Up	4	8

Determining Maximum Passengers – *46 CFR 176.113 & 177.820(T) 46 CFR 115.112 & 115.113(K)*

Introduction

The maximum number of passengers permitted is determined by using one of the following criteria.

- Length of rail
- Deck area
- Fixed Seating

The method that provides for the greatest number of passengers may be used.

It is important to note that the maximum number of passengers permitted may be further limited by stability considerations.

Calculating

Different passenger capacity criteria (as described in the federal regulations) may be used on each deck of a vessel and added together to determine the total passenger capacity of the vessel.

Where seats are provided on a part of a deck and not on another, the number of passengers permitted may be the sum of the number permitted by the seating criterion for the space having seats and the number permitted by the deck area criterion for the space having no seats.

The length of rail criterion may not be combined with either the deck are criterion of the fixed seating criterion when determining the maximum passengers permitted on an individual deck.

Length of Rail Criteria

One passenger is allowed for each 30 inches of rail.

Rail space in congested areas, on stairways, or in a location that would block the vision of operator of the vessel cannot be included.

Determining Maximum Passengers *(Continued)*

Deck Area Criteria

One passenger is allowed for each 10 square feet available for passenger use.

Areas occupied by the following shall be excluded:

- Concession stands
- Toilet and washrooms
- Companionways, stairway, etc.
- Spaces occupied by and necessary for handling Lifesaving equipment
- Spaces below deck not suitable for, or not normally used by passengers
- Interior passage-ways less than 30 inches wide
- Passage-ways on the open deck less than 18 inches wide.

Fixed Seating

One person per 18 inches of seat width.

Each sleeping berth in overnight accommodation spaces shall be counted as only one seat.

Fixed Seating Installations

Seating installations for passengers are required only when the number of passengers was determined by using the fixed seating criteria.

Seating must be arranged to allow for ready escape in case of fire or other casualty.

Aisles not over 15 feet long shall be 24 inches wide. Aisles over 15 feet long shall be 30 inches wide.

If seats are in rows the distance from seat front to seat back shall be not less than 30 inches.

SECTION B

PLAN SUBMITTAL

Submitting Plans - *46 CFR 177.202(T) and 46 CFR 116.202(K)*

Vessel Under Construction

As the owner of a vessel requesting initial inspection for certification, you must, prior to the start of construction unless otherwise allowed, submit to the Marine Safety Center 3 copies of each of the following plans:

- Outboard profile
- Inboard profile
- Arrangement of decks

In addition, prior to receiving a Certification of Inspection you must submit the following information as applicable:

- Midship section.
- Survival craft embarkation stations.
- Machinery installation, *including but not limited to:*
  - Propulsion and propulsion control, including shaft details
  - Steering and steering control, including rudder details
  - Ventilation diagrams
  - Engine exhaust diagrams
- Electrical installation, *including but not limited to:*
  - Elementary one line diagram of the power system
  - Cable lists
  - Bill or materials
  - Type and size of generators and prime movers
  - Type and size of generator cables, bus tie cables, feeders, and branch circuit cable
  - Power, lighting, and interior communication panel boards with number of circuits and rating of energy consuming devices
  - Type of capacity of storage batteries
  - Rating of circuit breakers and switches, interrupting capacity of circuit breakers, and rating and setting of over-current devices
  - Electric plant load analysis
- Lifesaving equipment locations and installation

Submitting Plans *(Continued)*

Vessel Under Construction *(Continued)*

- Fire protection equipment installation, *including but not limited to:*
  - Fire main system plans and calculations
  - Fixed gas fire extinguishing system plans and calculations
  - Fire detecting systems and smoke detecting system plans
  - Sprinkler system diagram and calculations
  - Portable fire extinguisher types, sizes and locations
- Fuel tanks
- Piping systems including: bilge, ballast, hydraulic, sanitary, compressed air, combustible and flammable liquids, vents, sounding, and overflows
- Hull penetrations
- Marine sanitation device model number, approval number, connecting wiring and piping

.

For sailing vessels

- Masts, including integration into the ship's structure
- Rigging plan showing sail areas and centers of effort as well as the arrangement, dimensions, and connections of the standing rigging.

Plan Review/Approval

The Sector UMR Domestic Vessels Inspection Branch is the starting place for plan review. Branch personnel will receive and determine which plans will be reviewed by Sector personnel and which will be forwarded to the Marine Safety Center for review and approval. .

Contact the Inspections Branch for current instructions on plan submission.

Submitting Plans *(Continued)*

Vessels Already Constructed

If your vessel was constructed prior to plan approval or prior to receipt by MSC of the information previously discussed, you may be required to submit additional plans and information, or manufacturers' certifications of construction. Your vessel may also be subjected to testing including reasonable destructive testing. Additional inspections may be required to verify that the vessel complies with minimum construction requirements.

Sister Vessels

Plans are not required for a vessel that is a sister to one that is already certified, provided:

- Plans for the original vessel are on file with the Marine Safety Center or our department vessel files.
- The owner of the plans authorizes their use.
- The regulations used for the original plan approval have not changed since the original approval
- There are no major changes to the systems to be used.

General Requirements for Plans

Introduction

All plans submitted for approval should have the following information marked on them

- Vessel name
- Official number
- Route
- Scale: *i.e.* ___inches = ___feet
- Plan identification
- Builder/Shipyard
- Hull identification number

Helpful Ideas

- Use of graph paper is recommended
- Scaled drawings are preferred
- List dimensions, measurements, & specifications
- Photos if large enough & show sufficient detail may be submitted in addition to plans
- Abbreviations may be used if they are defined or explained and clear to the reviewing officer

Midship Section Plans

Description

Midship Section and other Sections showing construction details:

(1) Amidship
(2) Bow at the collision bulkhead (*see page F-3*)
(3) Immediately forward of the deckhouse
(4) Transom

Where a vessel is to carry more than 49 passengers, the section views should also show the construction of the watertight bulkheads. Specify species of wood, grade of steel or aluminum, welding procedure and rod. All the dimensions are to be finished sizes.

Construction Details

Construction details are to show deck and hull plating or planking, and structural members including

- keel
- planking
- sheer clamps
- bilge stringers
- deck beams
- columns
- frames
- floors
- chine (if hard chine)
- engine beds
- fuel tank supports
- fuel tank installation

Fastenings

The means of fastenings to include

- type
- size
- material of fastening
- weld design

Midship Section Plans *(Continued)*

Fiberglass Reinforced Plastic

The layup of the vessel's hull must be shown in detail and include information such as:

- Size, type and manufacturer of **woven roving**
- Size, type and manufacturer of **mat**
- Type and manufacture of **resin**
- Layup schedule
- Joint details
- Burnout test results
- Tensile test results

Fire retardant resins are recommended, if fire retardant resins are not used, additional requirements for fixed fire fighting systems and restrictions from overnight accommodations will be required.

Summary

Drawings must clearly illustrate the necessary details of the vessel.

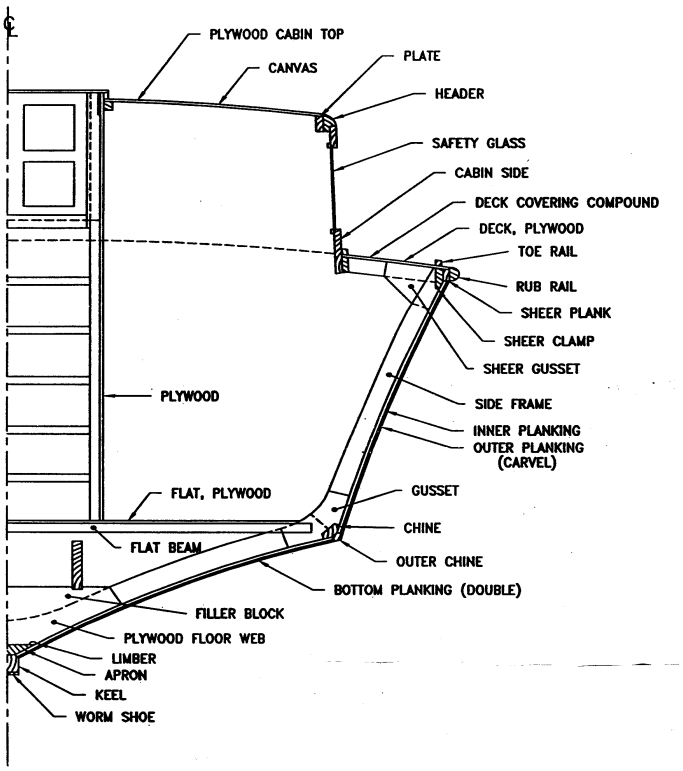
When plans are approved by the OCMI, one copy will be kept by the inspection office and the other will be returned to the submitter.

If plans submitted to the MSC are approved, one copy will be kept at the MSC, one copy forwarded to the OCMI, and one copy returned to the submitter.

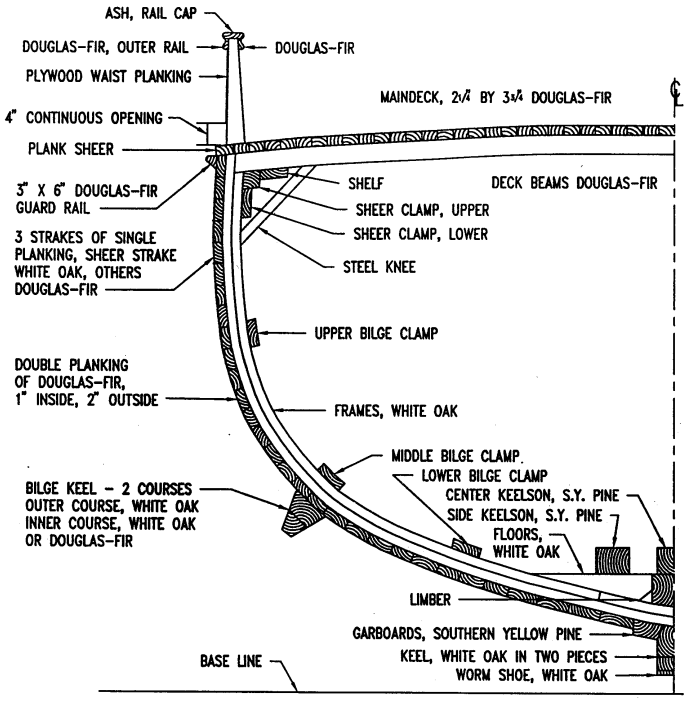
Plans returned for revision must be corrected in accordance with the comments provided in the MSC letter returned with the plans. Make all corrections required and provide explanations if requirements were not incorporated.

Plans too small, indecipherable, incomplete or overly sloppy will not be reviewed.

Midship Section Plans *(Continued)*



Drawing should be to scale and should include the following: Fastenings, describe material specifying, monel, copper, etc. and size.



The midship section drawing should show the construction details at various locations on the vessel I.E. In the bow at the collision bulkhead, immediately forward of the deckhouse. If the vessel is to carry more than 49 passengers, the section views should also show the construction of required watertight bulkheads.

Outboard Profile Plans

Information to be Included

The outboard profile must show the exterior view of the vessel as it appears or will appear when completed.

This view should show in solid outline the:

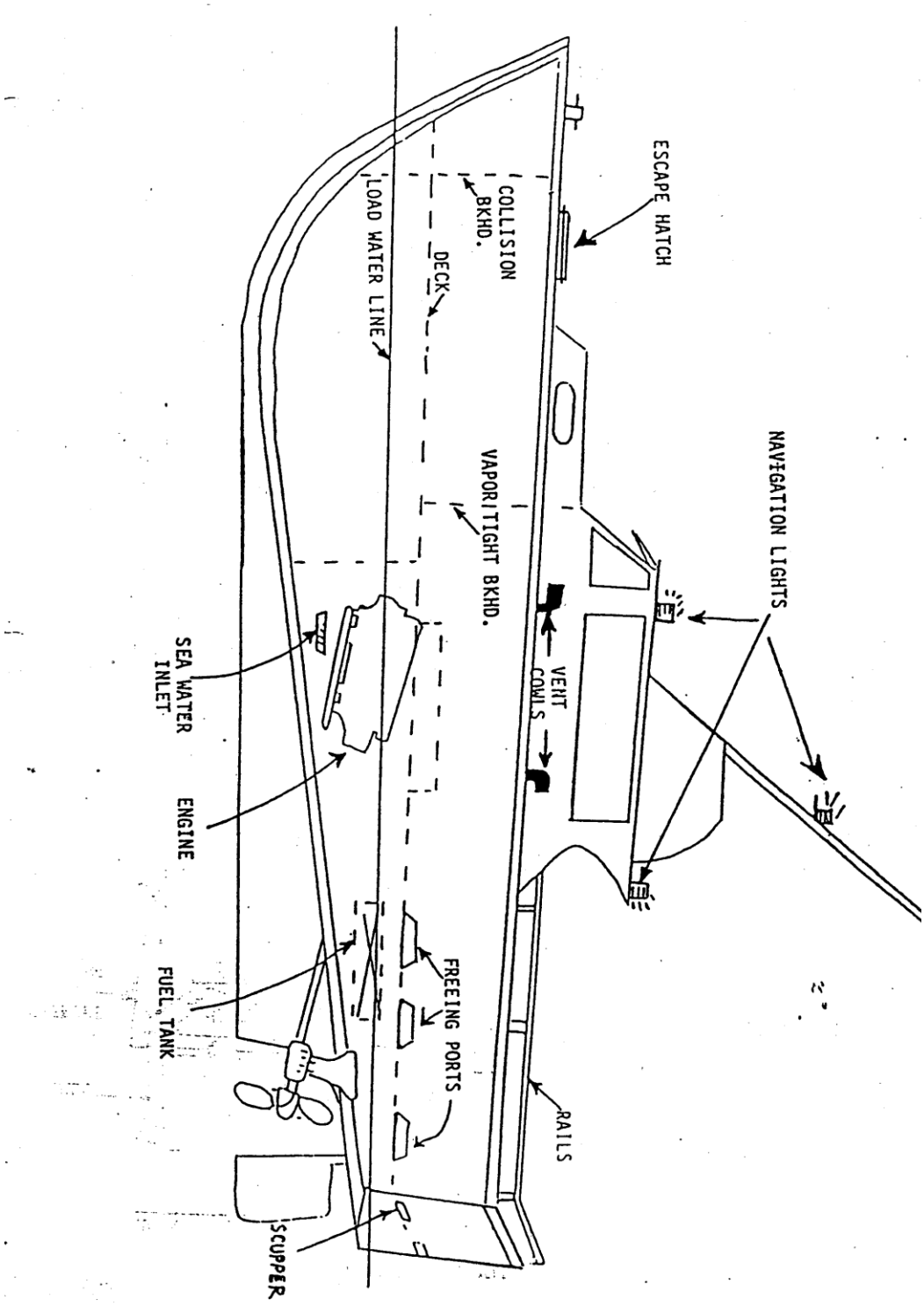
- Deckhouse
- Keel
- Rudders
- Propellers
- Shafts
- Struts
- Deck scuppers
- Freeing Ports
- Port lights
- Ventilation cowls
- Bulkheads
- Navigation lights
- Safety rails
- Estimated load waterline
- Openings into the hull and deckhouse

Dotted lines should show the outline of:

- Decks
- Bulkheads
- Engines
- Fuel tanks
- Watertight hatches
- Means of escape

