COMMERCIAL FISHING VESSEL SAFETY DIGEST

Photograph by Jerry Dzugan, AMSEA

COMMERCIAL FISHING VESSEL SAFETY DIGEST

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As recommended by
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FORWARD by the U.S. Coast Guard

This *Commercial Fishing Vessel Safety Digest* is a publication that will be of benefit to everyone involved in the commercial fishing industry. Whether you are an owner, operator, or crewmember, you will be able to use the *Digest* to understand the requirements on your vessel. As a trainer or vessel safety examiner, you will be able to use the *Digest* as a topical outline and a reference text.

The *Commercial Fishing Vessel Safety Digest* attempts to bring together all federal regulatory requirements for operating uninspected commercial fishing industry vessels. These include safety and survival equipment, navigation safety, pollution prevention, and emergency instruction and training.

Commercial fishing has consistently remained one of the most dangerous occupations in the nation. While the number of deaths among commercial fishers has been decreasing on average, the rate is still many times higher than any other marine industry. Ensuring that vessels are in full compliance with safety requirements and crews are trained in safety and survival techniques, we all can contribute to improving the safety record of the commercial fishing industry.

This *Commercial Fishing Vessel Safety Digest* had its roots with the Coast Guard, but safety advocates, industry associations, and the Commercial Fishing Industry Vessel Safety Advisory Committee (CFIVSAC) have been the driving forces behind its revisions and updates as published today. We endorse this *Digest* and encourage the entire commercial fishing community to make use of its contents.

Sincerely,

James A. Watson
Rear Admiral, U.S. Coast Guard
Director of Prevention Policy

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1 INTRODUCTION

So who needs a 'new' Commercial Fishing Vessel Safety Digest?

Background: The first *Fisherman's Digest* was published by the First Coast Guard District, Marine Safety Division (m) October 2, 1978 (D1 INST. P16703.1A). In 1980, new regulations regarding PFD lights and retroreflective material on PFDs rendered the publication obsolete.

In 1982, Richard Hiscock urged the U.S. Coast Guard D1(m) to update the *Digest.* During the fall and winter of 1982-83, Hiscock worked with LCDR 'Bud' Minott to bring together the material for a revised Digest that was published by the Coast Guard May 1, 1983 – in time to be distributed at a fishermen's show in New Bedford, Massachusetts. (D1 INST. P16703.1B)

Further revisions were made and another edition was published January 1, 1984 as D1 INST. P16703.1C. There were four printings of this edition including a Portuguese language edition. The final edition (D1 INST. M16703.1) was published April 1, 1986. Following the adoption of Fishing Vessel Safety Act in 1988 the Coast Guard adopted and published new regulations in 1991. Hiscock, with the able assistance of LCDR Paul Von Protz, USCG, Coast Guard D1(m), again set out to craft a series of articles on the new regulations, which were published in several regional fisheries publications. Those articles were the basis for this effort.

Do we still need such a document? Perhaps more than ever. There is no single publication where those who must comply with the regulations, and those charged with enforcement (compliance), can find the answers to basic questions about the regulations. For instance, to determine the regulatory requirements for immersion suits, survival craft and ring buoys, you need to research the regulations, several NVICs, and unpublished Headquarters and District policies. You have to check one NVIC to find the definition of 'cold waters' and another to find out where the retroreflective tape is to be placed. It's unlikely that all this research would take place just before a season opener or during a dockside exam. The bottom line is there is a lack of consistent, uniform, information about the regulations.

In 2007 the Commercial Fishing Industry Vessel Safety Advisory Committee (CFIVSAC) decided that this publication, when updated, could serve a valuable function for members of the commercial fishing industry. The Alaska Marine Safety Education Association undertook the work of updating and expanding it on behalf of the CFIVSAC.

Goal: To provide ONE publication that can be used by everyone involved with fishing vessel (safety) regulations.

Purpose: The purpose of the *Fisherman's Digest* was, and the purpose of the revised *Commercial Fishing Vessel Safety Digest* should be, to bring together ALL the federal regulations applicable to the operation of uninspected commercial fishing vessels. This Digest does not include fisheries management regulations.

Who can use the *Digest*: The *Digest* can be used by BOTH the fishing industry and the U.S. Coast Guard. The industry includes individual fishermen, fleet operators, instructors/trainers, equipment providers, and others involved with the industry. The U.S. Coast Guard includes Headquarters staff, Commercial Fishing Vessel Examiner Course (Yorktown) instructors, District Coordinators, Dockside examiners (Civilian, Regular CG, Reserve CG, USCG Auxiliary), Auxiliary instructors, CG Boarding Officers (at Station and Cutters), CG Small Boat (Life-Saving) Stations. In fact, any USCG personnel who interact with the fishing industry can use the *Commercial Fishing Vessel Safety Digest* as THE manual for fishing vessels.

2 DEFINITIONS

Except where specifically defined below, all words used in this ***Digest*** carry their customary meanings. Words used in the present tense include the future, and the singular includes the plural. Source: 46 CFR 28.50

Accepted organization means an organization that has been designated by the Commandant for the purpose of examining commercial fishing industry vessels under the provisions of §28.073.

Accommodations include:
(1) A messroom.
(2) A lounge.
(3) A sitting area.
(4) A recreation room.
(5) Quarters.
(6) A toilet space.
(7) A shower room.
(8) A galley.
(9) Berthing facilities.
(10) A clothing changing room.

Alcohol concentration means either grams of alcohol per 100 milliliters of blood, or grams of alcohol per 210 liters of breath.

Aleutian trade means the transportation of cargo, including fishery related products, for hire on board a fish tender vessel to or from a place in Alaska west of 153 degrees West longitude and east of 172 degrees East longitude if that place receives weekly common carrier service by water, to or from a place in the United States, except a place in Alaska

Approved means approved by the Commandant unless otherwise stated.

Auxiliary Craft means a vessel that is carried onboard a commercial fishing vessel and is normally used to support fishing operations.

Boundary Lines means the lines set forth in 46 CFR 7. In general, they follow the trend of the seaward high water shorelines and cross entrances to small bays, inlets and rivers. In some areas, they are along the 12-mile line which marks the seaward limits of the territorial sea and in other areas they come ashore. The Boundary Line referred to is a Federal Boundary line that generally goes from point to point from the most seaward points of land. It does not refer to any other boundary lines that may be set by states or regions for the management of specific fisheries.

Buoyant Apparatus means a buoyant apparatus approved by the Commandant.

Coast Guard boarding officer means a commissioned, warrant, or petty officer of the Coast Guard having authority to board any vessel under the Act of August 4, 1949, 63 Stat. 502, as amended (14 U.S.C. 89).

Coast Guard Representative means a person employed at the cognizant U.S. Coast Guard Sector Office, or an accepted organization, or a similarly qualified organization approved in examining commercial fishing industry vessels. Contact Chief, Office of Vessel Activities,

Commandant (CG-543), U.S. Coast Guard, 2100 Second Street S.W., Washington, DC 20593-0001 for a current list of accepted organizations or similarly qualified organizations.

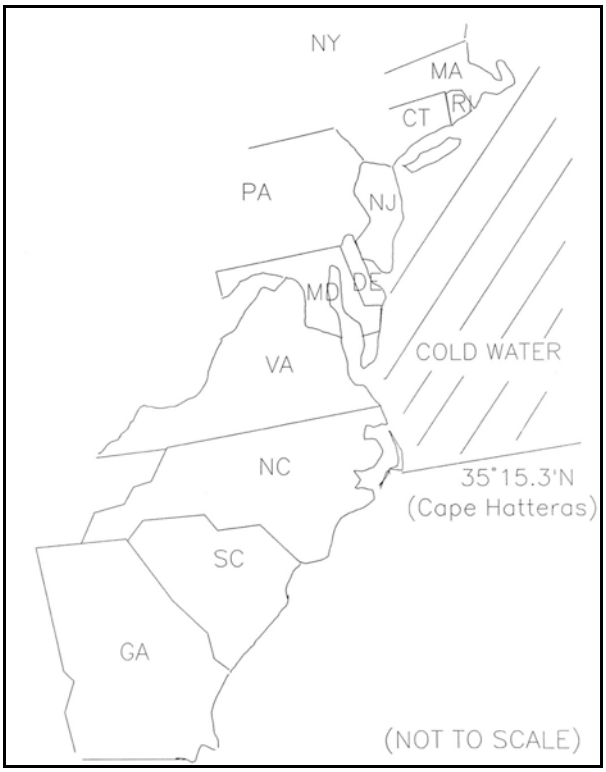
Coastal service pack means equipment provided in liferafts approved by the Commandant for coastal service.

Coastal waters means coastal waters as defined in 33 CFR 175.105, which are the territorial seas of the U.S., and those waters directly connected to the territorial seas (bays, sounds, harbors, rivers, inlets, etc.) where any entrance exceeds 2 nautical miles between opposite shorelines to the first point where the largest distance between shorelines narrows to 2 miles, as shown on the current edition of the appropriate National Ocean Service chart used for navigation. Shorelines of islands or points of land present within a waterway are considered when determining the distance between opposite shorelines.

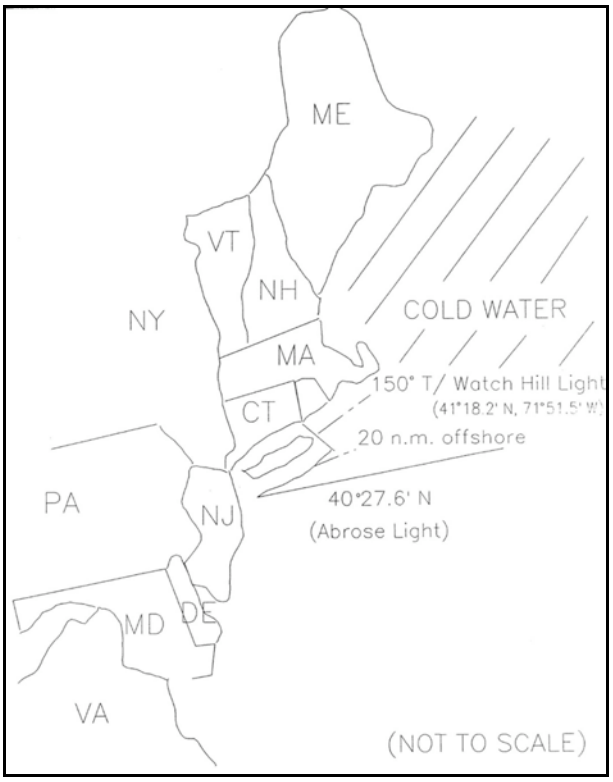
Coastline means the Territorial Sea Baseline as defined in 33 CFR 2.20.

Cold water means water where the monthly mean low water temperature is normally 59 degrees F (15 degrees C) or less. (See the maps on the following pages and Navigation and Inspection Circular No. 7-91 for the details of Cold Water Determinations.)