Outboard Profile Plans *(Continued)*

Example



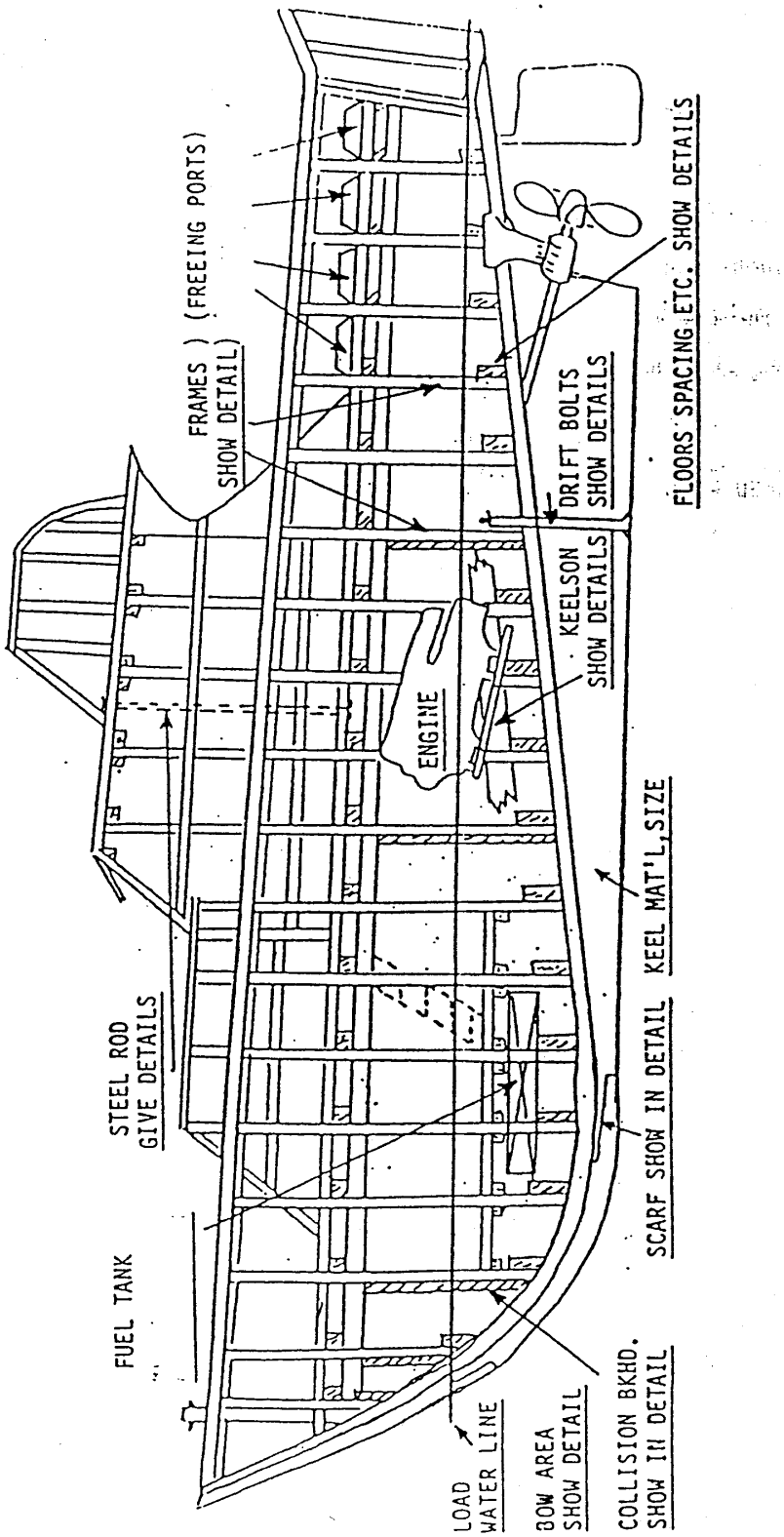
Inboard Profile Plans

Information to be Included

The inboard profile plan must show those internal structural members as listed under the midship sections and, in addition, the type of material used in construction *(species, in the case of wood)*, location of decks, hatches, fuel tank, and engines.

Inboard Profile Plans *(Continued)*

Example



Arrangement of Decks Plans

Information to be Included

Plan view of various decks are to show the locations of :

- All watertight and non-tight bulkheads
- Arrangements of all compartments
- All permanent installed equipment
- All portable installed equipment

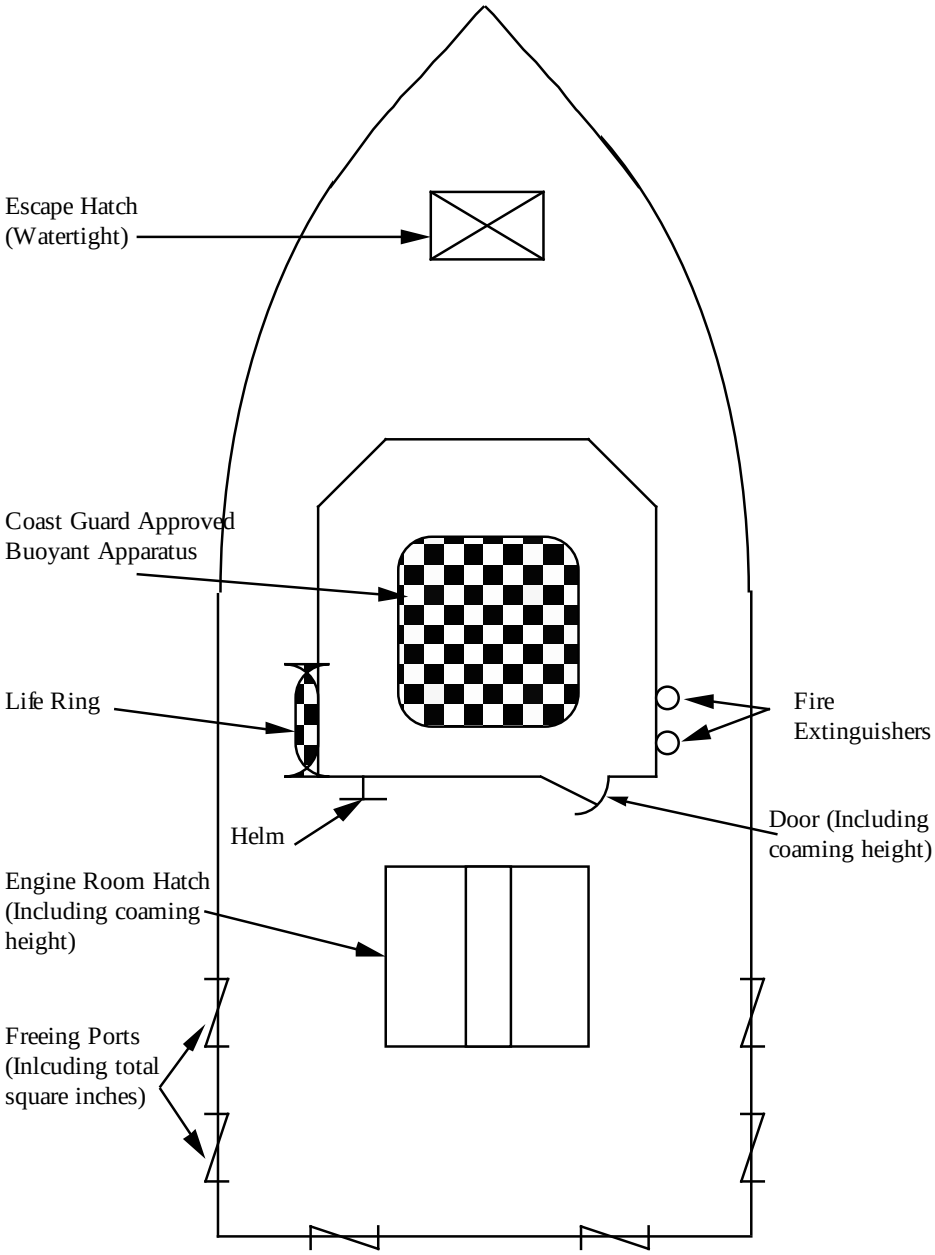
These will include:

- Toilet areas
- Pilothouse
- Hatches
- Doors
- Galley
- Accommodation spaces
- Ladders
- Windows
- Portable fire extinguishers
- Fixed fire extinguisher systems
- Primary life saving equipment
- Freeing ports

Provisions for ventilating all spaces including machinery and fuel tank spaces should also be shown.

Arrangement of Decks Plans *(Continued)*

Example



Machinery Installation Plans

Information to be Included

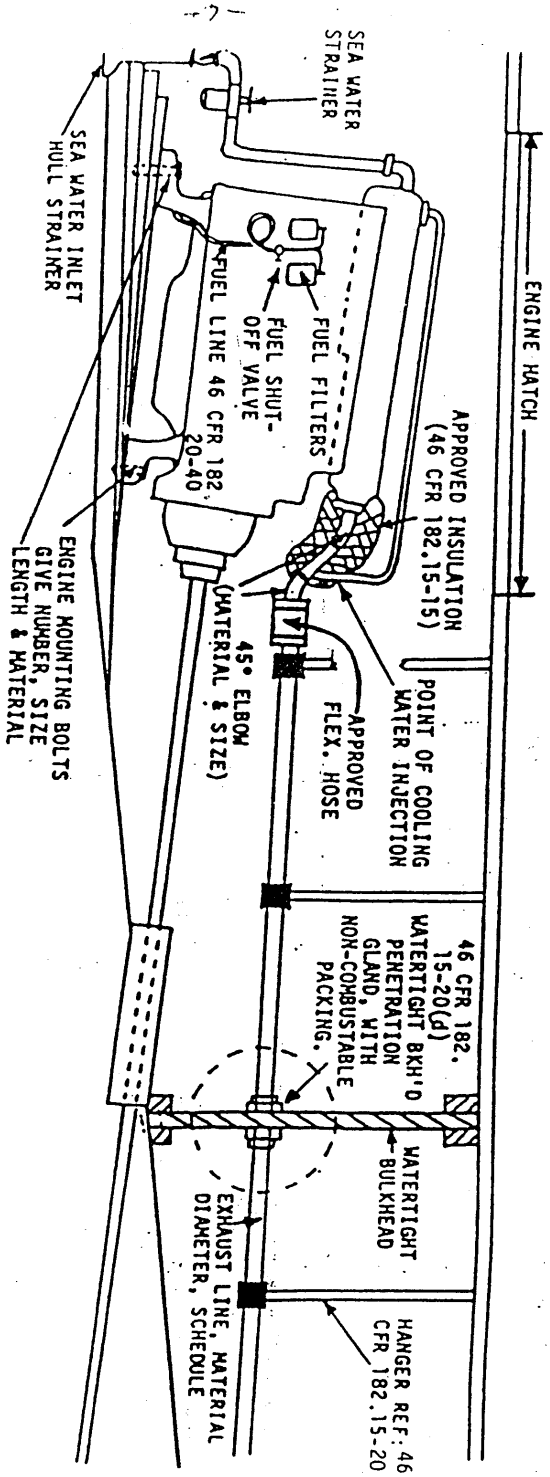
The plans should show in detail the installation of propulsion and auxiliary machinery including

- Descriptions
- Ratings
- Locations

Of particular concern are

- Propulsion machinery
- Auxiliary generators
- Steering systems
- Pressure vessels
- Boilers
- Heating equipment
- Davits on cranes
- Machinery space ventilation

Example


SEA WATER STRAINER
SEA WATER INLET HULL STRAINER
FUEL FILTERS
FUEL SHUT-OFF VALVE
FUEL LINE 46 CFR 182. 20-40
ENGINE HATCH
APPROVED INSULATION (46 CFR 182.15-15)
ENGINE MOUNTING BOLTS GIVE NUMBER, SIZE LENGTH & MATERIAL
45° ELBOW (MATERIAL & SIZE)
APPROVED FLEX. HOSE
POINT OF COOLING WATER INJECTION
46 CFR 182. 15-20(d) WATERTIGHT BKH'D PENETRATION GLAND, WITH NON-COMBUSTABLE PACKING.
WATERTIGHT BULKHEAD
EXHAUST LINE, MATERIAL DIAMETER, SCHEDULE
HANGER REF: 46 CFR 182.15-20

Electrical Installation Plans *46 CFR 183(T) and 46 CFR 120(K)*

Information to be Included

The electrical system plan should be a schematic drawing that shows all the electrical installations.

All cables must be identified by

- Type
- Size
- Number of conductors
- Approximate length of run

The plan must show all system components to include

- Batteries
- Regulators
- Light fixtures
- Gauges
- Ground Systems
- Transformers
- Inverters
- Rectifiers
- Size of all loads
- Generators
- Disconnect switches
- Overload protection
- Distribution panels
- Cooking Equipment
- Emergency lighting
- Heating Equipment
- Shore Connections
- Independent motors

Name-plate data and rating for each component must be included.

A complete electrical load analysis must also be provided.

Equipment installed in machinery spaces must be rated for service at an ambient temperature of 50 deg C / 122 deg F.

Voltage Requirements

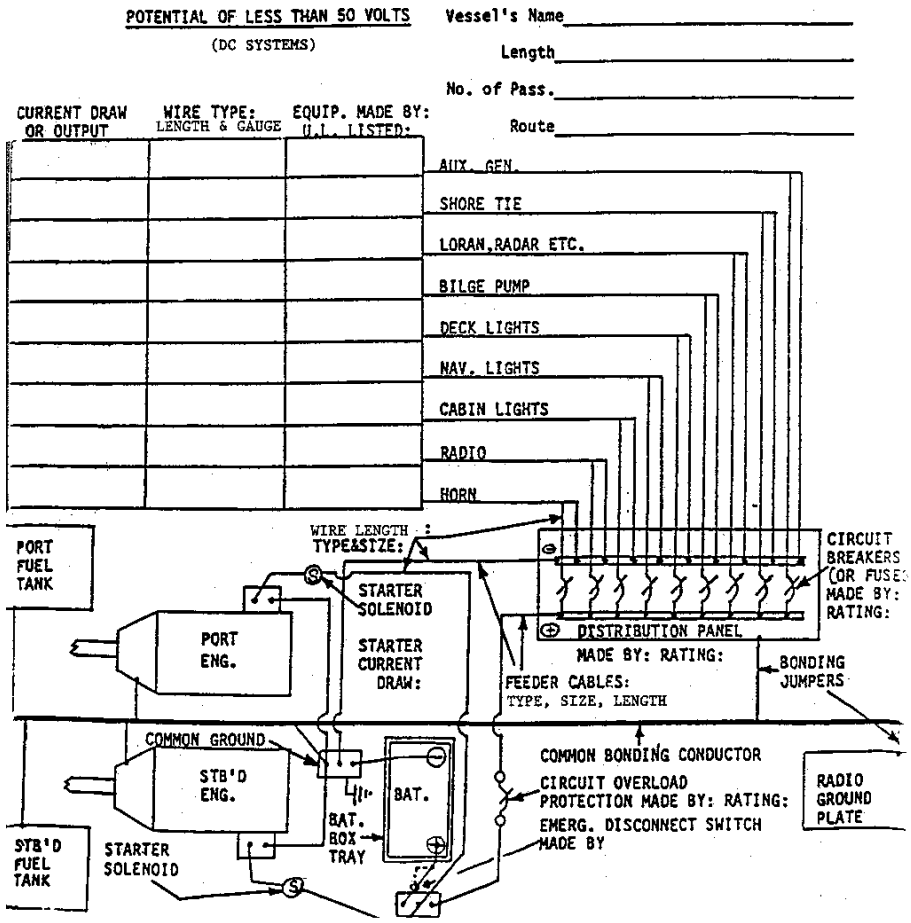
Regulations regarding electrical systems are divided into two different sets of requirements as listed below.