COLD WATER MAPS – U.S. ATLANTIC COAST



JANUARY, FEBRUARY, MARCH & APRIL



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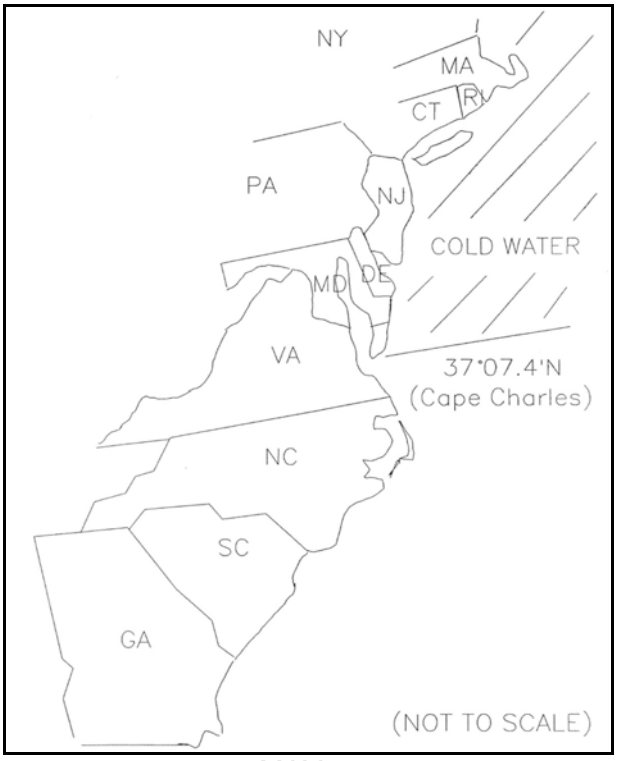

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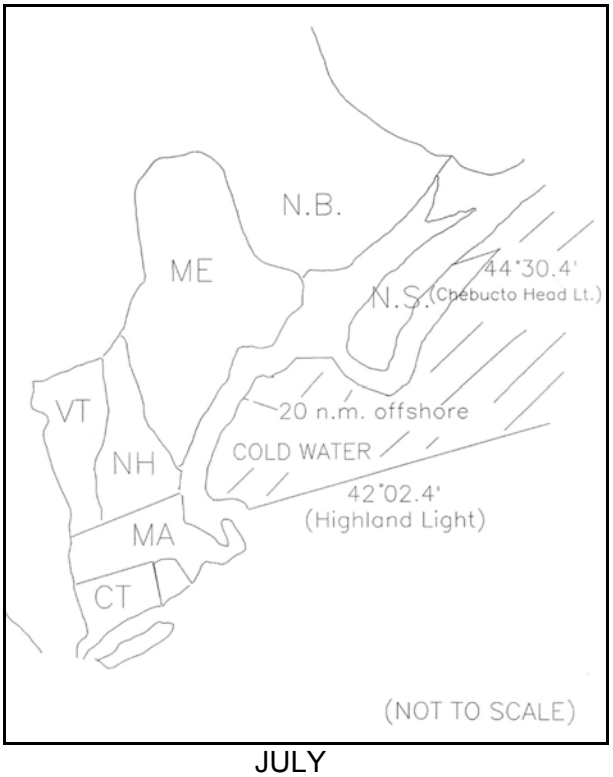

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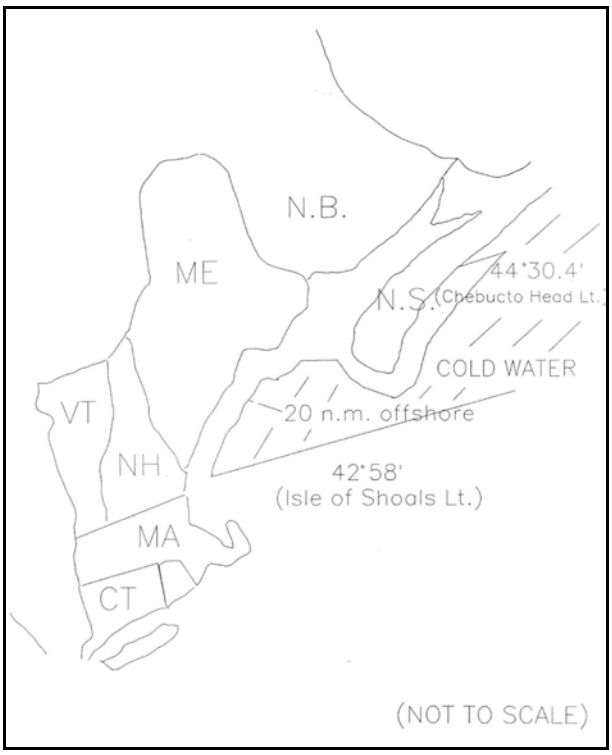

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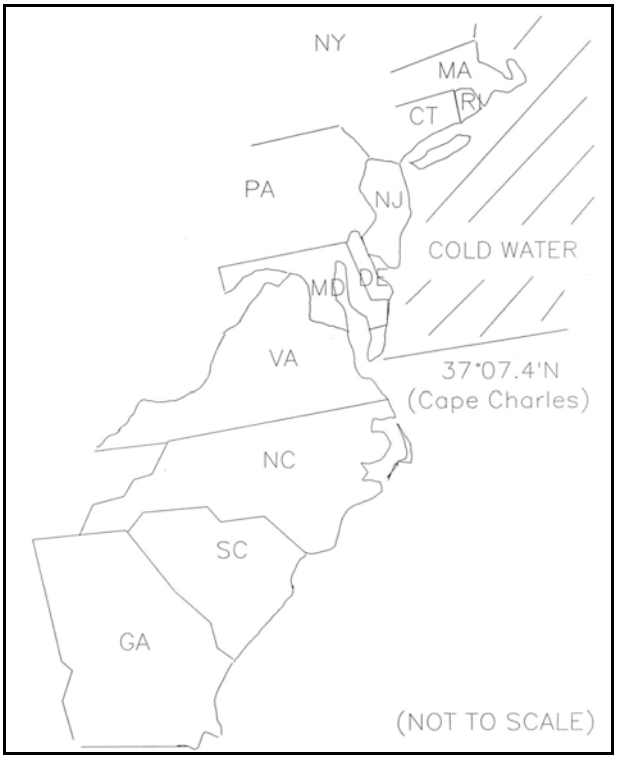

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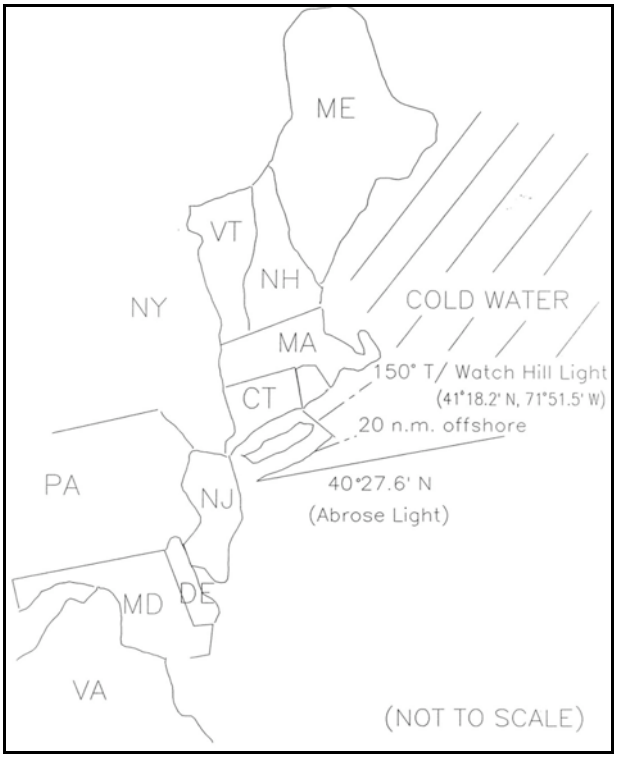

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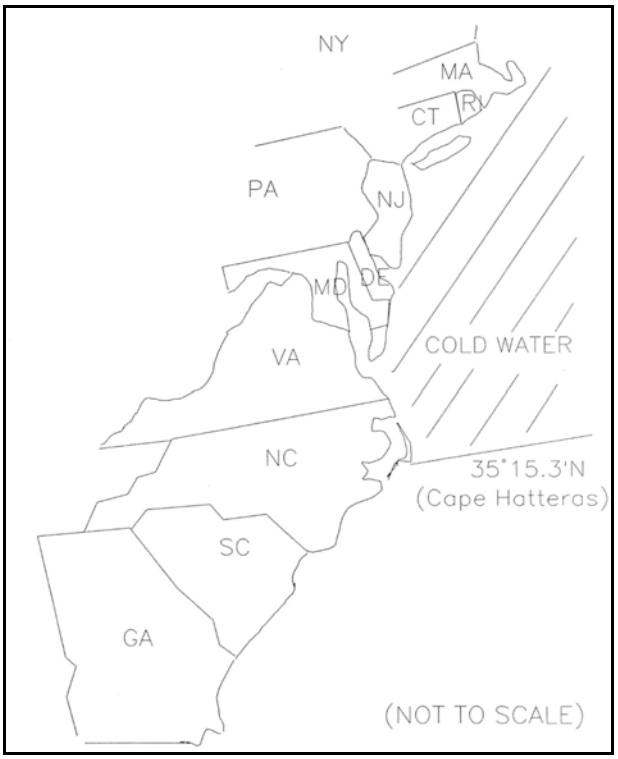
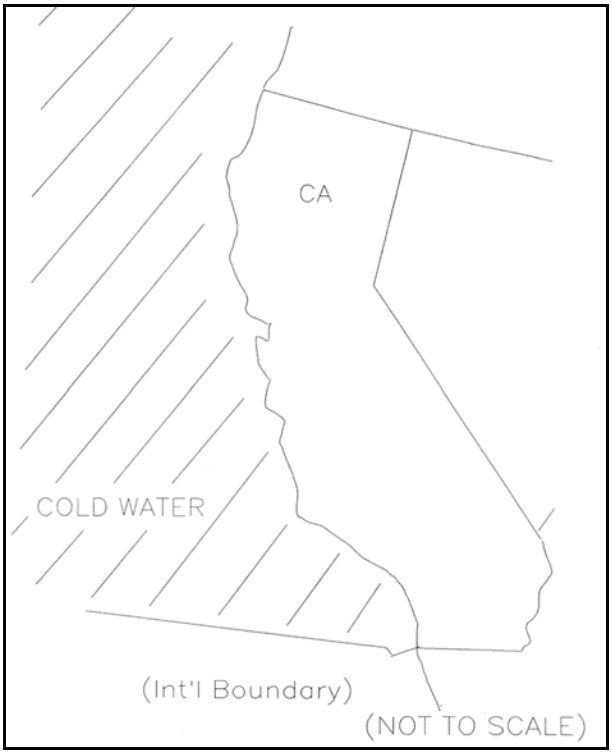
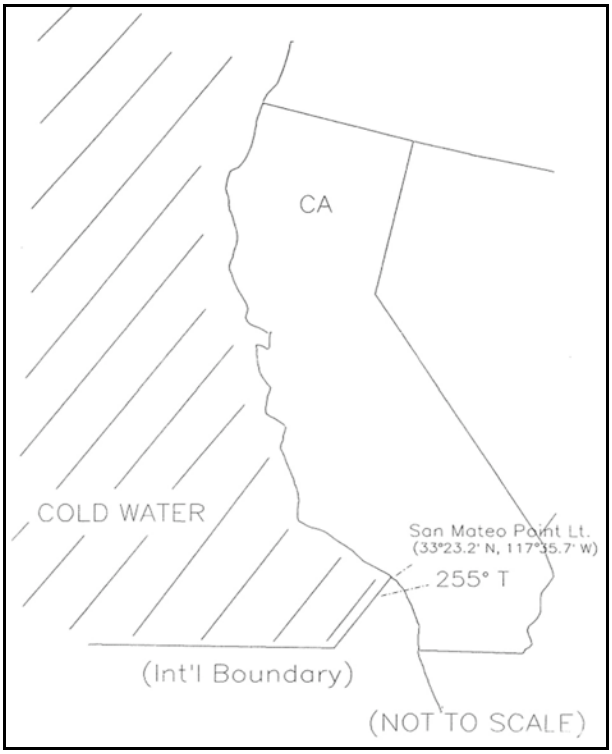