Systems operating at potentials:

- less than 50 volts - 46 CFR 183.430
- 50 volts. or more - 46 CFR 183.340

Electrical Installation Plans *(Continued)*

Example



Fuel Tank Plans

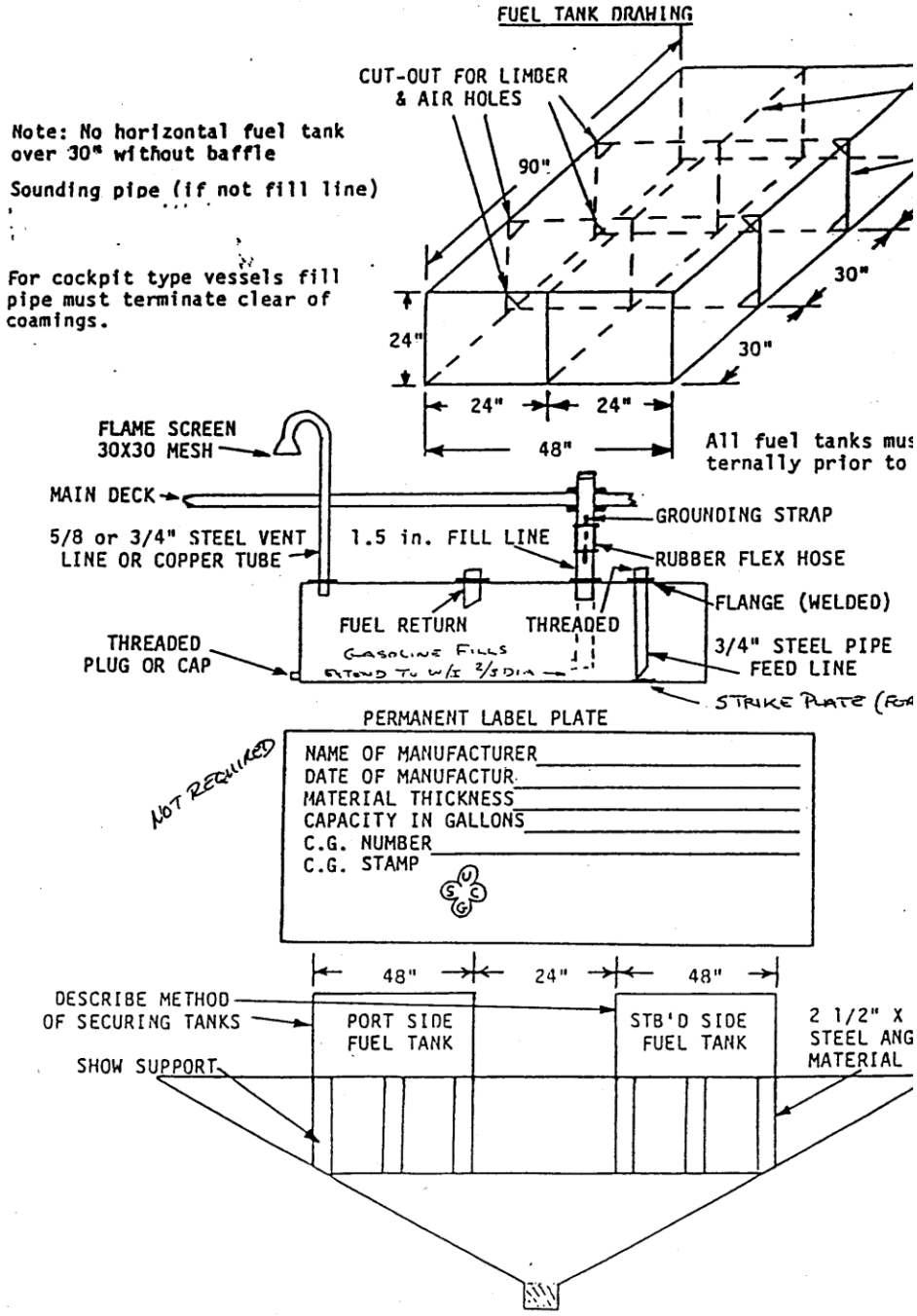
Information to be Included

The plans must show:

- Dimensions
- Capacity
- Thickness of material
- Type of material
- Method of assembly
- Location of baffles
- Connection of vent, fill, and supply lines and the location of bonding straps and groundings
- Means of securing tanks to prevent movement

Fuel Tank Plans *(Continued)*

Example



Piping System Plans

Information to be Included

The plans must show all piping systems including:

- Engine cooling
- Ballast
- Fuel
- Drinking water
- Exhaust cooling
- Bilge
- Hydraulic
- MSD* system

All component parts of each system are to be shown, including:

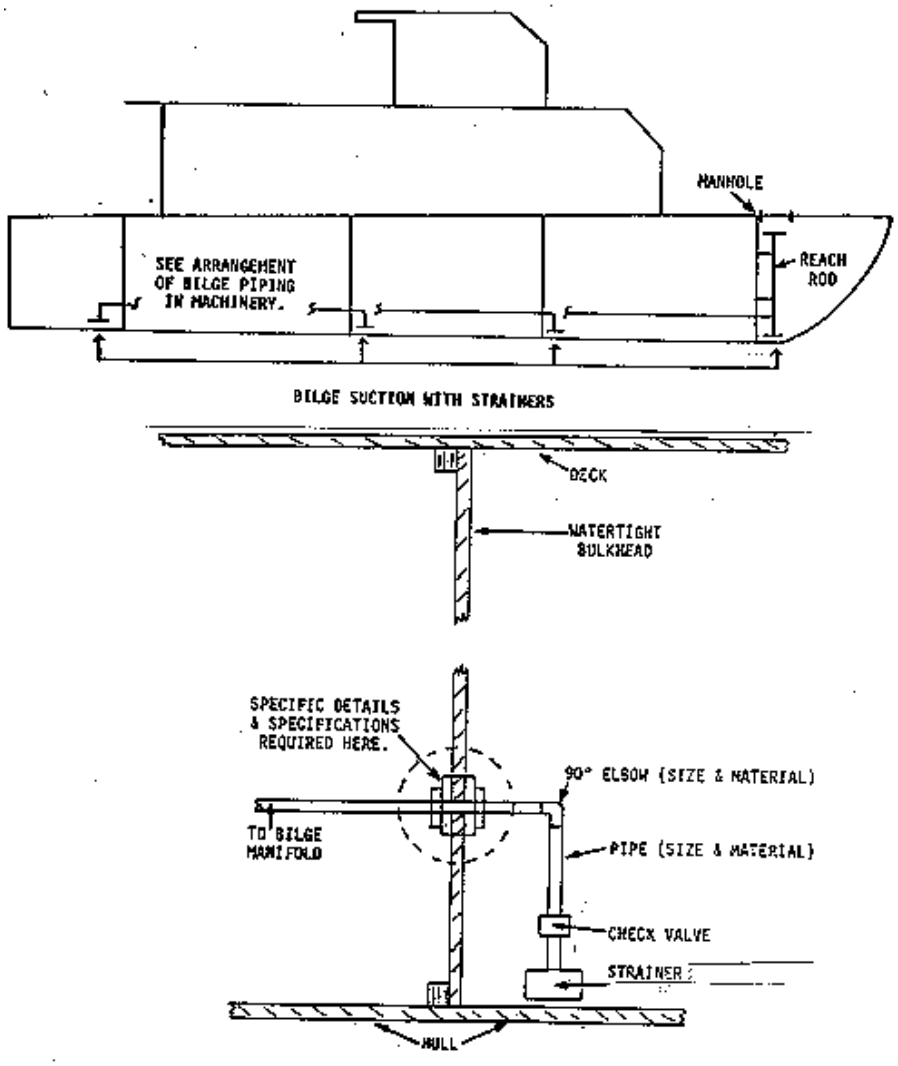
- Piping size
- Valves
- Filters
- Flexible fuel hose
- Piping material
- Pumps
- Strainers

The length of flexible fuel hose, model number and manufacture must be listed and must be Coast Guard approved. Flexible hose in excess of 30 inches is permitted as long as the hose meet SAE standard J-1942 and the end fittings meet SAE J-1475.

* *Marine Sanitation Device.*

Piping System Plans (*Continued)*

Example



Bulkhead & Deck Penetrations and Shell Connections Plans

Information to be Included

You must submit complete details of all piping and cable penetrations and all through-hull fittings.

Your drawings must show

- Material specification for fittings
- Method of installation
- Location of valves
- Methods of sealing penetrations

Inclusion of these details on other plans instead of a separate plan is acceptable.

Skin Valves

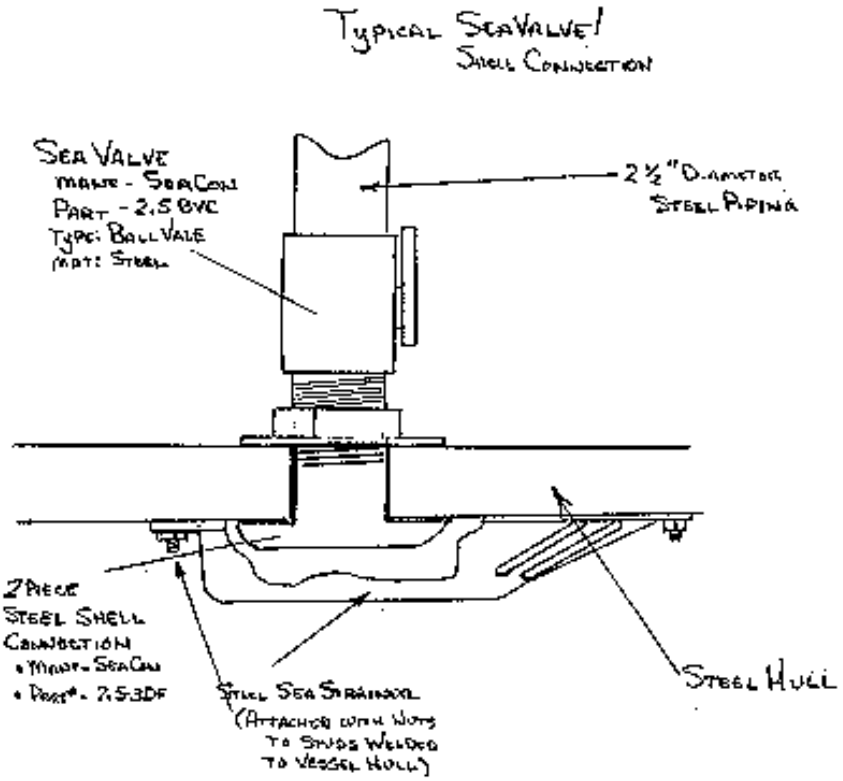
All shell connections within six inches of the waterline and below are required to be fitted with a sea valve.

Sea valves and shell connections are required to be metal.

In the case of a non-metallic hull, materials which can be demonstrated to afford an equal degree of strength and heat resistance as to that of the hull may be considered on a case by case basis.

Bulkhead & Deck Penetrations and Shell Connections Plans *(Continued)*

Example



SECTION C

LIFE SAVING EQUIPMENT REQUIREMENTS

Life Preservers - *46 CFR 180.71 - 180.78(T) and 46 CFR 117.71-78(K); 46 CFR 185.604(T) and 46 CFR 122.604(K)*

Type Required

Only Type I life preservers with Coast Guard Approval Numbers 160.002, 160.005 and 160.055 are approved for all passenger-carrying vessels.

Quantity Required

One **adult** type life preserver is required for each person aboard the vessel.

One **child** type life preserver is required for each person aboard the vessel that is smaller than the lower size limit of the adult life jacket.

In addition, at a minimum at least 10% of the number of adult life preservers must be of the approved child type and maintained aboard at all times.

Markings

You must clearly and legibly mark each life preserver with your vessel's name in block capital letters.

Reflective Material

Each of the life preservers must have at least 31 square inches of reflective material attached to the front, back, and reversible front and back sides.

Repairs

Only repairs made by the manufacture or an approved representative are authorized. **No "homemade" repairs will be acceptable on any life saving equipment including life jackets.**

Life Preservers - *(Continued)*

Stowage

Life preservers shall be distributed throughout the accommodation spaces in protected places convenient for all persons on board.

Each stowage container must not be capable of being locked. If practicable, the container must be designed to allow the life jackets to float free.

If life jackets are stowed more than 7 feet above the deck, a means for quick release of the stowage container must be provided.

The number and identification of the items stowed inside, and their sizes, must be marked in clearly legible letters and numbers on each container for life jackets. Identification of the items may be in words, or the appropriate symbols in IMO Resolution A.760 (18) (incorporated by reference; see 46 CFR 175.600). Letters and numbers must be at least 50 millimeters (2 inches) high. Symbols must be at least 100 mm (4 inches) square.

Children's life jackets must be labeled and stowed separately from adult life preservers, so that the child life jackets are not mistaken for adult life jackets.

Note

The word life preserver, life jacket, and personal flotation device (PFD) all have the same meaning.

Survival Craft *46 CFR 180.200 - 180.208(T) and 46 CFR 117.130-208*

Type Required

You must provide a sufficient number of life floats or inflatable buoyant apparatus in accordance with the chart below.

Inflatable Buoyant Apparatus and Life Floats are required to be marked with CG Approval numbers.

NOTE

(1) Inflatable life rafts of 6 persons or greater can be substituted for either.

(2) Lakes Bays and Sounds and the Rivers sections do apply to this Zone

Quantity Required

Route	Water Temp	Vessel Constructed of	Subdivision	Floatfree 406 EPIRB	Survival craft required
Oceans Route	cold water	———	without subdivision	———	100% Inflatable Bouyant Apparatus
			with subdivision	———	100% Life Floats
	warm water	———	———	———	67% Inflatable Bouyant Apparatus
Coastwise Route	cold water	wood	without subdivision	———	67% Inflatable Bouyant Apparatus
			with subdivision	———	100% Life Floats
		other than wood	———	———	100% Life Floats
	warm water	———	———	———	100% Life Floats
Coastwise Route Not more than 3 miles from shore	———	———	without subdivision	without EPIRB	100% Life Floats
				with EPIRB	50% Life Floats
			with subdivision		50% Life Floats
Limited Coastwise Route	cold water	wood	without subdivision		67% Inflatable Bouyant Apparatus
			with subdivision		100% Life Floats
		other than wood	———		100% Life Floats
	warm water	———	———		50% Life Floats
Limited Coastwise Route Not more than 3 miles from shore	cold water	———	without subdivision	without EPIRB	100% Life Floats
				with EPIRB	50% Life Floats
			with subdivision		50% Life Floats
	warm water	———	without subdivision	without EPIRB	50% Life Floats
				with EPIRB	None
			with subdivision		None
Lakes, Bays, & Sounds	cold water	wood	without subdivision	———	100% Life Floats
			with subdivision	———	50% Life Floats
		other than wood	———	———	50% Life Floats
	warm water	———	———	———	None
Not more than 1 mile from shore	———	———	———	———	None
Rivers	cold water	———	without subdivision	———	50% Life Floats
			with subdivision	———	None
	warm water	———	———	———	None

Survival Craft *(Continued)*

Vessels on International Routes

Vessels on international routes are required to have life rafts or inflatable buoyant apparatus of sufficient total capacity to carry 100% of the persons on board.

Wooden Vessel

Wooden vessels, for the purposes of subdivision and lifesaving equipment requirements in this section, are a traditionally built, plank-on-frame vessel, where mechanical fasteners (screws, nails, trunnels) are used to maintain hull integrity.

Markings

Each life float or inflatable buoyant apparatus must be marked with the vessel's name and number of persons allowed on each.

They shall be conspicuously marked or painted in letters and numbers at least 1-1/2 inches high.

Paddles

Each life float must be provided with two **paddles** not less than 4-feet long. The paddles must be lashed to the life float to which they belong.

Water Light

Each life float must be fitted with a **water light**, CG approval 161.010. It must be attached around the body of the life float by a 3/8 lanyard that is resistant to deterioration from ultra violet light and at least 18 feet long.

Survival Craft *(Continued)*

Painter

In general, each life float or inflatable buoyant apparatus must be fitted with a **painter** 100 feet long.

- The painter must have a breaking strength of at least 1,500 lbs, except when the capacity of the life float or inflatable buoyant apparatus is 50 persons or more, then the breaking strength must be at least 3,000 lbs.

- If synthetic, the painter must be of a dark color and certified to be resistant to deterioration from ultraviolet light.

- The painter must be stowed in such a way that it runs out freely when the life float or inflatable buoyant apparatus floats freely away from the sinking vessel.

Note that if the vessel carries more than one life float, they may be grouped together to a single painter provided the combined weight of each group does not exceed 400 lbs. Each life float must be attached to the painter with line of equivalent strength as that required for the painter and of sufficient length so that each can float without contacting another life float.

Weak Link

The painter must be attached to the vessel with a **weak link** of the proper strength for the size of the life float(s) or inflatable buoyant apparatus unless the water depth is less than the painter length.

Annual Servicing

Inflatable buoyant apparatus are required to be serviced by an authorized servicing facility annually.

Ring Life Buoys *46 CFR 180.70(T) and 46 CFR 117.70(K)*

Type Required

Ring life buoys must meet CG approval 160.050. Those ring life buoys used on an oceans or coastwise route must be orange in color.

All ring life buoys must be a minimum of 24 inches in diameter, except if the vessel is less than 26 feet long, in which case you may use one ring life buoy of not less than 20 inches in diameter.

Quantity

If the vessel is not more than 65 feet in length you are only required to carry one ring life buoy. The ring life buoy must have attached a buoyant line.

If the vessel is greater than 65 feet in length you are required to carry 3 ring life buoys, one of which shall be fitted with a buoyant line.

NOTE

The buoyant line must be at least 60 feet in length, at least 5/16 inch in diameter and have a breaking strength of at least 1,124 pounds. If synthetic, it must be dark in color or of a type certified to be resistant to deterioration from ultraviolet light.

Markings

Each of the vessel's ring life buoys must be clearly marked in block capital letters with the vessel's name.

Each of the vessel's ring life buoys must be marked with Coast Guard approved Type II retro-reflective material. (Retro-reflective materials of a sufficient width (approximately 5 cm) should be applied around or on both sides of the body of the lifebuoy at four evenly-spaced points)

Water Lights

The vessel must carry one water light that meets CG approval 160.010, unless your vessel is restricted to daylight operations as specified on your COI.

Each of the water lights must have a lanyard that attaches around the body of the ring life buoy with at least 3 feet of line available but no longer than 6 feet.

If the vessel carries only one ring life buoy, the water light must be attached to the lanyard with a corrosion resistant clip. The clip must have a strength of at least 50 pounds to allow the water light to be quickly disconnected from the ring buoy.

Stowage

Ring life buoys must be stowed so as to:

- Be readily accessible
- Be stowed in a way that it can be rapidly cast loose
- Not be permanently secured in any way

Pyrotechnic Distress Signals *46 CFR 180.68(T) and 46 CFR 117.68(K)*

General Requirements

Pyrotechnic distress signals are required on all small passenger vessels, except those on short runs of less than 30 minutes.