DECEMBER

COLD WATER MAPS – U.S. PACIFIC COAST



JANUARY & FEBRUARY



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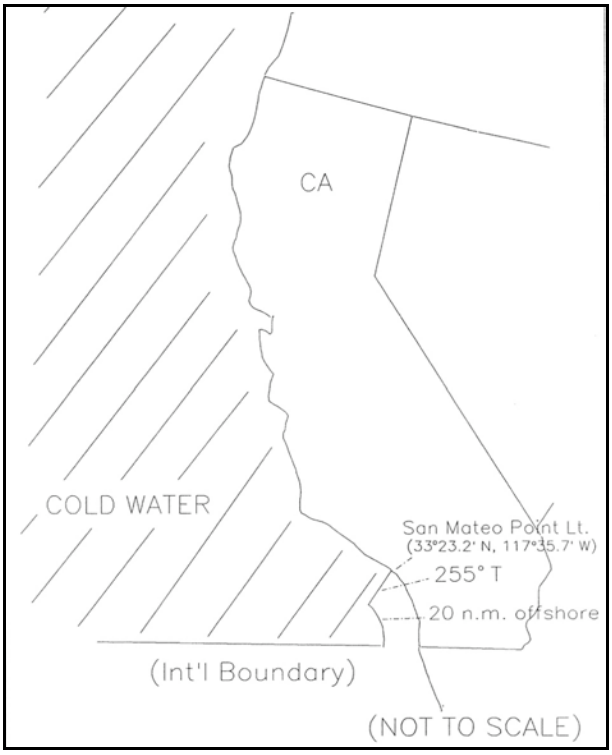
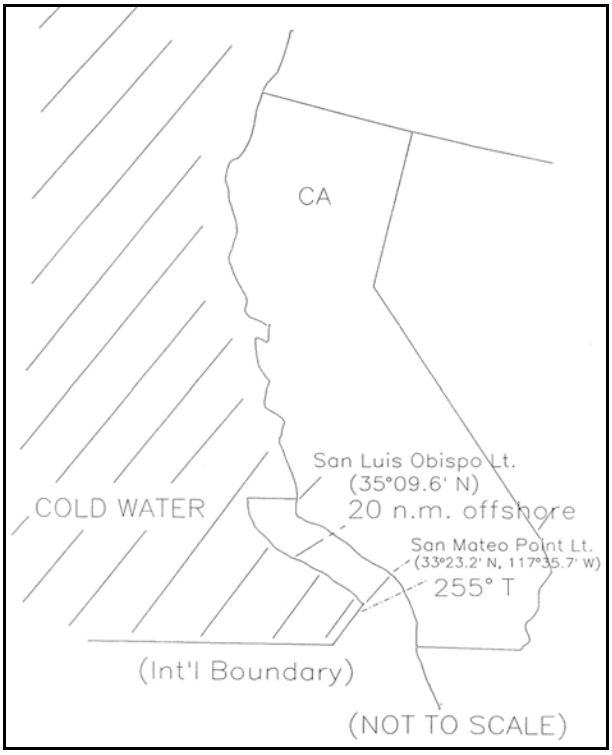


MARCH & APRIL



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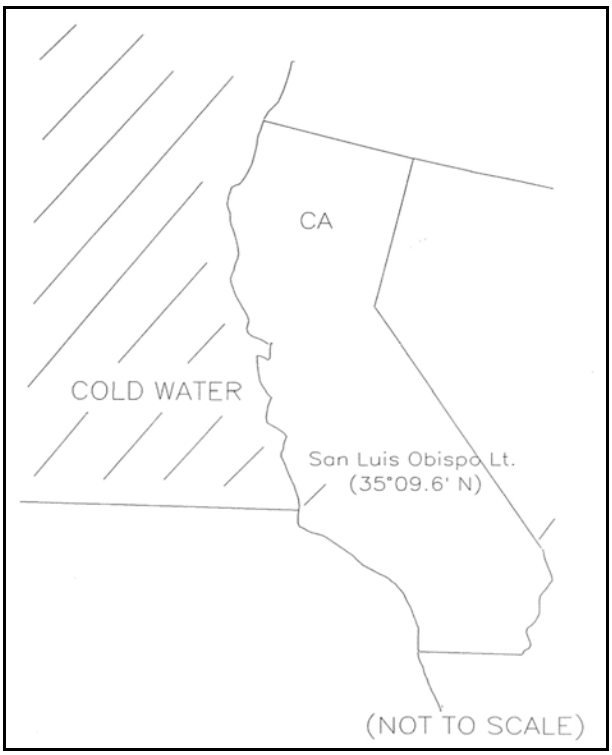

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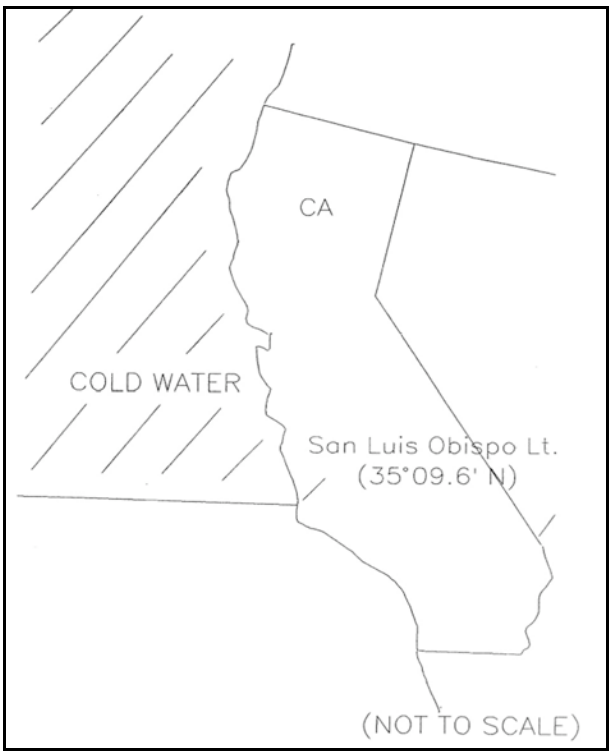
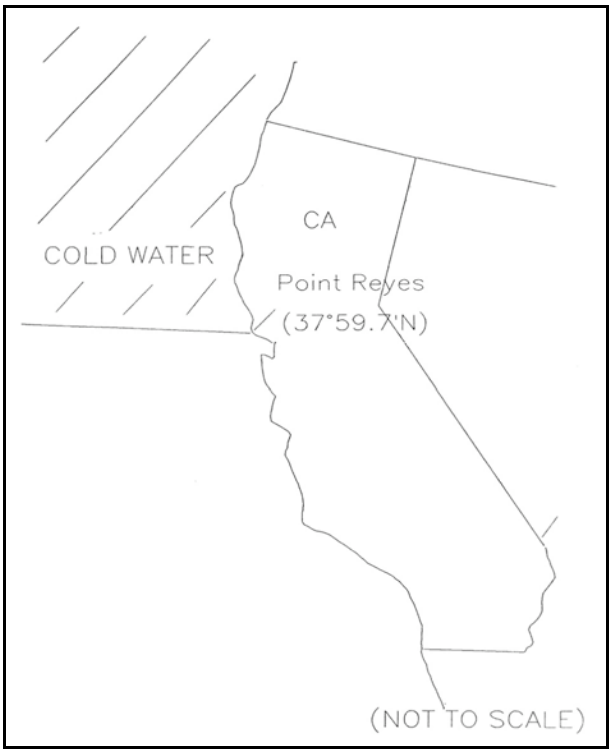


OCTOBER, NOVEMBER
& DECEMBER



SEPTEMBER

Commandant means the Commandant of the Coast Guard or an authorized representative of the Commandant of the Coast Guard.

Commercial fishing industry vessel means a fishing vessel, fish tender vessel, or a fish-processing vessel.

Currently corrected means corrected with changes contained in all Notice to Mariners published by the Defense Mapping Agency Hydrographic/Topographic Center.

Custom engineered means, when referring to a fixed gas fire extinguishing system, a system that is designed for a specific space requiring individual calculations for the extinguishing agent volume, flow rate, and piping, among other factors, for the space.

District Commander means an officer of the Coast Guard designated as such by the Commandant to command all Coast Guard activities within a district.

Documented vessel means a vessel for which a Certificate of Documentation has been issued under the provisions of 46 CFR Part 67.

Equipment packs means equipment provided in liferafts approved by the Commandant.

Especially hazardous condition means a condition which may be life threatening or lead to serious injury if continued.

Fish means finfish, mollusks, crustaceans, and all other forms of marine animal and plant life, except marine mammals and birds.

Fish processing vessel means a vessel that commercially prepares fish or fish products other than by gutting, decapitating, gilling, skinning, shucking, icing, freezing, or brine chilling.

Fish tender vessel means a vessel that commercially supplies, stores, refrigerates, or transports fish, fish products, or materials directly related to fishing or the preparation of fish to or from a fishing, fish processing, or fish tender vessel or a fish processing facility.

Fishing vessel means a vessel that commercially engages in the catching, taking, or harvesting of fish or an activity that can reasonably be expected to result in the catching, taking, or harvesting of fish.

Fishing vessel drill conductor means an individual who meets the training requirements of 46 CFR 28.270(c) for conducting drills and providing instruction once a month to each individual on board those vessels to which Subpart C of this section applies.

Fishing vessel safety instructor means an individual or organization that has been accepted by the local Officer-In-Charge, Marine Inspection to train Fishing Vessel Drill Conductors to conduct drills and provide instruction on those vessels to which Subpart C of this part applies.

Gasoline as used in this part includes gasoline-alcohol blends and any other fuel having a flash point of 110 degrees F (43.3 degrees C) or lower.

Inflatable buoyant apparatus means an inflatable buoyant apparatus approved the Commandant.

Inflatable liferaft means an inflatable liferaft that is approved by the Commandant.

Length means the length listed on the vessel's Certificate of Documentation or Certificate of Number.

Lifeboat means a lifeboat approved by the Commandant.

Liferaft means a liferaft approved by the Commandant.

Major conversion means a conversion of a vessel that:

- Substantially changes the dimensions or carrying capacity of the vessel;
- Changes the type of the vessel;
- Substantially prolongs the life of the vessel; or
- Otherwise so changes the vessel that it is essentially a new vessel, as determined by the Commandant.

Mile means a nautical mile.

North Pacific Area means all waters of the North Pacific Ocean and Bering Sea north of 48 degrees 30' north latitude including waters in contiguous bays, inlets, rivers, and sounds.

Officer in Charge, Marine Inspection (OCMI) means an officer of the Coast Guard who commands a Marine Inspection Zone described in 33 CFR Part 3 or an authorized representative of that officer.

Open to the atmosphere means a space that has at least 15 square inches (9680 square millimeters) of open area directly exposed to the atmosphere for each cubic foot (0.0283 cubic meters) of net volume of the space.

Operating station means the principal steering station on the vessel from which the vessel is normally navigated.

Pre-engineered means, when referring to a fixed gas fire extinguishing system, a system that is designed and tested to be suitable for installation as a complete unit in a space of a set volume, without modification, regardless of the vessel on which installed.

Similarly qualified organization means an organization that has been designated by the Commandant for the purpose of classing or examining commercial fishing industry vessels under the provisions of §28.076.

State numbered vessel means a vessel for which a certificate of numbers has been issued by the state in which it is principally operated. Also, referred to as a “non-documented vessel”.

Switchboard means an electrical panel that receives power from a generator, battery, or other electrical power source and distributes power directly or indirectly to all equipment supplied by the power source.

Warm water means water where the monthly mean low water temperature is normally more than 59 degrees F (15 degrees C).

Watertight means designed and constructed to withstand a static head of water without any leakage, except that "watertight" for the purposes of electrical equipment means enclosed so that equipment does not leak when a stream of water from a hose with a nozzle one inch (25.4

millimeters) in diameter that delivers at least 65 gallons (246 liters) per minute is played on the enclosure from any direction from a distance of 10 feet (3 meters) for five minutes.

Weather deck means the uppermost deck exposed to the weather to which a weathertight sideshell extends.

Weathertight means that water will not penetrate into the unit in any sea condition.

SOURCE: 46 CFR 28.50

3 RECORDING AND MARKING YOUR VESSEL

This chapter applies to any and all fishing industry vessels.

A United States commercial fishing vessel must be documented with the U.S. Coast Guard, or issued a number from the state where it is principally used.

DOCUMENTATION

Federal law requires that all vessels 5 net tons or more engaged in the fisheries on the navigable waters of the United States or in the Exclusive Economic Zone must have a Certificate of Documentation bearing a valid endorsement appropriate for the activity in which engaged. A fishery endorsement entitles a vessel to employment in the fisheries as defined, subject to Federal and State laws, and entitles the vessel to land its catch, wherever caught, in the United States.

Before a vessel can be documented for the fisheries trade, it must be demonstrated, to the satisfaction of the Coast Guard that the vessel qualifies as a U.S. built vessel. To do this a vessel must meet the following criteria:

- All major components of its hull and superstructure are fabricated in the United States; and
- The **vessel** is assembled entirely in the United States.

The tonnage of a vessel is not a measure of weight, but rather a measure of cubic volume, one ton being equal to 100 cubic feet. Experience has shown that a vessel of 26 feet may measure 5 net tons, but a vessel of 40 to 50 feet may measure less than 5 net tons. The tonnage of a vessel depends on many complex factors. The measurement and calculation of tonnage can be accomplished using "simplified admeasurement", or the vessel can be "formally admeasured" by one of several classification societies. Additional information on the simplified admeasurement may be found at:
http://www.access.gpo.gov/nara/cfr/waisidx_03/46cfr69_03.html.

CITIZENSHIP OF OWNERS

Owners (individual, partnership, or corporation) of a documented vessel must be or qualify as a citizen of the United States.

MASTER/CREW

The crew on a U.S. fishing vessel must also be United States citizens, aliens lawfully admitted to the United States for permanent residence, or any other aliens allowed to be employed under the Immigration and Nationality Act. The latter cannot comprise more than twenty-five percent (25%) of the unlicensed crew unless a waiver is obtained from the Commandant of the U.S. Coast Guard.

The crew citizenship requirements do not apply, other than for the master, to a fishing vessel fishing exclusively for highly migratory species.

REQUIREMENTS FOR DOCUMENTED VESSELS

When a vessel of the United States is being operated, the **original** Certificate of Documentation must be on board, unless the Certificate of Documentation is being submitted to the U.S. Coast Guard National Vessel Documentation Center for changes. The Certificate of Documentation must be presented, upon demand, to any Customs official or Coast Guard Officer.

IDENTIFICATION OF A DOCUMENTED VESSEL / VESSEL MARKING INSTRUCTIONS

Every documented vessel must be marked with its official number, name and hailing port. A Certificate of Documentation is not valid for operation of the vessel until the vessel is marked in accordance with the prescribed regulations contained in 46 CFR 67.120. All documented commercial fishing vessels must be identified as follows:

- The official number must be **permanently** marked in block type Arabic numerals not less than 3 inches in height on a **clearly** visible interior **structural** part of the hull. The letters “N.O.” precedes the number so that the display of number reads as follows: "N.O. 123456"

- The vessel name and hailing port (including state, territory or possession) must be permanently displayed on the stern of the vessel. Abbreviations of the city of the hailing port (such as "N.B." for New Bedford) are not acceptable; however, the state may be abbreviated (such as CT or Conn). The vessel name must also be permanently displayed on the port and starboard bow. Characters must be composed of letters from the Latin alphabet (A,B,C) or Arabic (1,2,3) or Roman numerals (I, II, III), clearly legible and not less than 4 inches in height.

RENEWAL OF DOCUMENT

Certificates of Documentation are valid for one year only. Certificates **must** be renewed on or before the last day of the month in which the certificate expires. The expiration date will be indicated on the validation sticker on the document. As the owner of a documented vessel, you should receive a renewal notification about six weeks before the document is due to expire. If you do not receive this notice by the beginning of the month in which the document expires, start the renewal process yourself by contacting the National Vessel Documentation Center (NVDC) (800-799-8362.) This will ensure the renewal process is completed on time and the document does not lapse. Certificates of Documentation are not surrendered for renewal, however a renewal form must be submitted to the NVDC either in person or by mail. When you receive the validation renewal sticker from the NVDC, place it on the document in the marked block.

PENALTIES

46 United States Code, Section 12151, provides the following penalties for violations of documentation laws and regulations:

VIOLATION	MAXIMUM CIVIL PENALTY
Late renewal	$10,000.00
Any other violation of the vessel documentation laws or regulations	$10,000.00 per occurrence
Use of a vessel documented for the pleasure trade **only** in another trade	Forfeiture of the vessel
Fraudulent application	Forfeiture of the vessel
Fraudulent use of certificate	Forfeiture of the vessel

SURRENDER OF CERTIFICATE

A Certificate of Documentation must be surrendered to the NVDC when one or more of the following occurs:

- The ownership of the vessel changes in whole or in part.
- The general partners of a partnership owning the vessel change by addition, deletion, or substitution.
- The homeport of the vessel changes.
- The gross or net tonnages, or dimensions of the vessel change.
- The name of the vessel changes.
- The restrictions imposed on the vessel change by addition, deletion, or substitution.
- The legal name of any owner of the vessel changes.
- A tenant, by the entirety owning any part of the vessel, dies.
- A self-propelled vessel becomes non-self-propelled, or a non-self-propelled vessel becomes self-propelled.
- The trade endorsement of the vessel changes by addition, deletion, or substitution.
- The discovery of a substantive or clerical error made by the issuing Documentation Officer.
- The vessel is placed under the command of a person who is not a citizen of the United States. (The document may be re-validated by the Documentation Officer when the vessel is once again placed under the command of a citizen of the United States.)

If a vessel's Certificate of Documentation expires, the document becomes invalid and must be surrendered to a Coast Guard Documentation Officer. Failure to renew and failure to turn over the document are separate violations.

STATE NUMBERING

If a vessel is less than 5 net tons and **equipped with propulsion machinery**, it must be numbered. This is done by the STATE in which the vessel is principally operated. The vessel will receive a Certificate of Number from the state.

REQUIREMENTS FOR STATE NUMBERED VESSELS

1. A current Certificate of Number must be on board when the vessel is in operation.
2. The characters (letter and numbers) issued to the vessel must be displayed as follows:
   a. The characters must be placed on both sides of the forward half of the vessel.

b. The characters must be either painted on or attached in some permanent way to the hull.
c. The characters must be block letters and numbers not less than 3 inches in height, and contrast in color to the background on which they are placed.
d. The letters at the beginning and the end of the numbers must be separated from the numbers by a space equal to the size of one of the characters. This space may be left blank or have a hyphen inserted in it.
e. The characters must be displayed on the vessel to read from left to right. EXAMPLES: AB 1234 CC or AB-1234-CC.

3. The current validation sticker, if issued, must be displayed in accordance with the instructions provided by the issuing authority.

SOURCES: 46 U.S.C. Chapters 121 and 123, 33 CFR Part 173, Subpart B, 46 CFR Parts 67 and 69

4 REGULATIONS APPLY TO ALL VESSELS SELLING CATCH

This chapter applies to any and all fishing industry vessels.

The question is often asked: Are vessels catching and **selling** fish, generally considered "sport fish", required to comply with the commercial fishing industry vessel safety regulations? The answer is: **Yes!**

The key word is **selling**. A vessel engaged in selling "fish" (defined as finfish, mollusks, crustaceans, and all other forms of animal and plant life) is considered to be a "fishing vessel" (meaning a vessel that commercially engages in the catching, taking, or harvesting of fish or an activity that can reasonably be expected to result in the catching, taking or harvesting of fish). Even a vessel with a sport license, e.g. tuna, from National Marine Fisheries Service (NMFS) is considered a commercial fishing vessel by the Coast Guard if the catch is **sold**.