Pyrotechnic signals are marked with an expiration date, must be replaced prior to the expiration date, and **must be approved under** 160.021 and 160.037.

Number Required

Whether the vessel is on a Lakes, Bays and Sounds or Rivers route, the vessel is required 3 hand red flare distress signals and 3 orange smoke distress signals.

If the vessel is on an Oceans or Coastwise route the vessel is required to carry 6 hand red flare distress signals, and 6 orange smoke distress signals.

Stowage Requirements

Flares are required to be stored in a portable watertight container of bright color, marked "DISTRESS SIGNALS" in legible contrasting color, of at least 1/2" letters. The container shall be stored at the primary Operating Station or, as an alternative, the signals may be stored in a pyrotechnic locker if it is located above the freeboard deck, away from heat, and in the vicinity of the operating station.

First Aid Kits *46 CFR 184.710(T) and 46 CFR 121.710(K)*

General Requirements

Vessels must carry either a Coast Guard approved kit approval series 160.041 or a kit with equivalent contents and instructions. For equivalent kits, the contents must be stowed in a suitable, watertight container that is marked "FIRST AID KIT".

Note that certain items within first aid kits have expiration dates. Items with expiration dates must be replaced prior to their expiration.

Stowage Requirements

The FIRST AID KIT must be stowed in a location that is easily visible and readily available to the crew.

Rescue Boat *46 CFR 180.210(T) and 46 CFR 117.210(K)*

General Requirements

Vessels greater than 65 feet in length are required to have a rescue boat unless it is determined that:

- The vessel is sufficiently equipped to allow the crew to recover a helpless person from the water.
- Recovery of a helpless person can be observed from the operating station.
- The vessel does not regularly engage in operations that restricts its maneuverability.

Vessels of not more than 65 feet are not required to carry a rescue boat unless:

- The vessel carries passengers on an open or partially enclosed deck; and
- The OCMI determines that the vessel is designed, arranged, or involved in operations so that the vessel itself cannot serve as an adequate rescue craft.

Acceptable Rescue Boats

In general, a rescue boat must be a small, lightweight boat with built-in buoyancy and capable of being readily launched and easily maneuvered. It must be equipped with navigation lights, a suitable pair of oars (under 160.056) or paddles (under 160.151) and should have a portable fire extinguisher. It must also be of adequate proportion to permit taking an unconscious person on board without capsizing.

On a vessel of more than 65 feet in length operating on *protected waters* a rescue boat approved under approval series **160.056** is acceptable.

On a vessel of more than 65 feet in length operating on *exposed or partially protected waters* a rescue boat approved under approval series **160.151** is acceptable.

On a vessel of not more than 65 feet in length, the rescue boat must be acceptable to the OCMI

SECTION D

FIRE FIGHTING AND DETECTING EQUIPMENT REQUIREMENTS

Power Driven Fire Pumps - *46 CFR 181.300(T) and 118.300(K)*

General Requirements

A self-priming, power-driven fire pump is required on the following mechanically propelled small passenger vessels:

- Vessel ≤ 65 feet that is a ferry
- Vessel ≤ 65 feet carrying more than 49 passengers
- All vessels > 65 feet

Vessels not required to have a power-driven fire pump must have at least 3 (2 1/2 gallon) buckets. Each bucket must have:

- A lanyard attached
- "FIRE BUCKET" stenciled in a contrasting color.

Fire Pump Requirements

The vessel's fire pump may be driven off of a propulsion engine or other source of power and must be permanently connected to the fire main. This pump may also be connected to the bilge system so that it can serve as a fire pump and a bilge pump.

If vessel is:

(1) Less than 65 feet and is authorized to carry more than 49 passengers; OR

(2) More than 65 feet;

Then the vessel is required to have a fire pump with:

- A minimum capacity of 50 gallons per minute
- A minimum pressure of 60 psi at the pump outlet

If vessel is:

(1) A ferry and is less than 65 feet and carrying not more than 49 passengers;

Then the vessel is are required to have a fire pump with:

- A minimum capacity of 10 gallons per minute
- The fire pump must be capable of projecting a steam from the highest hydrant through the nozzle a minimum distance of 25 feet.

If the vessel is authorized to carry more than 150 passengers **then** the vessel's fire pump must be capable of producing 50 psi at the highest hydrant on the vessel.

Fire Main System - *46 CFR 181.310 & 46 CFR 181.320(T) 46 CFR 118.310 & 46 CFR 118.320(K)*

General Requirements

All vessels required to have a power driven fire pump are required to have a fire main.

Piping used in the fire main system must be constructed of ferrous materials.

Fire hydrants for all vessels shall be of sufficient number and so located that any part of the vessel may be reached with an effective stream of water from a single length of hose.

A length of fire hose will always be attached to each hydrant.

Fire Hoses and Nozzles

If the vessel is:

- 65 feet or less and authorized to carry more than 49 passengers; OR
- Greater than 65 feet

Then your vessel must be equipped with:

- Commercial grade 1-1/2 inch lined fire hose (UL 19 approved) or equivalent:
  - hose must be 50 feet in length
  - hose must have brass or other corrosion resistant fittings
- Coast Guard approved (No. 162.027) nozzle.

If the vessel is 65 feet or less **and** is a ferry carrying not more than 49 passengers, **then** the vessel may be equipped with a fire hose and nozzle as described above, **or**, be equipped with:

- A garden hose that:
  - Is of good commercial grade, constructed with inner rubber tube, plies of braided fabric and outer rubber or equivalent cover,
  - Is of sufficient strength to withstand maximum pressure of the fire pump,
  - Has fittings made of suitable corrosion resistant material
  - Nozzle: Corrosion resistant material & capable of being changed from solid stream to spray patter.

Fixed Gas Fire Extinguishing Systems –

46 CFR 181.400,46 CFR 181.410 & 181.420(T)
46 CFR 118.400, 46 CFR 118.410 & 118.420(K)

General Requirements

A fixed gas fire extinguishing system must be installed in the following locations on all vessels:

- A space containing propulsion machinery.
- A space containing an internal combustion engine of more than 50 hp (37.3 kw).
- A space containing machinery powered by gasoline or other fuels having a flash point of 110°F or lower.
- A space containing fuel tanks for gasoline or any other fuel having a flash point of 110°F or lower.
- Cargo spaces that are inaccessible during a voyage and used for combustible cargo. *(Only CO2 will be allowed).*
- A paint locker.
- A storeroom containing flammable liquids *(including liquor of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters [2.5 Gallons] capacity or greater).*

Type System Required

Fixed gas fire extinguishing systems shall be approved by the Commandant and installed to the satisfaction of the OCMI.

Depending on the application, acceptable systems include CO_2, Halon, and pre-engineered automatic discharged systems.

Fixed Gas Fire Extinguishing Systems - *(Continued)*

Amount of CO2 Gas Required

The number of pounds of CO2 required is calculated by determining the gross volume of the space and dividing by the factor as listed in the chart below.

Factor	Gross volume of compartment *(cubic feet)*	
	Over-	Not over-
15	- - - - - -	500
16	500	1,600
18	1,600	4,500
20	4,500	50,000
22	50,000	- - - - - -

Additional Requirements

46 CFR 181.410 and 118.410 prescribe specific system requirements.

As previously mentioned, we recommend that you obtain a copy of the regulations if you plan to install a fixed gas fire extinguishing system. Also, you may want to refer to the Marine Safety Center's web site on fixed gas systems at: www.uscg.mil/hq/g-m/mse4/firefixedtboat.htm

Portable Fire Extinguishers - *46 CFR 181.500(T) and 46 CFR 118.500(K)*

General Requirements

The minimum number of portable fire extinguishers required shall be determined by using the table below

Space Protected	Minimum Number Required	Type Extinguisher permitted		
		CG Class	Medium	Minimum Size
Operating Station	1	B-I, C-I	Halon Carbon dioxide Dry chemical	2.5 Pounds 4 Pounds 2 Pounds
Machinery Space	1 for each	B-II, C-II located just outside exit	Carbon dioxide	15 Pounds
Open Vehicle Deck	1 for every 10 vehicles	B-II	Foam Halon Carbon dioxide Dry chemical	2.5 Gallons 10 Pounds 15 Pounds 10 Pounds
Accomodation Space	1 for each 250 square feet or fraction thereof	A-II	Foam Dry chemical	2.5 Gallons 5 Pounds
Galley, Pantry, Concession Stand	1 for each	A-II, B-II	Foam Dry chemical	2.5 Gallons 10 Pounds

Extinguishers must be UL approved for marine use and must be mounted on an approved marine-use mounting bracket.

Location

Extinguishers must be placed near the space protected.

Fire Axe - *46 CFR 181.600(T) and 46 CFR 118.600(K)*

General Requirement

Each vessel more than 65 feet in length is required to be equipped with one fire axe.

The fire axe must be located in or adjacent to the pilothouse.

Fire and Smoke Detection Systems - *46 CFR 181.400 & 181.450(T) and 118.400(K)*

General Requirement

The following spaces must be fitted with a **fire detecting system**:

- A space containing propulsion machinery.
- A space containing an internal combustion engine of more than 50 hp (37.3 kw).
- A space containing an oil fired boiler.
- A space containing machinery powered by gasoline or other fuels having a flash point of 110°F or lower.
- A space containing fuel tanks for gasoline or any other fuel having a flash point of 110°F or lower.

Exceptions: The above listed spaces are not required to have a fired detecting system when the space is protected by a fire extinguishing system that is capable of automatic discharge upon heat detection, or if the space is manned.

Smoke Detecting System

If the vessel has overnight accommodation spaces for passengers, those accommodation spaces must be fitted with an **independent modular smoke detecting and alarm unit**.

The unit must be:

- UL Standard 217 and be listed as a "Single Station Smoke Detector-Also suitable for use in Recreational Vehicles".
- Contain an independent power source.
- Alarm on low power.

SECTION E

VESSEL CONTROL REQUIREMENTS

Compass - *46 CFR 184.402(T) and 46 CFR 121.402(K)*

General Requirements

All vessels except for those listed below, are required to operate with a magnetic compass designed for marine use, mounted at the primary operating station.

Except on a vessel limited to daylight operations, the compass must be illuminated.

The following vessels need not be fitted with a compass:

- Vessels in river service
- Non-self propelled vessels
- Vessels operating in protected waters with short restricted routes

Radars - *46 CFR 184.404(T) and 46 CFR 121.404(K)*

General Requirements

A vessel must be fitted with an FCC type accepted general marine radar system for surface navigation with a radar screen mounted at the primary operating station when all of the following apply:

For Subchapter T Vessels

- The vessel is self propelled;
- The vessel has an oceans, coastwise, or limited coast wise route and
- The vessel carries more than 49 passengers.

For Subchapter K Vessels

- All vessels which fall under the applicability of 46 CFR 114.110(K) are required to have an FCC type approved marine radar with the following exceptions:
  - A ferry on a rivers route less than 1 mile from shore
  - A vessel operated on a short restricted route, when the cognizant OCMI (Officer In Charge Marine Inspection) has determined a radar is not necessary.

The radar and its installation must be suitable for the intended speed and route of the vessel.

Radios - *46 CFR 184.502(T), 46 CFR 502(K) and 33 CFR 26.03*

Coast Guard Small Passenger Vessel regulations (Subparts T and K) broadly require compliance with applicable Federal Communications Commission (FCC) regulations containing specific applicability and requirements (47 CFR 80).

Coast Guard Navigation regulations also include specific applicability and requirements (33 CFR 26).

General Requirements

The Communications Act (47 CFR 80.901):

"Small Passenger Boats: The provisions of Part III of Title III of the Communication Act require United States vessels which transport more than six passengers for hire while such vessels are being navigated on any tidewater within the jurisdiction of the United States **adjacent or contiguous to the open sea, or in the open sea** to carry a radiotelephone installation complying with this subpart. "

(Typically, vessels operating within Sector Upper Mississippi River's area of responsibility are not subject to The Communications Act.)

The Bridge-to-Bridge Act (47 CFR 80.1001 and 33 CFR 26).

"The Bridge-to-Bridge Act and the regulations of this part apply to the following vessels in the navigable waters of the United States:

(a) Every power-driven vessel of 20 meters *(65.6 feet)* or over in length while navigating;
(b) Every vessel of 100 gross tons and upward carrying one or more passengers for hire while navigating;
(c) Every towing vessel of 7.8 meters (26 feet) or over in length, measured from end to end over the deck excluding sheer, while navigating; and
(d) Every dredge and floating plant engaged, in or near a channel or fairway, in operations likely to restrict or affect navigation of other vessels. An unmanned or intermittently manned floating plant under the control of a dredge shall not be required to have a separate radiotelephone capability."

Voluntary Radio Installations (47 CFR 80.1151).

"Voluntary ships must meet the rules applicable to the particular mode of operation as contained in the following subparts of this part *(47 CFR 80)* and as modified by §80.1153:

Operating Requirements and Procedures—Subpart C
Equipment Technical Requirements—Subpart E
Frequencies—Subpart H"

Emergency Broadcast Placard

A durable placard must be posted next to all radiotelephone installations with emergency broadcast instructions and information specific to the individual vessel.
Specific instructions for the wording of the Emergency Broadcast Placard can be found in 46 CFR 184.510(T) and 46 CFR 510(K).

Automatic Identification Systems – *33 CFR 164*

General Requirement

The USCG Navigation Center posted the new regulations at:
http://www.navcen.uscg.gov/?pageName=AISRequirementsRev

The Final Rule, published January 30, 2015, can be found at:
https://www.federalregister.gov/articles/2015/01/30/2015-01331/vessel-requirements-for-notices-of-arrival-and- departure-and-automatic-identification-system

A cursory summary of the changes are provided below. Readers are strongly encouraged to review the Final Rule and the text of the new regulation prior to initiating compliance action to ensure proper application.

AIS CLASS A DEVICE - REQUIRED
ALL Federal Navigable Waterways
Self propelled commercial vessel > 65' (Including T Boats)
Tow vessel >26'/600 hp (in commercial service)
All K Boats
* Dredges (in/near shipping channels)
Any size vessel engaged in movement of CDC or flammable/combustible cargo in bulk

AIS CLASS B DEVICE – **In Lieu Of** Class A Device
(*IF not subject to non-crew member pilotage*)
Fishing Industry Vessels
T Boats (>65) (not in VTS area and speed =<14 knots)
* Dredges

INTERNATIONAL VOYAGES
(SOLAS Requirements)
Vessel >= 300 GT
Vessel > = 150 GT w/ 12 or more passengers

IMPLEMENTATION DATE
(For vessels now under reg but were not prior to January 30, 2015.)
March 1, 2016

Automatic Identification Systems – *(Continued)*

EXCEPTIONS
*(There are **no** exceptions only compliance date **extensions**.)*
Must be requested. Applicant may receive **up to** a 5-year deviation for:
Vessels operating only 1 mile from facility, shipyard, fleet, etc…
Short (< 1 mile) Voyages (i.e. bank to bank ferries)
Remote from other AIS equipped vessels
When vessel design unable to support
If AIS Class B device lacks a display

NOTES:
Portable AIS. The use of a portable AIS is permissible only to the extent that electromagnetic interference does not affect the proper function of existing navigation and communication equipment on board and such that only one AIS device may be transmitting on board a vessel at any one time.

** The definition of a dredge does not include a deck barge with a crane or excavator.*

Sound Signals – *Navigation Rules & Regulations Handbook - Rules 32 & 33*

General Requirements

Vessels 12 meters (39.4 feet) in length and over shall be provided with a whistle and a bell.

Vessel of 20 meters (65.6 feet) or more in length shall be provided with a bell in addition to a whistle.

Vessels less than 12 meters are not required to have a whistle or bell but if not carried, the vessel shall be provided with some other means of making an efficient sound signal.

Whistle

If applicable, the vessel's whistle must be capable of being operated from the vessel's control station and of producing a sound as listed in the table below.

Length of Vessel		Fundamental Frequency Range (Hz)	Audibility Range in (Nautical Miles)
Meters	Feet		
12m or more but less than 20m	39.4' or more but less than 65.6'	250-525	.5
20m or more but less than 75m	65.6 or more but less than 246.1'	250-525	1.0
75m or more but less than 200m	246.1' or more	130-350	1.5

Sound Signals – *(Continued)*

Bell

If applicable, the vessel's bell must be made of corrosion resistant material and designed to give a clear tone. Use the chart below to determine the minimum size required.