Vessels that sell their catch, or a portion of the catch, are considered to be commercial fishing vessels and are subject to the fishing vessel safety regulations. A vessel 5 net tons or more engaged in commercial fishing is required to be documented with the Coast Guard. The Certificate of Documentation must be endorsed for "Fishing". A vessel less than 5 net tons, if propelled by machinery, must have a certificate of numbers issued by the state in which the vessel is principally operated.

Other vessels may be subject to commercial fishing industry safety regulations if selling catch:

“Six-pack vessels” (Uninspected Passenger Vessels – UPVs – carrying six or fewer passengers for hire) if they are **selling** the catch – whether or not they are carrying passengers – are subject to the commercial fishing vessel safety regulations.

Small Passenger Vessels (Inspected under 46 CFR Subchapters T and K) carrying more than six passengers for hire are inspected and regulated by other safety regulations and are not required to meet commercial fishing vessel safety regulations. **However,** if they are **not** carrying passengers (not operating under their certificate of inspection) and are selling the catch they **are** subject to the commercial fishing vessel safety regulations.

Native American Tribal Fisheries are subject to the commercial fishing industry vessel safety regulations.

The fishing vessel safety requirements vary depending on several factors, including (a) state numbered, or documented with the Coast Guard, (b) the number of persons on board, (c) the area of operation, and (d) the season of the year. This will be detailed in following chapters.

SOURCES: 46 U.S.C. 4502, ALDIST 109 / 96

5 PERSONAL FLOTATION DEVICES (PFDs)

This chapter applies to any and all fishing industry vessels.

PFD REQUIREMENTS BY VESSEL LENGTH:

VESSEL LESS THAN 40 FEET

Type I, Type II, Type III, Type V commercial hybrid, immersion suit, or exposure suit (also called survival suit). For details of immersion suit requirements see Chapter 5.

VESSEL 40 FEET AND OVER

Type I, Type V commercial hybrid, immersion suit, or exposure suit. For details of immersion suit requirements see Chapter 5.

EACH PFD MUST BE:

Of the **proper size** for each person on board.

Be in **serviceable condition**, meaning no rot, broken straps or stitching, punctures, tears or serious deterioration, and that the PFD is able to operate for its intended purpose.

Readily accessible, meaning that each wearable PFD must be stowed so that it is easily accessible to the individual for whom it is intended, from both the individual's normal work station and berthing area. **If there is no location accessible to both the work station and the berthing area, an appropriate PFD must be stored in each location**.

PFD LIGHTS

Each wearable PFD carried on a commercial fishing vessel operating on **ocean, coastwise*, or Great Lakes** voyages must be equipped with an approved PFD Light (CG Approval Number 161.012). The light must be securely attached to the front shoulder area of each PFD, so it will be above water when a person is wearing the PFD.

The light or the power source must be marked with a date of expiration, unless it is a standard battery, such as a 9-volt or D-cell. Unmarked batteries must be replaced annually with the type designated by the manufacturer. Other batteries or lights must be replaced by their expiration date.

There is a wide selection of approved PFD lights available. They will vary in cost, quality and performance. Strobe lights are the most expensive approved lights available, but they are also the most effective. (See Chapter 20 for the correct use of strobe lights.)

Keep in mind, the effectiveness of batteries and lights degrades in cold temperatures. The use of chemiluminescent devices (chemical lights) should be avoided on vessels operating in near-freezing waters.

***** "Ocean" and "coastwise" includes the waters of any ocean or the Gulf of Mexico. This includes all offshore waters beyond the headlands of any body of water which may be designated as "sea" or "bay." (See NVIC 1-92)

PLACEMENT OF RETROREFLECTIVE MATERIAL

Each PFD must have 31 square inches (200 sq. cm) of APPROVED retroreflective material on the front side, and 31 square inches (200 sq. cm) of material on the back side. If the PFD is reversible (all Type I PFDs) they must be similarly marked on the inside.

The material must be divided equally between the upper quadrant of each side and placed as close to the shoulder as possible.

If the retroreflective material deteriorates or must be replaced, new material should be positioned in the same place as the old material.

Only Coast Guard approved retroreflective material (Approval number 164.018/..) should be used. This material is tested for flexibility, adhesion, and visibility in cold, wet, and oily conditions. There are two (2) types of approved material available:

- Type I is intended for flexible surfaces not continually exposed to the elements i.e., sun, rain, spray, cold (e.g. PFDs)
- Type II is intended for rigid surfaces continually exposed to the elements (e.g. ring buoys, lifefloats)

Adding retroreflective material. If your PFDs do not already have retroreflective material, it is simple to add it. You can buy the material and adhesive at most marine supply stores. It usually comes in 4" by 4" squares. You need four squares for each Type II or Type III PFD, two for the front and two for the back. The number of squares needed for Type I depends on the number of reversible sides. Standard Type I PFDs need eight squares; horse-collar Type I needs six.

Be sure the application area is dry and free of grease and dirt. Mark off the area for placement. Apply adhesive to the marked area and allow to dry. Peel the backing off the retroreflective material and carefully apply it to the PFD. Follow manufacturer's application directions carefully.

NOTE: USCG approved immersion suits are equipped with the required retroreflective material. The purpose of the retroreflective material is to make the wearer as visible as possible under nighttime search conditions. It is recommended that additional material be added to the back side of all immersion suits and Type V exposure coveralls. The pattern is not necessarily the same as that used on lifejackets. The key is to be seen; you are not a survivor until you are rescued.

MARKING

PFDs must be marked with either the name of the vessel, the owner of the PFD, or the person to whom the PFD is assigned. It must be printed in block letters with waterproof marking. Letters should be at least one inch high and in a contrasting color.

Follow the manufacturer's recommendation for marking your PFD since some inks and paints can damage PFD materials.

ADDITIONAL INFORMATION

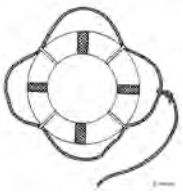
Substitution of immersion suits for PFDs. U.S. Coast Guard Approved immersion suits may be substituted for Type I, II or III PFDs on uninspected commercial vessels, including fishing industry vessels. Immersion suits may not be substituted for PFDs on recreational vessels or uninspected passenger vessels. Only immersion suits manufactured to U.S. Coast Guard standards and marked with U.S. Coast Guard Approval Numbers 160.071 or 160.171 may be substituted for the required PFDs.

Types of PFDs. There are five types of PFDs. The type indicates the recommended service or use. Some PFDs are more than one type.

A TYPE I PFD, or OFF-SHORE LIFE JACKET provides the most buoyancy. It is effective for all waters, especially open, rough, or remote waters where rescue may be delayed. It is designed to turn most unconscious wearers face up in the water. The Type I comes in two sizes. The ADULT size provides at least 22 pounds of buoyancy, the CHILD size, 11 pounds minimum.

A TYPE II PFD, NEAR-SHORE BUOYANT VEST is intended for calm, inland waters or where there is a good chance of quick rescue. This type will turn some unconscious wearers to a face-up position in the water. An ADULT size device provides at least 15 1/2 pounds buoyancy; a MEDIUM CHILD size provides 11 pounds. INFANT and SMALL CHILD sizes each provide at least 7 pounds buoyancy.

A TYPE III PFD, or FLOTATION AID is good for calm, inland waters, or where there is a good chance of quick rescue. It is designed so wearers can turn themselves to a face-up position in the water. The wearer may have to tilt their head back to avoid turning face-down in the water. The Type III has the same minimum buoyancy as a Type II PFD. It comes in many styles, colors, and sizes and is generally the most comfortable type for continuous wear. Float coats, fishing vests, and vests designed for water sports are examples of this type PFD.



A TYPE IV PFD, or THROWABLE DEVICE is intended for calm, inland waters with heavy boat traffic, where help is always present. It is designed to be thrown to a person in the water and grasped and held by the user until rescued. It is not designed to be worn. Type IV devices include buoyant cushions, ring buoys, and horseshoe buoys. RING BUOYS are required on most commercial fishing vessels. (See Section 7.)

TYPE V PFD, or SPECIAL USE DEVICE is intended for specific activities and may be carried instead of another PFD only if used according to the approval condition on the label. Varieties include deck suits (exposure coveralls), work vests, board sailing vests, and Hybrid PFDs. Some Type V devices provide significant hypothermia protection.

At present, only certain Type V work suits have been approved as substitutes

for Type II or Type III PFDs. Some anti-exposure flotation jackets are approved as Type III devices. These may be carried to meet the requirement for a Type III PFD on vessels less than 40 feet in length, or as additional equipment on a vessel required to have Type I PFDs or immersion suits on board.

Type V work vests are designed to provide freedom of motion, yet provide flotation in case of a fall overboard. They are widely used by personnel working on the decks of tugboats, towboats, barges, and other merchant ships. They are recommended for use on deck on board fishing vessels.

A Type V HYBRID INFLATABLE PFD is the least bulky of all PFD types. It contains a small amount of inherent buoyancy, and an inflatable chamber. Its performance is equal to a Type I, II, or III PFD (as noted on the PFD label) when inflated. Hybrid PFDs must be worn when underway to be acceptable. *As of this writing, there are no Type V hybrids available on the market.* They have been replaced by fully inflatable PFDs which are USCG approved and available.

Inflatable devices, whether approved or unapproved, need special attention.

- They should be opened and dried out whenever they become wet. They should be repacked only when dry.
- They should be thoroughly inspected periodically according to the manufacturer's instructions in the manual that should be provided with the device.
- If there are no manufacturer's instructions, the Coast Guard recommends a monthly inspection, or for an infrequently used device, and inspection before the device is to be used. An inspection should include the following:
    - The device should be inflated and should stay firmly inflated overnight.
    - Flotation cells should be visually inspected for damage and deterioration from mold or mildew. The means of attachment of the flotation cell to the body of the device should also be checked for condition and proper attachment.
    - Oral inflation tubes should be in good condition and firmly secured to the flotation cell and valve. The oral inflation valve should be checked for condition and proper operation.
    - CO2 inflation mechanisms should be checked for proper and free operation, and should be loaded with an unused CO2 cartridge of the proper size.
    - If the inflation mechanism is automatic, it should be loaded with the proper water-sensitive element. If the vessel operates in near-freezing waters, the element should be of type that will activate quickly in cold water.

SOURCES: 46 U.S.C. 4102, 46 U.S.C. 4502, 46 CFR 25.25, 46 CFR 28.110, 46 CFR 28.135, 46 CFR 28.140, and NVICs 1-87 and 1-92.

6 IMMERSION SUITS

This chapter applies to any and all fishing industry vessels.

Many commercial fishing industry vessels (including sail vessels and manned barges) are required to carry immersion (exposure) suits. Immersion suits (CG approval numbers beginning with 160.171) were formerly called exposure suits (CG approval numbers beginning with 160.071). Suits carrying the 160.071 approval number should be carefully inspected to insure they are still in serviceable condition.