Length of Vessel		Diameter of bell mouth shall be not less than
Meters	Feet	
12m or more but less than 20m	39.4' or more but less than 65.6'	200mm or 7.9"
20m or more	65.6' or more	300mm or 11.8"

Where practicable, a power driven bell striker is recommended to ensure constant force, but manual operation is also acceptable.

The mass of the striker shall be not less than 3 percent of the mass of the bell.

Charts and Publications - *46 CFR 184.420(T) and 46 CFR 121.420(K)*

General Requirements

The vessel is required, as appropriate for the vessel's route, to have on board the following items:

- Charts of large enough scale to make safe navigation possible
- U.S Coast pilot or similar publication
- Coast Guard Light List
- Notices to mariners
- Tide tables
- Current tables or a river current publication issued by the U.S. Army Corps of Engineers or river authority.

Extracts from the publications may be provided instead of the complete publication.

Internal Communication Systems - *46 CFR 184.602 - 184.610(T) 46 CFR 121.602 - 121.610(K)*

Pilot House/ Machinery Space

If the vessel is equipped with pilothouse control must also be equipped with a fixed two-way communication system that serves the operating station and the location where the means of controlling the propulsion machinery is located. *(This is to provide communication to manually control the propulsion machinery should the normal control system fail).*

If the vessel is equipped with an auxiliary means of steering, it must also have a fixed two-way communication system.

A fixed two-way communication system is not required when:

- The vessel has two screws
- The locations listed above are sufficiently close enough together that direct voice communications is possible.

The OCMI may accept hand held portable radios.

Public Address System

In general, each of the following vessels are required to have a fixed public-address system operable from the operating station and capable of being heard in all passenger and crew locations:

- A vessel greater than 65 feet in length.
- A vessel with more than one passenger deck.
- A vessel with overnight accommodations.

Vessels $\leq$ 65 feet may use a bull horn if audible throughout the accommodation spaces during normal operating conditions and meets the satisfaction of the OCMI.

Vessels carry $\leq$ 49 passengers are not required to have a public address system if the OCMI is satisfied that a public announcement made from the operating station without amplification can be heard throughout the accommodation spaces.

Propulsion Engine Control Systems - *46 CFR 184.620(T) and 46 CFR 121.620(K)*

General Requirements

A vessel must have two independent means of controlling each propulsion engine. Control must be provided for the engine speed, direction of shaft rotation, and engine shutdown.

One means may be the ability to readily disconnect the remote engine control linkage to permit local operation at the engine. Communication must be provided between the engine and the control station as determined by the OCMI.

A multiple engine vessel with independent remote propulsion controls need not have a second means of controlling each engine.

Engine Shutdown

In addition as required above, a vessel must have a reliable means of shutting down a propulsion engine from the operating station, which is independent of the engine's speed control.

Loss of Power to the Control System

The vessel’s propulsion engine control system, including pilothouse control, 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.

SECTION F

STABILITY & SUBDIVISION REQUIREMENTS

Stability Tests - *46 CFR 170-174*

Simplified Stability Test

Prior to being certificated, the vessel must have undergone a stability test.

The following vessels are allowed to undergo a ***simplified stability test***.

- Vessel $\leq$ 65 feet and
- Carries less than 150 passengers, or
- Carries less than 12 on an international voyage, or
- Has not more than one deck above the bulkhead deck.

Upon satisfactory completion of a simplified stability test, our office will issue a stability letter.

Note: **Pontoon vessels** must undergo a simplified stability proof test in accordance with 46 CFR 178.340. Stability Letters for pontoon vessels are issued by the U.S. Coast Guard Marine Safety Center (MSC).

Inclining Experiment

All other vessels are required to undergo a full ***inclining experiment.*** This will normally require the owner to employ the services of a Naval Architect. This test is not covered in this handout as it is beyond the ability of most owners to conduct themselves. The Coast Guard Marine Inspector is only a witness to the experiment and all results must be submitted to the MSC for review. The results will be evaluated and, if satisfactory, the stability letter will be issued by the MSC.

Posting the Stability Letter

All pages of the stability letter are required to be posted aboard the vessel behind glass or clear plastic in the pilothouse.

Stability Tests - *(Continued)*

Conducting the Simplified Stability Test

A simplified stability test can normally be completed in a day, and is one of the last items to be completed prior to issuing a COI. All modifications to the vessel must have been completed and all required equipment and any fixed ballast must be aboard the vessel prior to starting the test.

This is a pass-fail test. You are encouraged to maximize the number of persons to be carried on the vessel, as well as test for the most stringent and/or flexible routes envisioned for the vessel's operation.

The following chart shows the steps of a simplified stability test. You are responsible for providing all necessary weights as well as the manpower to move the weights.

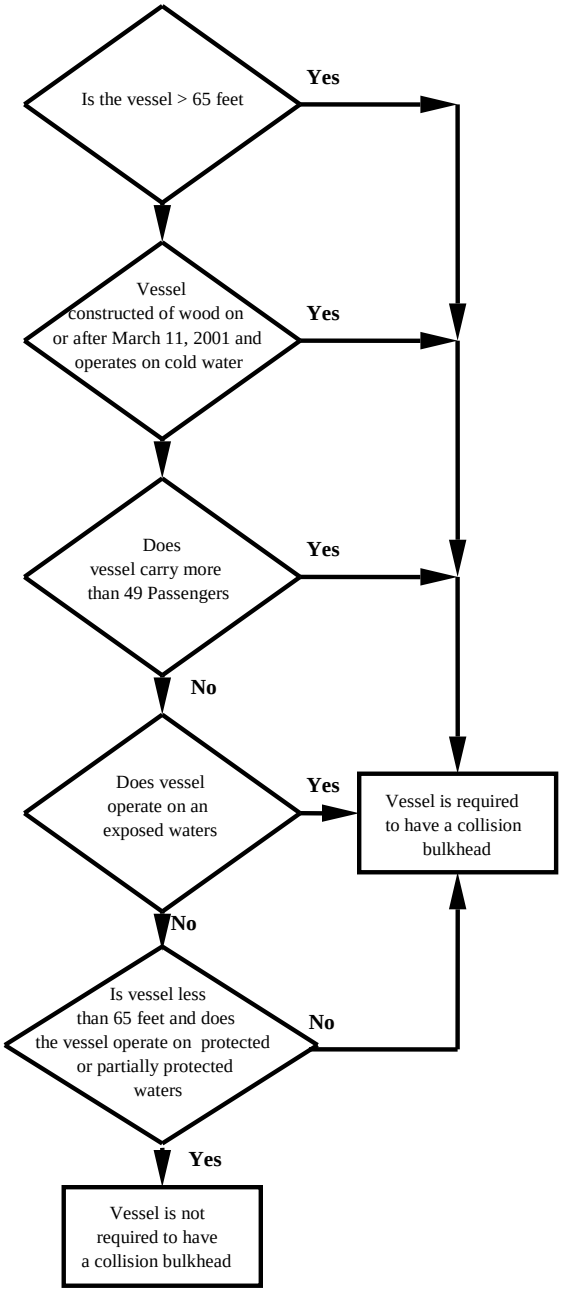
Step	
1	Prior to the Coast Guard Inspector's arrival • All fuel and water tanks must be approximately three quarters full. If tanks have cross connection valves these valves must be open. • The owner must have all weights used to simulate passengers at the vessel (e.g. sand bags or water barrels or other weights). A scale to prove weight must also be present. • Vessel mooring lines must slacked off so that they do not interfere with the vessels listing during the test.
2	On arrival the inspector will determine where the weights shall be distributed aboard the vessel so as to obtain the normal operating trim. • The total weight placed aboard the vessel will be determined by multiplying the number of persons the vessel will carry times the Assumed Average Weight Per Person as set by the Center for Disease Control and Prevention. Effective December 1, 2011, the AAWPP is 185 lbs. • All weights must be positioned so that the center of gravity of the weight is approximately 30 inches above the deck for seated passengers and 39 inches for standing passengers.
3	Once all weights are distributed the Inspector will take several measurements of the vessel and make a temporary mark on the hull. This mark is the maximum allowable immersion line. • The inspector will then calculate the maximum required heeling moment and advise the owner of how much weight must be moved and how far.
4	Once all weights have been moved the Inspector will examine the mark that was made on the hull. If the mark is not submerged the vessel has passed the stability test. If the mark is submerged the Inspector may do additional tests with less weight in an attempt to find where the vessel will pass.
5	Once satisfactory a stability letter will be issued by our office specifying the amount of persons allowed on board for each operational route.

Collision Bulkheads - *46 CFR 179.210 & 179.310*

General Requirements

A collision bulkhead is a watertight bulkhead installed at the forward part of the vessel to protect the vessel from flooding in case of damage to the bow.

To determine if the vessel is required to have a collision bulkhead use the chart below.



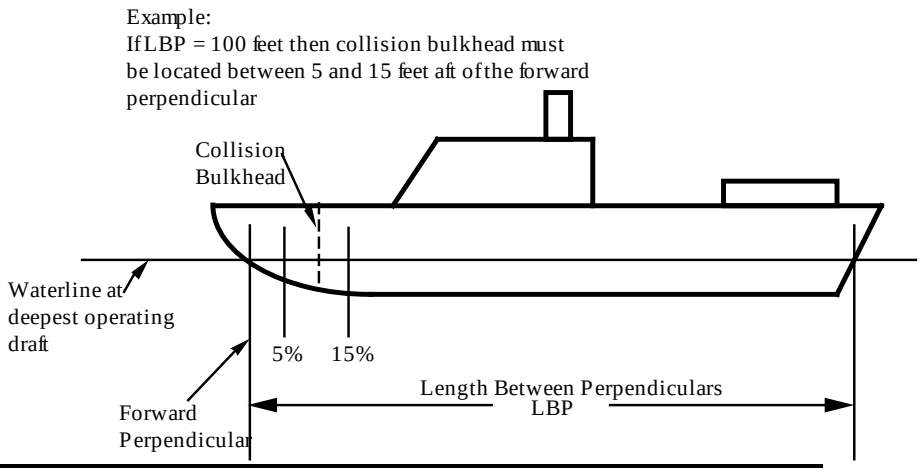
Note: See page A-10 for definitions of vessel routes.

Collision Bulkheads - *(Continued)*

Calculating the Location of the Collision Bulkhead

The location of the collision bulkhead is determined by first determining the Length Between Perpendiculars (LBP). LBP is the horizontal distance measured between perpendiculars taken at the forward most and after most points on the waterline corresponding to the deepest operating draft.

The collision bulkhead must be located between 5% and 15% of LBP as measured aft of the forward perpendicular.



Construction Requirements

The collision bulkhead must:

- Be installed in a single plane, with no recess or step, up to the bulkhead deck, and
- Must not be fitted with any type of penetration or opening except penetrations may be made if they are located as high and as far inboard as practicable and they have a means to be watertight and extend to the weather deck, may not have a watertight door in it.

If the vessel is not required to comply with one or two compartment standard of flooding, the vessel may have an opening sized such that:

- the lowest edge of the opening cannot be more than 12" down from the bulkhead deck, and
- there must be at least 36 inches of intact collision bulkhead below the lower edge of the opening.

Subdivision Bulkheads - *46 CFR 179.212 - 179.230 & 179.320(T) and 46 CFR 170-174*

General Requirements

In addition to a collision bulkhead, if the vessel carries more than 49 passengers the vessel must also have transverse watertight bulkheads that subdivide the vessel.

Transverse watertight bulkheads are placed at strategic locations throughout your vessel so that flooding is minimized should your vessel become damaged below the waterline.

A form called simplified subdivision is available from the Inspections Department. If the vessel requires subdivision bulkheads, you can work through this form with the marine inspector assigned to your project. This form will be very useful in determining the placement of bulkheads below the main deck.

Watertight Doors in Subdivision Bulkheads

The use of watertight doors in subdivision bulkheads is very restricted.

All watertight doors must be kept closed except when a person is passing through them.

A hinged watertight door must be fitted with a quick action-closing device operable from both sides of the door and have an indication light at the operating station (bridge) showing whether the door is open or closed.

Watertight doors are only allowed in subdivision bulkheads that separate a machinery space from an accommodation space, and only as allowed by the OCMI.

Hatches - *46 CFR 178.360*

General Requirements

All hatches exposed to the weather must be watertight, except the following hatches may be watertight:

- On a watertight trunk that extends a minimum of 12 inches above the weather deck
- On a cabin top
- Each hatch on a vessel that operates only on protected waters

Securing Devices and Keeper Chains

All hatch covers are required to:

- Have securing devices
- Be attached to the hatch frame or coaming by hinges, captive chains or other devices
- Operable from either side.

Watertight Definition

The term watertight means to effectively resist the passage of water when subjected to a hose test of 30 psi, with no leakage of water.

Weather tight Definition

Weather tight means that in any sea condition, water will not penetrate into the vessel in any appreciable amount.

The test for watertight consists of hose testing the hatch for several minutes, with no more than a slight seepage of water allowed.

Watertight Coamings - *46 CFR 179.360(d)*

General Requirements

Watertight coamings are required at the base of all weathertight doors located in a deckhouse or a companionway that give access into the hull, if it is located in:

- a cockpit
- a well
- an exposed location on a flush deck vessel.

If the door is a watertight door, the watertight coaming need only be sufficient to accommodate the door.

Height of the Coaming

The coaming height requirement is based on the vessel's route.

Route	Height of Coaming
Exposed or partially protected waters	6 inches
Protected waters	3 inches

Note: See page A-12 for definitions of vessel routes.

Hull Penetrations - *46 CFR 179.350*

General Requirements for Sea Valves

Except for engine exhausts, each inlet or discharge pipe that penetrates the hull of the vessel within six inches of the waterline and below your vessel's deepest operating draft, must have a positive action valve or cock that is located as close to the hull as possible.

This is required to prevent water from entering the vessel if the pipe fractures or otherwise fails.

The valve must be constructed of metal or equivalent material. Cast iron is not allowed because of brittleness. "Sea cocks" must be equipped with a positive means of locking the cock into the body; cotter pins may not be used to achieve this end. Valves, which use resilient seats, must meet the requirements above.

If the valve is inaccessible, then it must be operable from the weather deck or other accessible location about the bulkhead deck and labeled at the operating point for identity and direction of closing.

Drainage of Weather Decks - *46 CFR 178.410 - 178.450(T) 46 CFR 116.1110(K)*

General Requirements

The regulations identify 4 types of vessels:

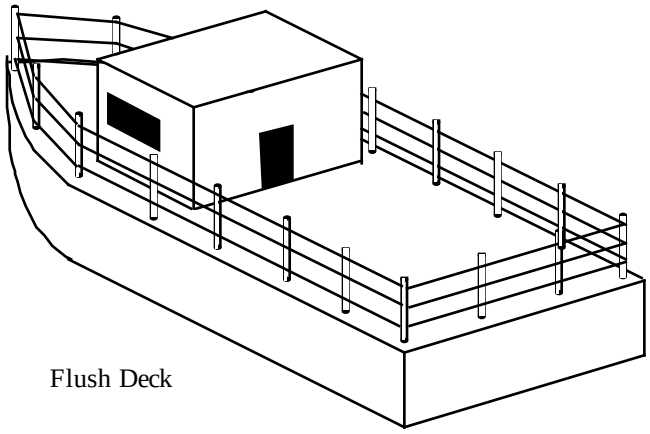
- Flush deck
- Cockpit deck
- Open boat
- Well deck

The regulations require that a vessel be provided with a means for rapidly clearing water from the decks. This is accomplished by the natural design of the vessel or the installation of freeing ports or scuppers.

A collection of even a small quantity of water can drastically affect a vessel's stability.

Drainage of a Flush Deck Boat

"Flush deck" means a continuous weather deck that is watertight and flush with the side shell of the hull.



Flush Deck

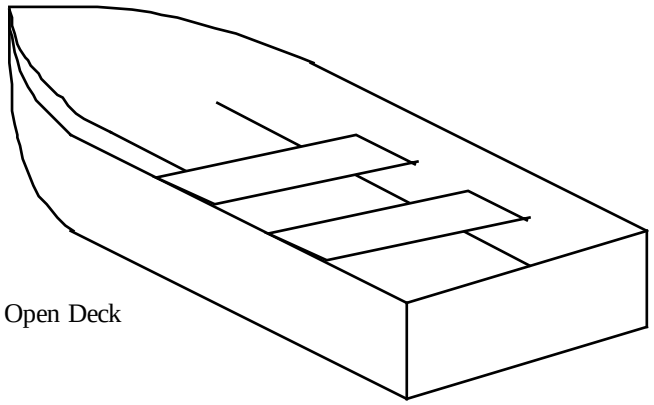
The weather deck must be watertight.

The forward 1/3rd may have solid bulwarks if there is sufficient sheer to ensure drainage of water aft and if bulwarks do not form a well on all sides to trap water.