DOCUMENTED VESSELS – EAST COAST:

Vessels operating **beyond the boundary line, north of 32 degrees North (vicinity of Savannah, GA) or south of 32 degrees South must** be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

Vessels operating **beyond coastal waters** (beyond three mile limit) when the waters are "cold" (meaning the monthly water temperature is 59 degrees F or less, as set forth in NVIC 7-91) **must** be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

DOCUMENTED VESSELS – LAKE SUPERIOR:

Vessels operating on **Lake Superior must** be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

DOCUMENTED VESSELS – WEST COAST:

Vessels operating **beyond the boundary line, north of 32 degrees North or south of 32 degrees South must** be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

Vessels operating **on coastal waters** (inside three mile limit) **north of Point Reyes California** must be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

UNDOCUMENTED VESSELS – EAST COAST:

Vessels operating **beyond coastal waters** (beyond three mile limit) when the waters are "cold" (meaning the monthly water temperature is 59 degrees F or less, NVIC 7-91) **must** be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

UNDOCUMENTED VESSELS – LAKE SUPERIOR:

Vessels operating on **Lake Superior must** be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

UNDOCUMENTED VESSELS – WEST COAST:

Vessels operating **on coastal waters north of Point Reyes California** must be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

Vessels operating **beyond coastal waters** (beyond three mile limit) **when the waters are**

"cold" (meaning the monthly water temperature is 59 degrees F or less, NVIC 7-91) **must** be equipped with at least one CG Approved Immersion Suit for each person on board (POB).

"COLD WATERS"

"Cold Waters" and “Cold Water areas” are defined in Navigation and Inspection Circular (NVIC) 7-91, and as shown on the maps in this document in Section 2: DEFINITIONS.

QUESTION: Could documented fishing industry vessels operating **inside** the boundary line be required to carry immersion suits?

ANSWER: Yes, if the vessel is operating outside "territorial waters" (three miles) on waters that are "cold" the vessel is required to have suits on board.

EACH IMMERSION SUIT MUST BE

Of a **suitable size**, for each person on board, **including children**. It is important to try on an immersion suit BEFORE you purchase since suit cuts (and therefore fitting) vary depending on the manufacturer. It is important to note that the ‘Universal Size’ is labeled (NOT designed) to fit individuals from 110 to 330 lbs. However, if you are under 140 lbs or over 240 lbs you should pay special attention to the fit of the suit, as an intermediate or jumbo size may be a better fit.

In **serviceable condition**, meaning no rot, broken straps or stitching, punctures, tears or serious deterioration, and that the suit is able to operate for its intended purpose.

Readily accessible, meaning that each immersion suit must be stowed so that it is readily accessible to the individual for whom it is intended, from **both** the individual's normal work station and berthing area. **If there is no location accessible to both the work station and the berthing area, an appropriate suit must be stored in each location.**

PFD LIGHTS

Each immersion suit carried on a commercial fishing vessel operating on ocean**, coastwise,* or Great Lakes** voyages must be equipped with an APPROVED PFD Light (CG Approval Number 161.012). The light must be securely attached to the **front shoulder area** of each suit, so it will be above water when the suit is worn.

The light or the power source must be marked with a date of expiration, unless it is a standard battery, such as a 9-volt or D-cell. Unmarked batteries must be replaced annually and must be of the type designated by the light manufacturer. Other batteries or lights must be replaced by their expiration date.

Approved PFD lights are available in a wide selection of quality and performance. Strobe lights are the most expensive approved lights available, but they are also the most effective.

The use of chemiluminescent (chemical lights) should be avoided on vessels operating in near-freezing waters.

* "Ocean" and "coastwise" includes the waters of any ocean, or the Gulf of Mexico. This includes all offshore waters beyond the headlands of any body of water that may be designated as "sea" or "bay." (See NVIC 1-92)

RETROREFLECTIVE MATERIAL

USCG approved immersion suits come from the manufacturer equipped with the required retroreflective material. The purpose of the retroreflective material is to make the wearer as visible as possible under nighttime search conditions. It is recommended that additional material be added to the back side of all immersion suits to maximize visibility.

MARKING

Each immersion suit must be marked with either the name of the vessel, the owner of the suit, or the person to whom the suit is assigned. It must be printed in block letters with waterproof marking. Letters should be at least one inch high and in a contrasting color.

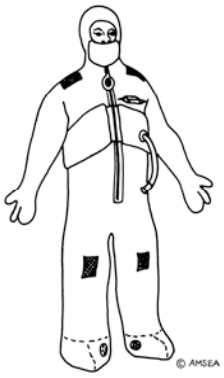
Follow the manufacturer's recommendation for marking your suit since some inks and paints can damage immersion suit materials.

NOTE: Vessels that are **required** to carry immersion suits are **not** required to carry other wearable PFDs (Type I, II, III, V, etc.)

SOURCES: 46 USC 4102, 46 USC 4502, 46 CFR 25.25, 46 CFR 28.110 and NVICs, 7-91 and 1-92

ARE IMMERSION SUITS ENOUGH?

Vessels required by the fishing vessel safety regulations to carry immersion (survival) suits are **not** required to be equipped with PFDs (life jackets). However, most safety professionals, including Coast Guard Search and Rescue specialists, strongly recommend that **all** vessels be equipped with PFDs in addition to other lifesaving equipment.



There are many reasons why the well-equipped vessel should have life jackets as well as immersion suits on board. First, whenever the Coast Guard responds to requests for assistance they will ask that personnel on board "don life jackets". If all you have on board are immersion suits, this may mean a long, hot, uncomfortable wait for assistance.

Second, when the Coast Guard tows a vessel, personnel handling the towing bridles and hawsers are asked to "don life jackets". This is a sensible precaution; working on a slippery foredeck can be hazardous at best. While an immersion suit will provide increased protection should a fall overboard occur, wearing an immersion suit while handling towing bridles, shackles, and towing hawsers could prove hazardous.

There are other cases when wearing an immersion suit may actually interfere with activities necessary to save the vessel. Some examples include: going aloft to make repairs to rigging or tackle; transferring fish; operating small boats; making emergency repairs; carrying out damage control or dewatering procedures; or, fighting a fire. In these and other cases an immersion suit is probably not the PFD of choice.

Immersion suits are designed for the abandon ship situation, and while they are theoretically designed to permit functions such as holding a pencil or operating a radio, they are extremely awkward to work in. If all efforts to save your vessel have failed, it is time to don your immersion suit and abandon the vessel – to the liferaft, we hope.

Because there are many situations where an immersion suit is not the appropriate device, it is recommended that all vessels be equipped with life jackets (PFDs) for all persons on board. The prudent mariner should equip his vessel with both immersion suits and appropriate PFDs, including exposure coveralls, in order to provide for maximum crew safety and comfort. If you still have PFDs on board, keep them on board. If you took them home, bring them back. Remember all PFDs (and suits) should be equipped with a CG Approved PFD light that works. For those times when it is necessary to work aloft or on the foredeck it is recommend that vessels are equipped with exposure coveralls (Type V PFD) for personnel working in hazardous areas.

7 RING LIFE BUOYS

This chapter applies to any and all fishing industry vessels.

Each fishing industry vessel must be equipped with the throwable flotation device(s) specified below:

VESSEL LESS THAN 16 FEET: none required.

VESSEL 16 FEET OR MORE, BUT LESS THAN 26 FEET:
- 1 Type IV PFD, either a buoyant cushion or USCG approved ring buoy.
- A ring buoy must be equipped with a line at least 60 feet long.

VESSEL 26 FEET OR MORE, BUT LESS THAN 65 FEET:
- 1 Approved Ring Buoy (Approval No: 160.009 or 160.050)
- Orange in color.
- At least 24 inches in diameter.
- At least one ring buoy must be equipped with a line at least 60 feet long.

VESSEL 65 FEET OR MORE:
- 3 Approved Ring Buoys (Approval No: 160.050)
- Orange in color.
- At least 24 inches in diameter.
- At least one ring buoy must be equipped with a line at least 90 feet long.

NOTE: On a vessel **less than 65 feet in length**, a CG Approved Ring Buoy of 20 inches in diameter or more, regardless of color (white or orange), which is in serviceable condition and which was installed on board before 15 September 1991, may be used to meet the requirements outlined above.

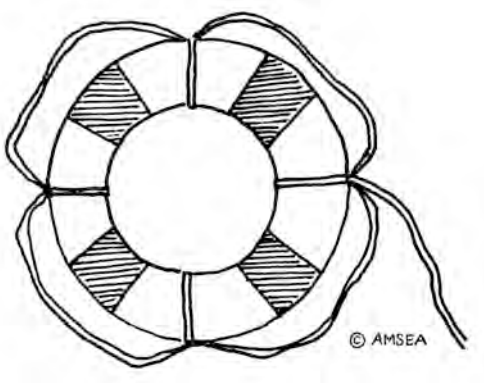
Also certain Type V PFDs are approved for use in substitution for Type IV PFDs, when used in accordance with the conditions stated in the CG approval label.

MARKING

Ring buoys must to be marked with the name of the vessel in block capital letters.

RETROREFLECTIVE MATERIAL

Ring buoys must be equipped with approved retroreflective material 2 inches wide fitted around or on both sides of the buoy at four evenly spaced points.



LIFELINE

The regulations do not state what size or type of line is required on ring buoys. But, the Coast Guard recommends that the line be **buoyant; non-kinking; at least 5/16" (8 mm) diameter;** have a **breaking strength of not less than 1100 lbs;** if synthetic, lines should be a **dark color**, or a type which is resists deterioration in sunlight.

STORAGE

Ring buoys and throwable devices should be stowed on open decks, **readily accessible** and mounted so that they can be quickly cast loose in case of emergency. Do not secure to the vessel in any way. Brackets should be designed to allow ring buoys to float free of a sinking vessel.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.115 and NVICs 1-87 and 1-92.

8 SURVIVAL CRAFT

This chapter applies to any and all fishing industry vessels.

Commercial fishing industry vessels both documented and state-numbered are required to be equipped with survival craft when operating on designated waters. What you need depends on whether or not you are documented, where you are operating, vessel size, and number of persons on board. See definitions (Section 2) for “Boundary Line”, “length”, and “cold water”.

Survival Craft *Documented Vessels*

Area of operation	Vessel type	Survival craft required
Beyond 50-miles of coastline	All	Inflatable liferaft with SOLAS A pack (CG Approval No.160.151)
Between 20-50 miles of coast line **cold** waters	All	Inflatable liferaft with SOLAS B pack (CG Approval No.160.151)
Between 20-50 miles of coast line **warm** waters	All	Inflatable liferaft (CG Approval No. 160.051)
Beyond Boundary Line, between 12-20 miles of coast line **cold** waters	All	Inflatable liferaft (CG Approval No. 160.051)
Beyond Boundary Line, within 12 miles of coastline, **cold** waters	36-feet or more in length	Inflatable buoyant apparatus* (CG Approval No. 160.010)
Beyond Boundary Line, within 12 miles of coastline, **cold** waters	Less than 36-feet in length	Buoyant apparatus* (CG Approval No. 160.010)
Beyond Boundary Line, within 20 miles of coastline, **warm** waters	All	Life float* (CG Approval No. 160.027)
Inside Boundary Line, **cold** waters; or Lakes, bays, sounds, **cold** waters; or Rivers, **cold** waters	36-feet or more in length	Inflatable buoyant apparatus* (CG Approval No. 160.010)
Inside Boundary Line, **cold** waters; or Lakes, bays, sounds, **cold** waters; or Rivers, **cold** waters	Less than 36-feet in length	Buoyant apparatus* (CG Approval No. 160.010)
Inside Boundary Line, **warm** waters; or Lakes, bays, sounds, **warm** waters; or Rivers, **warm** waters	All	None
Great Lakes, **cold** waters	36-feet or more in length	Inflatable buoyant apparatus* (CG Approval No. 160.010)
Great Lakes, **cold** waters	Less than 36-feet in length	Buoyant apparatus * (CG Approval No. 160.010)
Great Lakes, beyond 3-miles of coastline, **warm** waters	All	Buoyant apparatus* (CG Approval No. 160.010)
Great Lakes, within 3-miles of coastline, **warm** waters	All	None

*****NOTE: A vessel *less than 36 feet in length* that carries 3 or less persons within 12-miles of the coastline is not required to carry survival craft; a vessel of more than 36-feet operating with 3 or less persons within 12-miles of the coastline may substitute a buoyant apparatus for the required survival craft.

Survival Craft *Undocumented Vessels not more than 16 POB*

Area of operation	Vessel type	Survival craft required
Beyond 20-miles of coastline	All	Inflatable buoyant apparatus*. (CG Approval No. 160.010)
Beyond Boundary Line, between 12-20 miles of coast line **cold** waters	All	Inflatable buoyant apparatus* (CG Approval No. 160.010)
Beyond Boundary Line, within 12-miles of coastline, **cold** waters	36-feet or more in length	Buoyant apparatus* (CG Approval No. 160.010)
Beyond Boundary Line, within 12-miles of coastline, **cold** waters	Less than 36-feet in length	Buoyant apparatus* (CG Approval No. 160.010)
Beyond Boundary Line, within 20-miles of coastline, **warm** waters	All	Life float* (CG Approval No. 160.027)
Inside Boundary Line, **cold** waters; or Lakes, bays, sounds, **cold** waters; or Rivers, **cold** waters	36-feet or more in length	Buoyant apparatus* (CG Approval No. 160.010)
Inside Boundary Line, **cold** waters; or Lakes, bays, sounds, **cold** waters; or Rivers, **cold** waters	Less than 36-feet in length	Buoyant apparatus* (CG Approval No. 160.010)
Inside Boundary Line, **warm** waters; or Lakes, bays, sounds, **warm** waters; or Rivers, **warm** waters	All	None
Great Lakes, **cold** waters	All	Buoyant apparatus* (CG Approval No. 160.010)
Great Lakes, beyond 3-miles of coastline, **warm** waters	All	Buoyant apparatus* (CG Approval No. 160.010)
Great Lakes, within 3-miles of coastline, **warm** waters	All	None

*****NOTE: A vessel *less than 36 feet in length* that carries 3 or less persons within 12-miles of the coastline is not required to carry survival craft; a vessel of more than 36-feet operating with 3 or less person within 12-miles of the coastline may substitute a buoyant apparatus for the required inflatable buoyant apparatus.

Survival Craft *Undocumented Vessels more than 16 POB*

Area of operation	Vessel type	Survival craft required
Beyond 50-miles of coastline	All	Inflatable liferaft with SOLAS A pack (CG Approval No.160.151)
Between 20-50 miles of coast line **cold** waters	All	Inflatable liferaft with SOLAS B pack (CG Approval No.160.151)
Between 20-50 miles of coast line **warm** waters	All	Inflatable liferaft (CG Approval No. 160.051)
Beyond Boundary Line, between 12-20 miles of coast line **cold** waters	All	Inflatable liferaft (CG Approval No. 160.051)
Beyond Boundary Line, within 12 miles of coastline, **cold** waters	36-feet or more in length	Inflatable buoyant apparatus (CG Approval No. 160.010)
Beyond Boundary Line, within 12 miles of coastline, **cold** waters	Less than 36-feet in length	Buoyant apparatus (CG Approval No. 160.010)
Beyond Boundary Line, within 20 miles of coastline, **warm** waters	All	Life float (CG Approval No. 160.027)
Inside Boundary Line, **cold** waters; or Lakes, bays, sounds, **cold** waters; or Rivers, **cold** waters	36-feet or more in length	Inflatable buoyant apparatus (CG Approval No. 160.010)
Inside Boundary Line, **cold** waters; or Lakes, bays, sounds, **cold** waters; or Rivers, **cold** waters	Less than 36-feet in length	Buoyant apparatus (CG Approval No. 160.010)
Inside Boundary Line, **warm** waters; or Lakes, bays, sounds, **warm** waters; or Rivers, **warm** waters	All	None
Great Lakes, **cold** waters	36-feet or more in length	Inflatable buoyant apparatus (CG Approval No. 160.010)
Great Lakes, **cold** waters	Less than 36-feet in length	Buoyant apparatus (CG Approval No. 160.010)
Great Lakes, beyond 3-miles of coastline, **warm** waters	All	Buoyant apparatus (CG Approval No. 160.010)
Great Lakes, within 3-miles of coastline, **warm** waters	All	None

*****NOTE: For ALL Documented or undocumented (state numbered) vessels, a survival craft higher in the hierarchy may be substituted for any survival craft required in the previous tables. The hierarchy of survival craft in descending order (highest first) is: lifeboat, liferaft with SOLAS A pack, inflatable liferaft with SOLAS A pack, liferaft with SOLAS B pack, inflatable liferaft with SOLAS B pack, inflatable liferaft with Coastal Service pack, inflatable buoyant apparatus, life float, buoyant apparatus.

GRANDFATHERING

A non-Coast Guard approved survival craft installed on board before September 15, 1991, may continue to be used if:

- It is of the same type required (see tables)
- It is maintained in good and serviceable condition
- Outfitted with the required equipment pack
- Serviced annually by a Coast Guard approved service center

SUBSTITUTION / EXEMPTION

A lifeboat may be substituted for any survival craft required, **provided** it is arranged and equipped in accordance with Coast Guard regulations in 46 CFR Part 199.

An auxiliary craft regularly carried on board as part of **necessary equipment for fishing operations** will meet the requirements for survival craft, **provided** that it is readily accessible during an emergency and capable of holding all individuals on board. Loading may not exceed the rated capacity of the craft. You may **not** substitute an auxiliary craft if you are required to carry an **inflatable liferaft**.

A vessel of less than 36-feet in length that meets the flotation provisions of 33 CFR 183 (Recreational Vessel Standards) is exempt from the survival craft requirement for operation on waters within 12-miles of the coastline, and rivers.

STORAGE

Inflatable liferafts equipped with SOLAS A or B equipment packs must be stored so that they will float free and automatically inflate if the vessel sinks.

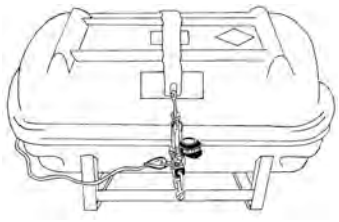
Other inflatable liferafts, inflatable buoyant apparatus, and any auxiliary craft used as survival craft must be kept readily accessible for launching or be stowed so as to float-free in the event the vessel sinks.

Each hydrostatic release used as part of a float-free arrangement must be Coast Guard approved under part 160, subpart 160.062.

Each float-free link used with a buoyant apparatus or life float must be certified to meet part 160, subpart 160.073.

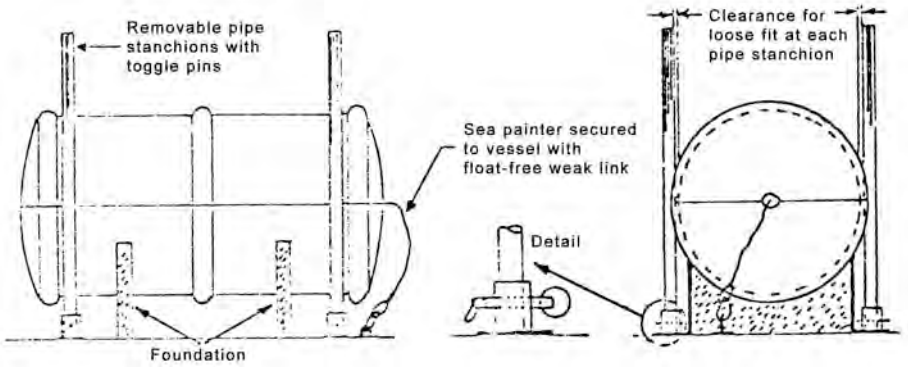
Stowage of a liferaft can be a challenge, particularly on smaller fishing vessels. The raft must be secured to the vessel, yet able to float free. Inflatable liferafts should be stowed where they will float free; clear of all rigging, overhangs and gear. Do not stow near exhaust stacks. Heat and exhaust gases will deteriorate the rubber sealing gaskets allowing corrosive salt spray and exhaust gases to enter the container. This can damage the raft and equipment, particularly the compressed gas firing mechanism.

There are several stowage methods that secure the raft, provide for rapid launching and allow the raft to float free in the event of rapid sinking or capsizing. These methods do not require the use of any tools to launch the raft.



Installations using a hydrostatic release are designed for both manual launching and automatic release at a predetermined depth.

Liferafts can also be stowed using a float-free rack, eliminating the need for a hydrostatic release. Several liferaft manufacturers market float-free racks specifically for their rafts. A float-free rack can be easily constructed of four to six pipe uprights that surround the container. The pipes must be loose fitting at the bottom, so they may be easily removed for manual launching of the raft. For the raft to float-free there must be adequate clearance between the pipes and the raft container. The pipes should be tall enough to prevent the raft from accidentally going overboard in a seaway.



In a float-free installation, the liferaft painter must be secured to the deck or to the hydrostatic release, depending on the type of float-free arrangement. If no hydrostatic release is used the painter must be secured to the deck and be equipped with a "weak link", which is designed to break allowing the raft to float to the surface.

It is recommended that the facility servicing your raft go over the installation of the raft on board the vessel in order to ensure that the weak-link and hydrostatic release are properly installed, and that the crew is familiar with the operation of the raft.

SERVICING

Inflatable liferafts and inflatable buoyant apparatus must be serviced annually. A new inflatable liferaft has an initial two-year service interval from the date of the first packing, indicated on the servicing sticker.