Drainage of Weather Decks - *(Continued)*

Drainage of a Open Boat

"Open boat" means a vessel not protected from entry of water by means of a complete deck.



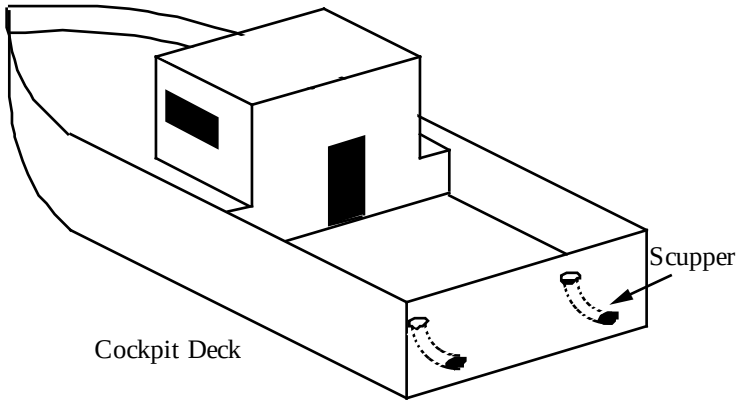
Open Deck

The deck within the hull of an open boat must drain to the bilge. Overboard drainage of the deck is not permitted.

Drainage of Weather Decks - *(Continued)*

Drainage of a Cockpit

"Cockpit" means an exposed recess in the weather deck extending no more than 1/2 of the length of the vessel measured over the weather deck.



The cockpit must be watertight, except that:

- there may be a watertight door with coaming
- there may be vent openings if:
  - The vessel operates on *"protected"* or *"partially protected" waters*, and
  - The openings are located as high as possible in the side of the cockpit, and
  - The height of the opening does not exceed 2".

The cockpit must be designed to be self-bailing.

Scuppers with a minimum area must be located in a cockpit to allow rapid clearing of water in all probable conditions of list and trim. Scuppers are drains located at the base of a cockpit.

The minimum scupper area is calculated based on the area of the cockpit, and will be done using the formula listed in 46 CFR 178.450.

Drainage of Weather Decks - *(Continued)*

Height of a Cockpit Deck

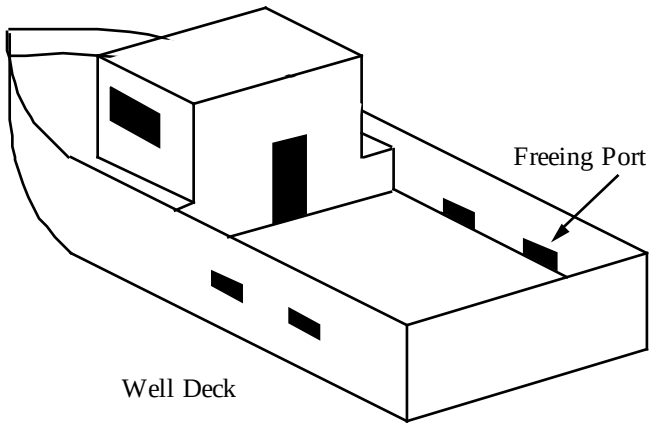
The cockpit deck of a vessel that operates on *"exposed"* or *"partially protected"* waters must be at least 10" above the deepest subdivision load line, unless the vessel complies with:

- Intact stability requirements (46 CFR 171.050)
- Type II subdivision requirements (46 CFR 171.070, 171.072 & 171.073) and
- Damage stability requirements (46 CFR 171.080)

For vessels that do not operate on *"exposed"* or *"partially protected"* waters, the cockpit deck must be located as high as practicable above the deepest subdivision load line.

Drainage of a Well Deck

"Well deck" means 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 1/2 or more of the length of the vessel over the weather deck.



Each deck must be watertight.

The bulwarks that form a well must be provided with **freeing ports** and will be determined by using the formula listed in 46 CFR 178.450.

SECTION G

MISCELLANEOUS REQUIREMENTS

Bilge & Bilge Level Alarm Systems - *46 CFR 182.500 - 182.540(T) 46 CFR 119.500-540 & 46 CFR 56.50(K)*

Introduction

If the vessel is at least 26 feet in length it must be fitted with individual bilge suction lines and suctions for each watertight compartment.

The space forward of the collision bulkhead need not be fitted with a bilge suction line, if a hand operated bilge pump or other equipment can be used to remove water and if the equipment is provided aboard the vessel.

Bilge Piping

The vessel's bilge piping sizes must be as follows:

- Vessel $\leq$ 65 feet
  - not less than 1 inch.

- Vessel > 65 feet
  - not less than 1 1/2 inches.

Except when individual bilge pumps are provided for separate spaces, the vessel's individual bilge suction lines must be led to a central control point or manifold and provided with a stop valve at the control point or manifold and a check valve.

Piping material must meet the requirements of 182.710(*T*) or 119.710(*K*).

Bilge Suctions

Bilge suctions shall be fitted with suitable strainers having an area of not less than 3 times the bilge pipe diameter.

Bilge & Bilge Level Alarm Systems - *(Continued)*

Submersible Electric Bilge Pumps

Submersible electric bilge pumps may be used on vessels, other than ferries, that are ≤ 65 feet in length and carry less than 49 passengers:

The pump :

- Is UL approved, (or approved by another independent laboratory acceptable to the OCMI);
- Services only one watertight compartment;
- Is permanently mounted; and,
- Is equipped with a strainer that can be readily inspected and cleaned.

Individual power pumps used for separate spaces must be:

- Controlled from a central control point and
- Have a light or other visual means at the control point to indicate operation.

Flexible tube or hose may be used instead of fixed piping for the pump discharge line under the following conditions:

The line must:

- Be suitably supported,
- Not penetrate a watertight bulkhead,
- Be of good quality and suitable for the intended use; and, be highly resistant to salt water, petroleum oil, heat and vibration.

Hull penetrations must be:

- Placed as high above the waterline as possible, and
- Fitted with a sea valve at the hull penetration if within 6" of the vessel's deepest draft. Valve must:
  - Be of equivalent or greater strength as the hull material, and
  - Not be constructed out of cast iron.

Bilge & Bilge Level Alarm Systems - *(Continued)*

Bilge Pumps for Fixed Bilge Systems

The vessel must be provided with bilge pumps in accordance with the table below.

Number of Passengers	Length of Vessel	Bilge pumps required	Min. Capacity Required (Gal. per minute)
Any number	Over 65'	2 fixed power	50 GPM
More than 49 passengers and all ferry vessels	65' and less	1 fixed power and 1 portable hand	25 GPM 5 GPM
Carrying 49 or less passengers other than ferry vessels	26' up to 65'	1 fixed power and 1 portable hand or:	10 GPM 5 GPM
		1 fixed hand and 1 portable hand	10 GPM 5 GPM
	Less than 26'	1 portable hand	5 GPM

The vessel's fixed power bilge pump(s):

- Must be self-priming;
- May be driven off the main engine or other source of power.
- Must be permanently connected to the bilge manifold and may connect to the fire main. (If of sufficient capacity, a power bilge pump may also serve as a fire pump).

If the vessel has two fixed power bilge pumps installed, they must be driven by different sources of power. If the main engine drives one pump, the other must be driven by another source of power, such as batteries. If a twin-engine vessel, each pump may be driven off of a different engine.

Bilge & Bilge Level Alarm Systems - *(Continued)*

Hand Operated Bilge Pumps

If the vessel has a Hand Operated Bilge Pump is must be:

- Capable of pumping the minimum quantity of water as listed in the chart on page G-3.
- Capable of pumping water from the bilge overboard, but not necessarily from all watertight compartments at the same time.
- Provided with suitable suction and discharge hose capable of reaching the bilges of each watertight compartment and pumping the water over the side.

Note: A second power pump is an acceptable alternative to a hand pump, if it is supplied by a source of power independent of the first power bilge pump.

Bilge High Level Alarms

If the vessel is 26 feet or more in length, you are required to have a Bilge High Level Alarm that indicates a visible and audible alarm at the vessel's operating station, in each of the following unmanned spaces.

- A space with a thru hull fitting below the deepest load waterline,
- A machinery space bilge, bilge well or other spaces subject to flooding from seawater piping within the space; and,
- Spaces with a non-watertight closure, such as a space with a non-watertight hatch on the main deck.

Note: The sensor shall be located near the centerline of the vessel as close as possible to the lowest point of the bilge.

If the vessel is constructed of wood it must have bilge high-level alarms in each watertight space in addition to those required above.

Automatic Bilge Pump Indicator

You must provide a visual indicator at the vessel's operating station to indicate when any automatic bilge pump is operating.

Diesel Fuel System Requirements - *46 CFR 182.435 - 182.480 & 182.720(T) and 46 CFR 119.435-470 and 46 CFR 119.700-730(K)*

Integral Fuel Tank Construction

If the vessel's fuel tanks integral to the hull, the vessel's hull material must be either:

- Steel
- Aluminum; or
- FRP Note: (Sandwiched construction cannot be used, unless the core material used is closed cell polyvinyl chloride.)

Independent Fuel Tank Construction

If the vessel has independent fuel tanks, they must be constructed of either:

- Nickel-copper;
- Copper-nickel;
- Copper;
- Copper-silicon;
- Steel;
- Iron;
- Aluminum; or,
- FRP

Table 182.440(a)(1) and Table 119.440(a)(1) list thickness and construction requirements based on fuel tank capacity.

If the vessel is constructed with metal tanks, they must have baffles at least every 30 inches and the baffles must be either welded or brazed to the side of the tank. Baffles must have air holes at the top and limber holes at the bottom.

Diesel Fuel System Requirements - *(Continued)*

Fuel Tank Fill Piping

The vessel's fuel tank fill and sounding piping must be a minimum of 1.5 inches in diameter.

The vessel must have a means of determining the amount of fuel either by sounding through a separate sounding tube, fill pipe, or by a marine type fuel gage.

The fuel piping must run as directly as possible, preferably in a straight line, from the deck connection to the top of the tank. The piping must be so arranged that any overflow of fuel will not run into the vessel.

If Flexible hose is used it must:

- Be suitable for the intended service;
- Overlap the metallic pipe ends at the least 1.5 times the pipe diameter and must be secured at each end by double hose clamps; and,
- If a non conductor, be provided with a method to make the fuel tank electrically continuous with the fill pipe.

Fuel Supply Piping

The vessel's fuel supply piping shall be constructed of:

- Copper, nickel copper, or copper nickel, having a minimum wall thickness of 0.035 inches; or,
- A material such as seamless steel pipe or tubing which provides an equivalent level of safety; or,
- Schedule 80 or greater aluminum piping, **if**, you have an aluminum vessel.

Fuel lines shall be accessible, protected from mechanical damage, and secured against excessive movement and vibration by the use of metal straps with no sharp edges.

Where fuel lines pass through watertight bulkheads, they shall be protected by close fitting ferrules or stuffing boxes.

Diesel Fuel System Requirements - *(Continued)*

Fuel Supply Hose as Supply Line

You may use flexible hose as a supply line provided it is fitted with suitable connection fittings and meets the requirements of 46 CFR 56.60-25

Flexible hose runs shall be visible, easily accessible, protected from mechanical damage, and shall not penetrate watertight bulkheads.

Flexible non-metallic hose may be used for fuel supply only if the hose meets SAE standard J-1942 "Hose and Hose Assemblies for Marine Applications", or is specifically approved by the Commandant. The hose must either be factory assembled requiring no further adjustment of the hose fittings, or, the hose fittings must meet SAE J-1475 or its equivalent. If special equipment is required such as crimping machines, the machines must be of the type and design specified by the manufacturer.

Flexible Hose at the Engine

Flexible hose (less than 30” in length) or a loop of tubing for the fuel supply line must be used at or near the engine to protect the line from vibration.

The hose must meet the requirements as listed above or be USCG approved type A1, A2, B1 or B2. The line must be attached using double hose clamps on each end, unless using an approved fitting.

Fuel Shutoff Valves

The fuel shutoff valves shall be installed on the fuel supply piping at the fuel tank and engine.

The fuel shut off valve at the tank must be accessible from outside the fuel tank space, preferably on your vessel’s weather deck. The location is required to be labeled with 1"-high letters, indicating the purpose of the valve and direction of operation.. If reach rods are installed in the weather deck, some form of flame impingement protection for the handle must be installed.

Diesel Fuel System Requirements - *(Continued)*

Fuel Strainers

Suitable marine type strainers shall be fitted in the fuel supply line within the vessel's engine compartment.

Drip pans fitted with flame screens are required under each fuel strainers other than those mounted on the engine.

Fuel Tank Vents

The fuel tanks shall be fitted with a vent pipe at its highest point under normal operating conditions.

The minimum net cross-sectional area of the vent pipe shall be as follows:

- Not less than 5/8" O.D. tubing (.035" wall thickness-20 gage), **if** the fill pipe terminates at the top of the tank.
- Not less than 3/4" O.D. tubing (.035" wall thickness-20 gage), **if** the fill pipe extends into the tank.

The discharge end must be fitted with a removable flame screen of corrosion resistant wire of 30 X 30 mesh and be located:

- On the exterior of the vessel's hull, as high as practicable above the waterline and away from any hull opening, **or**
- Terminates in U-bends as high above the weather deck as practicable and away from any living quarters or below deck spaces.
- And, so installed as to prevent water contamination during normal operating conditions.

Gasoline Fuel System Requirements - *46 CFR 182.435 - 182.480 & 182.720(e)*

Note

Gasoline propelled vessels can be certified for carrying passengers. Although fundamentally similar to diesel fuel system requirements, gasoline systems pose an increased flammability risk and are therefore required to meet more stringent regulations.

Included among these is the requirement to install a fixed fire extinguishing system in the machinery space, a vapor detection system, forced ventilation for the engine space, as well as differences in the fuel system.

If certifying a gasoline-propelled vessel, the inspector assigned to you will assist with the additional requirements in the Code of Federal Regulations.

Ventilation System Requirements - *46 CFR 182.465 & .470(T) and 46 CFR 119.465 & .470(K)*

Compartments Containing Machinery

Vessel spaces containing machinery shall be fitted with at least two ducts to furnish natural or mechanical supply and exhaust ventilation.

One duct shall extend to a point near the bottom of the compartment so that the ordinary collection of water in the bilge will not trap the duct.

Where forced ventilation is installed, the duct extending near the bottom shall be the exhaust.

The total inlet and outlet area of each duct shall be not less than one square inch for each foot of beam of the vessel. This minimum shall be increased if the ducts are also used to provide air for the vessel's engine intakes.

Ventilation System Requirements – *(Continued)*

Ducting Material

All duct material shall be of rigid permanent construction and made of the same material as the vessel's hull or of a non-combustible material and must be reasonably gas-tight.

The ducts must lead as directly as possible and be securely fastened and supported.

Commercial grade dryer ducting is not acceptable.

Duct Cowls

All the supply ducts for ventilation shall be provided with cowls or scoops having a free area not less than twice the required duct area.

If the mouth of the duct is screened the area must be increased to compensate for the area of the screen.

Closure Devices

Provisions must made for closing all supply duct cowls or scoops and exhaust duct discharge openings for spaces protected by a fixed gas extinguishing system. All closure devices must be readily available and mounted in the vicinity of the vent. Dampers may not be fitted in a supply duct.

Compartments Containing Diesel Fuel Tanks

Unless provided with ventilation as stated above, enclosed compartments containing diesel fuel tanks and no machinery shall be provided with a goose neck vent of not less than 2 1/2 inches in diameter. Openings shall not be located adjacent to possible sources of vapor ignition.

In small compartments, a vent of not less than 1 1/2 inches may be used. Compartments that are adequately ventilated are not required to have gooseneck vents installed.

Ventilation requirements for Gasoline engines

Due to the increased explosion risk of gasoline, the requirements for ventilation are more complicated and 46 CFR 182.460 shall be followed.

Marine Sanitation Devices - *46 CFR 184.704 & 33 CFR 159.7*

General Requirements

Vessels are not required by regulation to have a toilet or Marine Sanitation Device (MSD). However, if a toilet is installed, a MSD must be installed as follows:

MSD's are classified as a Type I, II, or III. Type I and II treat the sewage so that it can be pumped overboard. Type III MSD's (the most common type) are holding tanks and can only be pumped ashore.

Vessels less than 65 feet are allowed to use a Type I, II or III MSD, all other vessels are required to use a Type II or III.

MSDs must have a Coast Guard certified label and be certified for inspected vessels.

MSD Piping

Type I and II MSD's can be piped for discharge of sewage overboard. Note that state and local laws may have "No Discharge Zones" in which no sewage may be pumped overboard. Operators should check with state and local authorities as to the laws in their area of operation.

Federal Regulations do not allow the pumping of untreated sewage overboard on inland waters.

If the vessel is equipped with a Type II MSD, it must be plumbed to a pump-out connection on the deck.

If the vessel is fitted with a Y-valve in the system, it must be lock it in the closed position, preventing discharge over the side.

Placard Required

Operators on Ocean or Coastwise routes greater than 3 miles from shore shall install a placard at the Y-valve that states; "This valve to remain locked in the closed position when within 3 miles of the mainland shore or upon the Great Lakes."

Steering System Requirements - *46 CFR 182.600 - .620(T) and 46 CFR 119.600, 46 CFR 58.25 and 46 CFR 110-111(K)*

Main Steering

A self propelled vessel must be provided with a main steering gear that is:

- Of adequate strength and capable of steering the vessel at all speeds;
- Designed to operate at maximum astern speed without being damaged or jammed and,
- Capable of moving the rudder from 35 degrees on one side to 30 degrees on the other side in not more than 28 seconds with the vessel moving ahead at maximum service speed.

Auxiliary Steering

The vessel's steering must be designed so that transfer from the main steering gear or control, to the vessel's auxiliary steering, can be rapidly achieved. The vessel is required to have any tools or equipment necessary to make the transfer readily available.

The following vessels **are not** required to have auxiliary steering:

- Main steering gear and controls provided in duplicate.
- Multiple screw propulsion vessels with pilothouse control for each screw.
- No regular rudder is fitted and steering action is obtained by a change of setting of the propelling unit.
- Normal means of steering is a hand tiller and rudder.

Railing Requirements - *46 CFR 177.900(T) and 46 CFR 116.900(K)*

General Requirements

Rails or equivalent protection are required on the vessel near the periphery of all weather decks accessible to passengers or crew. Equivalent protection may include lifelines, wire rope, chains and bulwarks, which provide strength and support equivalent to fixed rails.

Deck rails must withstand a 200-pound load in any direction and a 50-pound per foot load applied to the top rail in any direction.

Ferry or Excursion Type Operations

Vessels engaged in ferry or excursion type operations including but not limited to sightseeing trips, dinner and party cruises, and overnight cruises, shall have rails a minimum of 39 1/2 inches high.

On these types of vessels the space below the upper rail is required to be fitted with either:

- Bulwarks, or
- Chain link fencing or wire mesh that has openings of not more than 4 inches in diameter, or
- Bars, slats, rail courses, and equivalent spaced at intervals of not more than 4 inches.

Sport Fishing Vessels

If you operate a sport fishing vessel and can show that higher rails would interfere with normal operations, the OCMI may authorize your rails to be lowered to not less than 30 inches.

Courses must not be more than 12 inches.

When the vessel is not being used in this capacity, the vessel must comply with the applicable railing requirement.

Railing Requirements - *(Continued)*

Water Taxies, Pilot Boats, Dive Boats

If the principle business of your vessel requires the discharge of personnel in a seaway, the OCMI may accept alternatives for those areas of a deck where passengers or cargo are discharged and for which removable rails, lifelines, or chains would hinder passenger or cargo discharge operations.

All Other Vessels

All other vessels not mentioned above shall have a minimum rail height of 36 inches.

Courses must not be more than 15 inches.

Sailing vessels, small vessels of the open launch type, and other vessels not specifically covered elsewhere, shall have rails or equivalent protection as considered necessary by the OCMI.

SECTION H

OPERATIONS

Marine Casualties and Investigations-*46 CFR 4*

What is a marine casualty?

Any casualty or accident involving any vessel other than a public vessel. The casualty occurs upon the navigable waters of the United States. This includes any accidental grounding, or occurrence involving a vessel which results in damage by or to the vessel, gear, or loss of life of any person. It includes collisions, strandings, groundings, heavy weather damage, fires, explosions, **failure of gear and equipment**, and any other damage which might affect or impair seaworthiness of the vessel, and injury or loss of life to any person while diving from a vessel using underwater breathing apparatus.

Reporting Procedures

Marine casualties are required to be reported to the local Coast Guard by the owner, agent, master, operator, or person in charge. There are two types of reports required: **IMMEDIATE** and **WRITTEN**.

Immediate Report

An **IMMEDIATE** report to the nearest Coast Guard Marine Safety Unit, Marine Inspection office or Coast Guard Sector is required after addressing the resultant safety concerns. **IMMEDIATE** reports are required for the following casualties:

- Unintended grounding, or unintended strike of (allision with) a bridge;
- An intended grounding or bridge allision causing a hazard to either navigation, the environment, or the safety of a vessel;
- A loss of main propulsion or steering;
- A loss of life;
- Injuries requiring professional medical treatment (treatment beyond first aid), and for crewmembers aboard commercial vessels, any injury rendering the individual unfit to perform their duties;
- Any occurrence causing damage in excess of $25,000 (to include the cost of labor and material required to restore the property to its condition before the occurrence).

Marine Casualties and Investigations - *(Continued)*

Written Reports

WRITTEN reports are required. In addition to the immediate notification, a WRITTEN report is required to be filed by owner, agent, master, operator, or person in charge within five days of the incident. This WRITTEN report must be delivered to Coast Guard Marine Safety Office or Marine Inspections Office. It must be provided on a Form CG-2692 (Report of Marine Accident, Injury or Death), supplemented as necessary by appended Forms CG-2692A (Barge Addendum) and CG-2692B (Report of Required Chemical Drug and Alcohol Testing Following a Serious Marine Incident).

Serious Marine Incident

The term **SERIOUS MARINE INCIDENT** includes the following events involving a vessel in commercial service: Any marine casualty or accident required to be reported to the Coast guard 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. In the case of crewmembers aboard vessels in commercial service, any injury which renders the individual unfit to perform their routine duties;
- Damage to property in excess of $100,000 (to include the cost of labor and material required to restore the property to its condition before the occurrence);
- Actual or constructive loss of any vessel subject to inspection (as defined in 46 USC 3301)

Drug and Alcohol Testing

SERIOUS MARINE INCIDENTS require drug and alcohol testing.

For each marine casualty requiring a report, the marine employer shall determine whether there is evidence of alcohol or drug use by individuals directly involved in the casualty. It is the responsibility of the marine employer to file a written report (46 CFR 4.05-12) which:

- Identifies the individuals for whom evidence of drug or alcohol use has been obtained;
  - Specifies the method used to obtain such evidence, such as personal observation of the individual, or by chemical testing of the individual.

As discussed earlier, a Form CG-2692B (Report of Required Chemical Drug and Alcohol Testing Following a Serious Marine Incident).

Crew Requirements - 46 CFR 185.402(T) - 122.402(K)

Licenses

Each licensed individual employed upon the vessel shall have his or her original license on board and available for examination at all times when the vessel is underway.

Crew Training

The owner, master, or operator of your vessel shall instruct each crewmember on their responsibilities, upon first being employed and prior to getting underway for the first time. Additional training shall be conducted once a month if practicable, but is mandatory once in every three months on that member's responsibilities as listed on the emergency instruction placard (Firefighting, Man Overboard, and Abandon Ship) or the vessel station bill (vessel greater than 65 feet). Senior Deckhands shall be trained in accordance with Coast Guard NVIC 1-91, which is available on the internet at http://www.uscg.mil/hq/g-m/nvic/ or from this office.

- Each drill must be conducted as if it were an actual emergency and be as detailed as possible.
- All training and drills must be logged or documented and available for review upon request.
- Training entries shall include the date of training and a general description of the drill and training.
- We recommend that all training log entries be in red ink or highlighted to speed up the review process.
- The above frequency is the minimum required. However, the master shall conduct more drills as necessary to ensure the crew possesses adequate knowledge to respond to and combat any emergency.
- While not specifically required, it is further recommended that flooding drills be conducted to ensure crew is familiar with your vessel's de-watering system.

Passenger Safety Requirements - *46 CFR 185.502(T) - 122.502(K)*

Passenger Count

The master of your vessel shall keep a correct, written count of all passengers that embark on your vessel. Prior to departing on a voyage, the exact passenger count (not ticket sales) must also be available ashore at your vessel's normal berthing location.

Passenger Safety Orientation

Prior to getting underway, or shortly thereafter, the master of your vessel shall ensure that a suitable public announcement is made informing your passengers of the following:

- Location of all emergency exits;
  Stowage locations of life jackets and life ring buoys;
- Proper method of donning the life jackets; and,
- Location of instruction placards for lifejackets and other life saving devices.

Navigation Underway - *46 CFR 185.304(T) - 122.304(K)*

Master's Attention

The movement of vessel shall be under the direction & control of the master or a licensed mate at all times. The master shall operate the vessel keeping the safety of passengers & crew foremost in mind by directing the vessel in order to prevent a casualty. Giving special attention to:

- Currents
- Tidal state;
- **Prevailing & forecasted visibility & environmental conditions, including wind & waves;**
- Density of marine traffic;
- Potential damage caused by own wake;
- The danger of each closing visual or radar contact;
- Vessel's handling characteristics; and
- Magnetic variation and deviation errors of the compass.

Masters of vessels **not greater** than 65 ft (19.8 m) in length **must have** means available, satisfactory to the Officer in Charge, Marine Inspection (OCMI), to obtain or monitor the **latest marine broadcast** in order to comply with the requirements of paragraph (a) of this section.

Required Documentation

Required Documents

The following is a list of the required documents, instructions, placards, and licenses that are required to be onboard the vessel, conspicuously displayed at all times, and available to passengers and the Coast Guard for inspection:

- Certificate of Inspection.
- Vessel Stability Letter.
- U.S. Coast Guard Small Passenger Vessel Decal.
- Lifejacket Donning Instructions.
- Emergency Procedures.
- Station Bill (if greater than 65'in length or carries 5 or more crewmembers).
- Emergency Broadcast Instructions (located adjacent to the radio).
- Oil Discharge Placard (located by bilge pump controller).
- Garbage Discharge Placard.
- Instructions to activate the installed fire suppression system.

The following items shall be onboard the vessel and made available to the U.S. Coast Guard upon request.

- Certificate of Documentation (if > than 5 net tons).
- Vessel Log.
- FCC Radio Operators License and FCC Station Licenses (if applicable)
- Senior Deck Hand Designation Letter (if applicable).
- Crew Training Documentation (if not in vessel log).

Notification of Repairs & Alterations - *46 CFR 176.700 - 182.480 & 182.700*

Repairs and Alterations

Repairs to the vessel's hull, machinery, or equipment that affects the seaworthiness of your vessel, must not be undertaken without the approval of the St. Louis OCMI (The OCMI's representatives are the Marine Inspectors). If emergency repairs are required, the operator must notify the Sector Upper Mississippi River, Domestic Vessels Inspection Branch as soon as practicable. Repairs that effect the seaworthiness of the vessel include, but are not limited to:

- Replacement, repair, or refastening of deck or hull plating, planking or structural members;
- Repair of cracks in deck frames or deck plates;
- Repair or replacement of electrical wiring;
- Repair or replacement of fuel lines or fuel tanks;
- Repair or replacement of boilers or other pressure vessels;
- Repair or replacement of steering system;
- Repair or replacement of propulsion system;
- Repair or replacement of power supply system;
- Repairs that affect vessel stability;
- Repairs or alterations to the vessel's lifesaving equipment;
- Repairs or alterations to the vessel's fire detection or fire suppression systems; and,
- Repairs that affect the vessel's de-watering capability.

If the above repairs are not considered emergency repairs, then plan submittal and review will be required before any repairs or alterations are started. Upon completed of repairs, inspection by this office may be required prior to the vessel being placed back in service.

Pollution Response

Introduction

The primary pollution response laws enforced by the U.S. Coast Guard on the Inland Rivers are the:

- Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA)
- Federal Water Pollution Control Act (FWPCA)
- Clean Water Act (CWA)
- Oil Pollution Act of 1990 (OPA 90)

Federal Water Pollution Control Act (FWPCA)

This is the Coast Guard's basic authority for investigating maritime oil pollution discharges into or upon U.S. navigable waters.

Clean Water Act (CWA)

The CWA amended the FWPCA, giving the Coast Guard Further pollution authority and was designed to eliminate all water pollution by the 1990's.

Oil Pollution Act of 1990 (OPA)

The Oil Pollution Act of 1990 (OPA) amends the FWPCA/ CWA. It provides:

- A $1 billion oil spill cleanup fund
- Increased authority to direct and control oil spill cleanups
- Increase Coast Guard responsibilities for developing contingency plans
- Increased spiller's liabilities

Comprehensive Environmental Response Compensation Liability Act (CERCLA)

This act is more comprehensive than the FWPCA and should
be used for response to all hazardous substance releases.

Note: CERCLA does not apply to oil spills.

Pollution Reporting Requirements

Introduction

The following is the Who, When, What, Where, How, and Why for reporting a pollution discharge/release.

Who

Anyone may report a discharge/release.

The owner, operator, or person in charge of the facility or vessel must make a report.

Note: The report must be made to the National Response Center (NRC) at **1-800-424-8802**. In addition, the local Coast Guard unit and State/Local agencies should be notified of the discharge/release.

When

The report must be made as soon as there is knowledge of the incident.

What, Where, How, and Why

The report needs to include the following:

- What was discharge/released?
- Where did the discharge/release take place?
- How much was discharged/released.
- Is the source of the discharge/release secured?
- What action is being done to contain the discharge/release?
- What was the cause of the discharge/release?

Use of Dispersants

Introduction

Often dispersants are improperly used. Members of the marine community often ask, "Why can't I use a detergent (e.g. Dawn or Joy) to clean spilled oil from the water?" Detergent does not remove the oil, it only causes it to settle to the bottom of the waterway and disperses the visual sheen.

Regulation

The proper use of dispersants is covered in Title 33, Code of Federal Regulations, Part 153, Section 305: Methods and Procedures for the Removal of Discharged Oil.

Max penalty for violating 33 CFR 153.305.

- $40,000 per violation

Proper Use of Dispersants

Although dispersants have an important role in pollution response, their use needs to be approved by the Federal On Scene Coordinator (Coast Guard or Federal EPA) in accordance with the National Contingency Plan.

Proper Response Actions

The best response to an oil spill on water is to secure the source of the spill, use containment boom, apply sorbent pads, and notify the local Coast Guard and the National Response Center (1-800-424-8802), as soon as possible.

In general, the use of dish soap as a dispersant is not authorized.

Penalties

Introduction

Upon completion of a pollution investigation the Coast Guard has several options to pursue Administrative, Civil, or Crimina violations against the Responsible Party.

Administrative Penalty Options

1. Letter of Warning
2. Notice of Violation (Ticket)
   - $110 - $15,000
3. Report of Violation
   - Class I ($15,000 per violation)
   - Class II ($15,000 per day the violation continues)

Civil and Criminal Options

1. Report of Violation
   - $40,000 per day of violation or;
   - $1,100 per barrel of oil discharged

2. Establish if the violation was the result of Gross Negligence or Willful Misconduct.

3. Including but not limited to intentional discharge.
   - Not less than $130,000 or;
   - Not more than $4,000 per barrel of oil spilled or;
   - 5 years imprisonment

Additional Penalties

1. Failure to provide notification of a discharge.
   - $40,000 per violation or;
   - 5 years imprisonment or;
   - Both

2. Failure to properly carry out removal of the discharge.
   - $40,000 per violation or;
   - An amount up to 3 times the costs incurred by the Coa Guard to conduct the cleanup

SECTION I

ADDITIONAL RESOURCES

Useful Web Site

U.S. COAST GUARD SECTOR UPPER MISSISSIPPI RIVER (UMR)
PREVENTION DEPARTMENT
http://www.uscg.mil/d8/sectUMR/Prevention/inspections.asp
This site has several resources which have been designed to assist the Small Passenger Vessel Owner/Operator and are available for download.

U.S. COAST GUARD MARINE SAFETY CENTER
http://homeport.uscg.mil/mycg/portal/ep/channelView.do?channelId=-24502&channelPage=%2Fep%2Fchannel%2Fdefault.jsp

U.S. COAST GUARD HEADQUARTERS
DIRECTOR OF PREVETION POLICY (CG-54)
http://www.uscg.mil/hq/cg5/cg54/

CODE OF FEDERAL REGULATIONS
http://www.gpoaccess.gov/cfr/index.html

FCC FORMS
www.fcc.gov/formpage.html

PASSENGER VESSEL ASSOCIATION
www.passengervessel.com

AMERICAN BOAT AND YACHT COUNCIL
http://abyc.com/

AMERICAN BUREAU OF SHIPPING
www.eagle.org

Marine Employer Drug and Alcohol Testing Program

Summary

All crew members on US Coast Guard certificated vessels are required to be enrolled in a drug testing program.

The Coast Guard has developed a guide titled, “Marine Employers Drug Testing Guidance” which explains in detail how to comply with drug and alcohol testing regulations. This guide is available for down load on the Sector UMR Prevention Department web site (listed above).

Resources for Preparing for an Inspection

Summary

The Coast Guard has developed several guides to assist small passenger vessel operators including:

- A sample Logbook Form
- Preparing for Small Passenger Vessel Dry-dock Exams
- Topside Inspection Pamphlet
- Hull Inspections
- PVA Risk Guide
- Top 10 Small Passenger Vessel Deficiencies

These guides, along with an electronic version of this guide, are located on the Sector UMR, Prevention Department web site listed on page I-1.

In addition, copies of the checklist (form CG-840) used by the Marine Inspector during a small passenger vessel inspection are available for vessel owners and operators. If you would like a copy, contact the Sector UMR, Domestic Vessel Inspections Branch at (314) 269-2686.

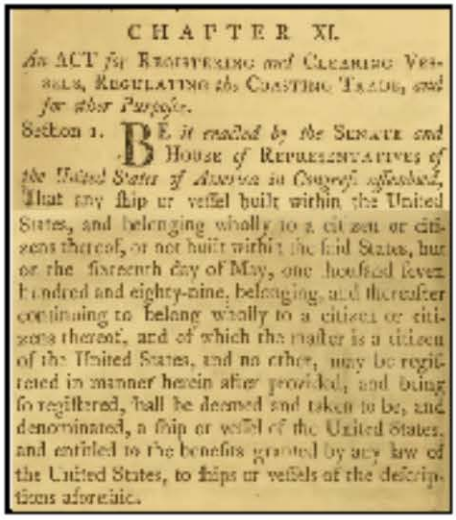
Small Passenger Vessel Information Guide Updates

You are encouraged to provide feedback concerning the use of this guide. Suggestions for improvements, corrections, or any other constructive feedback may be provided to the Sector UMR, Domestic Vessel Inspections Branch Chief at (314) 269-2686. Thank you in advance for your suggestions which will be reviewed for inclusion in the next revision of this guide.

Documentation and Tonnage of Smaller Commercial Vessels

U.S. Department of Homeland Security
United States Coast Guard

This informational brochure provides an overview of federal documentation and tonnage measurement requirements for owners of U.S. commercial vessels less than 79 feet in overall length. If you own such a vessel, certain restrictions on its commercial use may apply depending on a number of factors, including the nature of its commercial activities, the vessel's net tonnage, and whether the vessel was U.S. built.



CHAPTER XI.

An ACT for Registering and Clearing Vessels, Regulating the Coasting Trade, and for other Purposes.

Section 1. BE it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That any ship or vessel built within the United States, and belonging wholly to a citizen or citizens thereof, or not built within the said States, but on the fifteenth day of May, one hundred seven hundred and eighty-nine, belonging, and thereafter continuing to belong wholly to a citizen or citizens thereof, and of which the master is a citizen of the United States, and no other, may be registered in manner herein after provided, and being so registered, shall be deemed and taken to be, and denominated, a ship or vessel of the United States, and entitled to the benefits granted by any law of the United States, to ships or vessels of the descriptions aforesaid.

Vessel Documentation

What is vessel documentation?

Vessel documentation is a national form of vessel registration, evidenced by a Certificate of Documentation (COD) issued by the Coast Guard's National Vessel Documentation Center (NVDC). It is one of the oldest functions of the federal government, dating back to the 11th Act of the First Congress of September 1, 1789. Documentation provides evidence of nationality for international purposes, facilitates commerce between the states, and admits vessels to certain restricted trades, such as coastwise trade and the fisheries. Since 1920, vessel financing has been enhanced through the availability of preferred mortgages on documented vessels.

Exclusive Economic Zone

The Exclusive Economic Zone (EEZ) is the zone where the United States has jurisdiction over natural resources. The EEZ extends no more than 200 nautical miles from the territorial sea baseline of the United States. Shaded areas represent different regions of the EEZ. (NOAA Ocean Facts)

Must my commercial vessel be documented?

This depends on both the nature of the commercial activities in which your vessel engages and its net tonnage. Vessels which engage in either **coastwise trade**, or **the fisheries** on navigable waters of the United States or in the Exclusive Economic Zone (EEZ), must be documented, subject to certain exclusion or exemption provisions. Vessels of less than five net tons are excluded from documentation. Those vessels measuring five net tons or more that do not operate in either the coastwise trade or the fisheries on the navigable waters of the United States or in the fisheries in the EEZ, are exempt from documentation. Also exempt from documentation are coastwise qualified, non-self-propelled vessels used in coastwise trade within a harbor, on the rivers or lakes (except the Great Lakes) of the United States or the internal waters or canal of any state. The Coast Guard, through the NVDC, administers the documentation laws of the United States.

What is meant by coastwise trade?

Coastwise trade is generally defined as the transportation of merchandise or passengers between points in the United States, its territorial sea, or the EEZ. This includes carriage of passengers, including charter fishing parties, entirely within our territorial waters even if they debark at the point of embarkation, as well as towing, dredging, and salvage activities within these waters. Customs and Border Protection (CBP) administers the coastwise trade laws of the United States.

Vessel Documentation (continued)

What is meant by the fisheries?

In general, the fisheries include processing, transporting (except in foreign commerce), cultivating, storing, catching or harvesting fish, shellfish or marine animals or vegetation in the navigable waters of the United States or the EEZ. Note that, unless the catch is to be sold, charter fishing operations that take customers out to fish are considered coastwise trade and not fisheries activities.

U.S. Build Requirement Summary

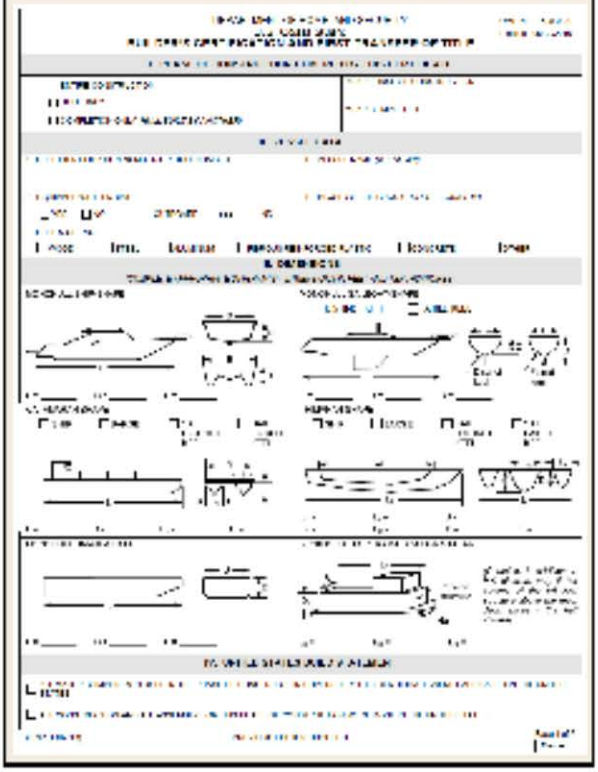
Documentation Status	Coastwise Trade	Fisheries
Vessel Documented	U.S. Build Required*	U.S. Build Required*
Vessel Not Documented	U.S. Build Required	U.S. Build NOT Required

* unless waived or otherwise excepted

Are there U.S. build requirements?

Yes. Documented vessels must be built in the United States in order to engage in the **coastwise trade** or in the **fisheries**, with limited exceptions. Vessels excluded by virtue of their tonnage or otherwise exempt from documentation must nevertheless be U.S. built and otherwise entitled to be documented with a coastwise endorsement in order to engage in the **coastwise trade**. There is no U.S. build requirement for vessels excluded from documentation by virtue of their tonnage which engage in the **fisheries**.

Builder's Certification (form CG-1261)



Are there exceptions to U.S. build requirements?

Yes. Certain vessels that are captured, forfeited, or wrecked may be excepted. Also, the Maritime Administration (MARAD) can issue waivers for foreign-built vessels or vessels of unknown or unprovable build to operate as commercial passenger vessels that carry no more than 12 passengers for hire. This requires a public notification and comment process, and an application fee.

How is build evidence established?

Build evidence for documented vessels is normally established through owner submission of an original Builder's Certification and First Transfer of Title (form CG-1261), completed by the builder as part of the documentation process. Copies are not accepted. Please be aware that there is no similar federal form to establish build evidence for vessels that measure less than five net tons. The NVDC may waive this build evidence requirement under certain circumstances.

What identification numbers are assigned?

A documented vessel is assigned an official number, which appears on the COD and is marked on some clearly visible interior structural part of the hull. Other unique identifiers may be assigned to, and marked on, a vessel under federal or state requirements, such as state numbers and hull identification numbers (HINs). These numbers are useful in identifying a vessel's documentation status, and obtaining other important vessel information from vessel data systems such as the Coast Guard's publicly available PSIX system.

Is a documented vessel exempt from state jurisdiction?

No. All documented vessels must comply with the laws of the state in which they are operated. The vessel's COD must be shown to state law enforcement personnel upon demand. States may require documented vessels to be registered (but not state numbered) and to display state decals showing that they have complied with state requirements.

Examples of Vessel Numbering

Official Number	1240950
State Number	FL 0001 AB
Hull Id Number	XYZ12345L485

Tonnage Measurement

Origins of Tonnage

The present concept of tonnage measurement dates back at least to the early middle ages. Tonnage duties were assessed on tuns (casks or barrels) of wine. Each tun held approximately 252 gallons of wine, weighing 2240 pounds, from which we get the "long ton" measure of weight.

By the late 1700's, systems were in place in Europe to assign tonnages to reflect vessel carrying capacity in "tons" of roughly 100 cubic feet each (a measure of volume related to the size of a standardized cask or barrel).

Using tonnage for tax purposes is addressed in the United States Constitution, and was the subject of the 3rd and 5th Acts of the First Congress.

CHAPTER III.

An ACT *imposing* DUTIES *on* TONNAGE.

Section 1. BE *it enacted by the* SENATE *and* HOUSE *of* REPRESENTATIVES *of the United States of America in Congress assembled*, That the following duties shall be, and are hereby imposed on all ships or vessels entered in the United States, that is to say:

CHAPTER V.

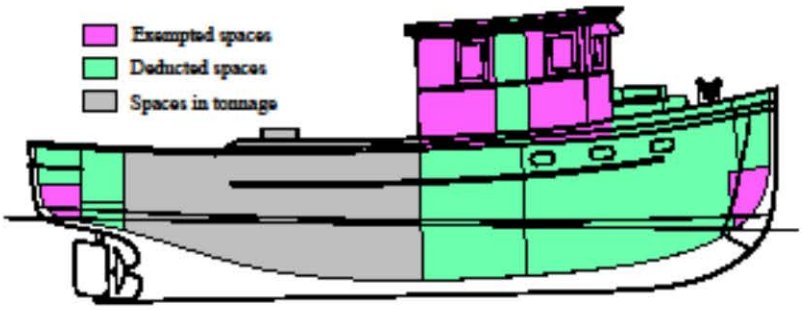
An ACT *to regulate the* COLLECTION *of the* DUTIES *imposed by Law on the* TONNAGE *of* SHIPS *or* VESSELS, *and on* GOODS, WARES *and* MERCHANDIZES *imported into the United States.*

What is net tonnage?

Net tonnage is a volumetric measure of a vessel's useful capacity, for which a number of different measurement systems are in use worldwide. U.S. law requires tonnage measurement for any vessel for which the application of a U.S. law depends on the vessel's tonnage. Owners of U.S. vessels less than 79 feet in length may choose measurement under one of two older U.S. Formal Measurement Systems (the Standard or Dual Regulatory Measurement Systems), or the U.S. Simplified Regulatory Measurement System. The U.S. tonnage measurement program is administered by the Coast Guard Marine Safety Center (MSC).

How do the measurement systems differ?

Formal (Standard or Dual) measurement involves the calculation of net tonnage using a complex series of measurements, exemptions and deductions, and is performed by an authorized measurement organization for a substantive fee paid by the vessel owner. Simplified measurement involves the calculation of net tonnage using a simplified formula, with owner-provided principal dimensions and other characteristics as the inputs. While taken as a group, the resulting net tonnages are comparable between formally and simplified measured vessels, the tonnage differences may vary significantly for individual vessels.



How is net tonnage certified?

This depends on how the vessel is measured. For formally measured vessels, the measurement organization certifies the net tonnage through issuance of a tonnage certificate. For simplified measured vessels, no comparable document is issued (excepting certain novel craft, for which the Coast Guard will issue a tonnage certificate). Instead, a completed Application for Simplified Measurement (form CG-5397) or, for documented vessels, a Builder's Certification (form CG-1261) serves as evidence of the measurement of the vessel, from which the net tonnage may be calculated by interested parties.

Tonnage Measurement (continued)

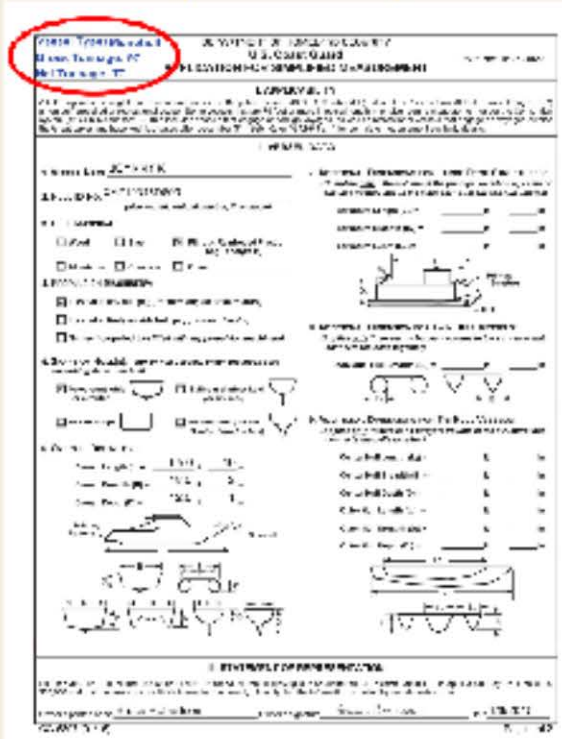
How do I choose a measurement system?

This depends on the circumstances specific to your vessel. In general, owners of most vessels less than 79 feet in overall length opt for the Simplified System, as this system often yields tonnages meeting their objectives while avoiding the cost of Formal measurement. Please be aware that under U.S. law, if a vessel is not formally measured, the Simplified System applies by default, regardless of whether an Application for Simplified Measurement (form CG-5397) is completed.

Can I calculate the net tonnage?

This depends on the measurement system used. While in all cases, the method for calculating tonnage is detailed in the tonnage regulations, Formal System rules are complex, and measurement is best left to individuals experienced in using these rules (e.g., authorized measurement organizations). Conversely, Simplified System rules are more straightforward, and the formulas for calculating tonnage have been programmed into the electronic Adobe .pdf version of the Simplified Application form. An owner can ascertain net tonnage by entering vessel data into this form, with the tonnage appearing in the form's upper left hand corner.

Application for Simplified Measurement (form CG-5397)



United States Coast Guard Maritime Information eXchange
Port State Information eXchange

The Port State Information eXchange (PSIX) system, updated weekly, contains vessel-specific information, including tonnage, on U.S. flag vessels, foreign vessels operating in U.S. waters, and Coast Guard contacts with those vessels. For undocumented vessels, tonnage information may appear, but is not certified as to its accuracy. (https://cgmix.uscg.mil/psix/)

Where can I find evidence of prior measurement?

For documented vessels, the assigned tonnages appear on the COD, regardless of the measurement system used, and can also be found in the Coast Guard's publically available PSIX vessel information system. For other vessels, there is no corresponding federal document or data system that provides such evidence of tonnage. The Coast Guard recommends that a copy of the tonnage certificate (if formally measured) or a completed Simplified Application (if simplified measured) be carried onboard any undocumented commercial vessel less than 79 feet in overall length for presentation to law enforcement personnel.

For further information

Refer to the U.S. Documentation and Tonnage Regulations (46 CFR 67 and 46 CFR 69, respectively), and the websites of the following governmental organizations: NVDC, MSC, CBP, and MARAD. In addition, the MSC maintains useful links to related documents and web pages on its website: http://www.uscg.mil/hq/msc/tonnage/links.asp.

This publication is intended to provide information to assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in understanding statutory and regulatory requirements related to certain aspects of vessel documentation and tonnage. It is not intended as, nor should it be construed to represent, a revision of or substitute for applicable statutes or regulations or established interpretations of either.