This equipment should only be serviced by a facility that is authorized by the manufacturer and approved by the Coast Guard. Manufacturers can provide you with a list of facilities authorized to service their products. If you have any question regarding the qualifications of a service facility, ask for copies of authorizing documents, contact the manufacturer or the Coast Guard Sector Office in your area. Inflatable liferafts serviced by unauthorized facilities have been known to fail with tragic consequences.

You and your crew should attend the servicing of your liferaft, at the service facility, in order to become familiar with the raft and its equipment.

INSTRUCTIONS and DRILLS

Liferaft instructions placards should be posted in prominent locations (such as the pilot house and galley) where the crew can review them. Please see Chapters 35, 36, 37, for information on Instructions and Drills.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.120, 46 CFR 28.125 and NVICs 7-91 and 1-92, including changes 1 and 2.

9 MARKING and MAINTAINING LIFESAVING EQUIPMENT

This chapter applies to any and all fishing industry vessels.

Ring life buoys, EPIRBs, buoyant apparatus, life floats and auxiliary craft carried as lifesaving equipment must be identified with the **vessel name.** The marking must be in block capital letters. Again, it is recommended that they be at least one inch in height, in a contrasting color.

State numbered vessels, which do not have a name, may use the state registration number when marking lifesaving equipment, including: PFDs, immersion suits, ring buoys, EPIRBs and survival craft.

An inflatable liferaft or inflatable buoyant apparatus needs no marking other than that provided by the manufacturer or service facility.

Lifesaving devices must also be equipped with approved retroreflective material. There are two types of approved (Coast Guard approval series 164.018) retroreflective material: Type I material is used on flexible and rigid surfaces, **except** rigid surfaces that are constantly exposed to sun and weather; Type II is a weather resistant material used on constantly exposed surfaces, such as ring buoys and EPIRBs. Type I material is usable on wearable PFDs, immersion suits, or exposure suits. Type II material is required on all other lifesaving equipment.

Buoyant apparatus and life floats are also required to have two-inch strips of retroreflective material installed near the center of each side and each end extending over both top and bottom of the device

406 EPIRBs are equipped with retroreflective material **by the manufacturer**, and should not need additional material. But, should material be removed for any reason it should be replaced with Type II material as required.

Marking and retroreflective material coverage requirements for PFDs, immersion suits and ring buoys are listed in chapters 4, 5, 6 respectively.

MAINTENANCE OF EQUIPMENT

Masters of fishing industry vessels are reminded that they "must ensure that each item of lifesaving equipment is in good working order, ready for immediate use, and readily accessible **before** the vessel leaves port and at all times when the vessel is operated." The Master should make a practice of checking the condition and readiness of all lifesaving equipment before the vessels leaves for a trip.

Lifesaving equipment must be maintained according to the schedule set forth in Table 28.140 of the fishing vessel safety regulations – as follows:

> **Annual servicing:** Inflatable (Type V Commercial Hybrid) PFDs, inflatable liferafts, inflatable buoyant apparatus and mechanical hydrostatic releases for liferafts. With the exception of inflatable PFDs, all servicing must be performed by a facility approved by Coast Guard.
>
> **Annually inspect, clean and repair as necessary:** PFDs (Type I, II, III and IV), immersion suits, buoyant apparatus and life floats.

Replace on or before expiration date: Disposable hydrostatic releases (found on most 406 EPIRBs, and new liferaft installations); and dated batteries.

Replace annually: Undated batteries.

Test monthly: 406 EPIRBs.

ESCAPE ROUTES

In addition, the fishing vessel safety regulations specifically require that escape routes – from work areas or accommodation spaces – not be obstructed. Before the vessel leaves port and during the voyage the Master should ensure that escape routes are not locked or blocked by equipment or debris.

SOURCES: 46 U.S.C. 4502, 46 CFR 26-50, 46 CFR 28.135, and 46 CFR 28.140

10 VISUAL DISTRESS SIGNALS (VDS)

This chapter applies to any and all fishing industry vessels.

Vessels must be equipped with the Visual Distress Signals (VDS) as specified below:

OCEAN, more than 50 miles from the coastline.

3 SOLAS parachute flares (CG approval series 160.136)
6 SOLAS hand flares (CG approval series 160.121)
3 SOLAS smoke signals (CG approval series 160.122)

OCEAN, 3 miles to 50 miles from coastline;
GREAT LAKES more than 3 miles from the coastline.

3 parachute flares (CG approval series 160.136 or 160.036)
6 hand flares (CG approval series 160.121 or 160.021)
3 smoke signals (CG approval series 160.122, 160.022 or 160.037)

NOTE: The VDS kits described above are **not** the same as those currently available for recreational vessels. Kits specifically for fishing industry vessels are available at fishing gear supply stores, or liferaft servicing facilities.

COASTAL WATERS;
GREAT LAKES within 3 miles of coastline.

Night signals:	3 CG Approved flares, **or**
	One Electric Distress Light (CG approval series 161.013).
Day signals	3 CG Approved flares, **or**
	3 CG Approved smoke signals, **or**
	One Distress Flag (CG approval series 161.072).

NOTE**:** If flares are carried, the same 3 flares may be counted toward meeting both the day and night signal requirement.


Parachute flare


Handheld flare


Meteor flare


Smoke canister

STORAGE

It is recommended that Visual Distress Signals be stored where they are readily available for use in an emergency. Flares should be kept in a waterproof container (an “ammunition” box works well), and stored in a cool, dry place. Reflective labels are available and recommended to mark storage containers.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.145.

11 EPIRBs

This chapter applies to any and all fishing industry vessels.

DEFINITIONS

EPIRB regulations include definitions to be used in conjunction with the determination of requirements for EPIRBs.

"Berthing space" means a space that is intended to be used for sleeping and is provided with installed bunks and mattresses.

"EPIRB" means an Emergency Position Indicating Radio Beacon which is "Type Accepted" by the Federal Communications Commission under requirements in 47 CFR parts 2 and 80.

"Galley" means a space that provides for the preparation and extended storage of food. This does not include small alcohol or propane stoves with limited cooking capability, or ice chests or similar devices that are intended for keeping small quantities of food for short durations.

"High seas" means the waters beyond a line three nautical miles seaward of the Territorial Sea Baseline as defined in 33 CFR 2.05-10.

"Length" means the length listed on a vessel's Certificate of Documentation or Certificate of Number.

"Uninspected passenger vessel" means a vessel which, when used for commercial service, is used solely to carry passengers for hire or to provide non-emergency assistance to boaters (assistance towing), and which is not inspected by the Coast Guard under any other 46 CFR subchapter.

> NOTE: As an example, a vessel on a voyage involving catching fish which are to be sold, is a commercial fishing industry vessel for the purposes of the EPIRB regulations in this section, even if there are passengers on board during the voyage."

EPIRB REQUIREMENTS FOR COMMERCIAL FISHING INDUSTRY VESSELS

Commercial fishing industry vessels operating on the high seas, or beyond three miles from the coastline in the Great Lakes are required to carry a 406 MHz EPIRB as follows:

Vessels **36 feet or more** in length with or without galley or berthing facilities shall be equipped with a float-free, automatically activated Category 1, 406 MHZ EPIRB stowed in a manner so that it will float free if the vessel sinks.

Vessels **36 feet or more in length with sufficient inherently buoyant material** to keep the flooded vessel afloat (the builder must provide certification regarding the buoyancy) shall have installed in a readily accessible location at or near the principal steering station **either** a manually activated Category 2, 406 MHZ EPIRB; **or** a float-free, automatically activated Category 1, 406 MHZ EPIRB.

Vessels **less than 36 feet in length** shall have installed in a readily accessible location at or near the principal steering station **either** a manually activated Category 2, 406 MHZ EPIRB; **or** a float-free, automatically activated Category 1, 406 MHZ EPIRB.

TESTING AND SERVICING OF EPIRBs

The Master of a vessel required to have an EPIRB on board must ensure that the EPIRB is tested immediately after installation, and at least once each month thereafter. EPIRBs installed in a Coast Guard approved inflatable liferaft must be tested annually during servicing of the liferaft by an approved facility. All testing must be carried out in accordance with the manufacturer's instructions. EPIRBs that are not operating properly must be repaired or replaced.

The battery of an EPIRB must be replaced before the expiration date marked on the battery, or immediately after the EPIRB is used for any purpose other than testing.

EXEMPTIONS

A skiff or workboat is not required to carry an EPIRB if its "mother ship" is required to carry an EPIRB, **and** the skiff or workboat is carried on board the mother ship when it is not in use.

A Coast Guard District Commander may grant exemptions from the EPIRB requirements on a case-by-case basis for certain geographical areas within the boundaries of the district.

REGISTRATION

All 406 MHz EPIRBs must be registered with NOAA (National Oceanic and Atmospheric Administration). Registration is now available on line at www.beaconregistration.noaa.gov. There is no fee for registration. If you have any questions about beacon registration, you may call 301-817-4515 or toll-free at 1-888-212-SAVE (7283) or check www.sarsat.noaa.gov/.

An EPIRB carriage requirement by itself does not mean you have to have an FCC Ship Radio Station License. However, if your vessel is documented and you operate beyond the boundary line, you will have certain communication equipment requirements that also means you have to have a ship station license. Please don't forget to modify your FCC Station License (if required) to include your EPIRB. Failure to do so can result in a civil penalty assessment by the FCC.

THE CARE AND MAINTENANCE OF YOUR 406 EPIRB

Category 1, 406 EPIRBs provide superior reliability, signal strength, location accuracy, and detailed information to Search and Rescue (SAR) units when they are installed, used and serviced as required and recommended. Follow these steps to be sure they work when you need them.

INSTRUCTIONS
Read the instructions for mounting and operating your EPIRB carefully. EPIRBs do not come shipped in the ON position. It is important to learn the correct switch position for arming the EPIRB after it is installed.

LOCATION
Mount your EPIRB in a location on the vessel that will allow it to float-free in the event your vessel were to sink and where icing will be minimal. Avoid locating it under an overhang or in a location where it could get hung up.

TEST
Test your EPIRB once per month. 406 EPIRBs have an electronic self-check. Make sure that you follow the testing procedures in your manual. Test in the first 5 minutes of any hour.

All EPIRB tests should be noted in your log book. (You are keeping a log book aren't you?)

CHECK FOR DAMAGE
Check your EPIRB during rough sea conditions to make sure that it has not been activated or damaged.

SHOW AND TELL
Explain to all crewmembers how the EPIRB operates before you get underway. This should be part of your drills and instructions. (You are conducting drills aren't you?)

MAINTENANCE SCHEDULE
Your EPIRB battery may be good for 2 to 5 years, but the hydrostatic release mechanism needs to be replaced every two years. Check the expiration dates on the battery and hydrostatic release and follow the maintenance schedule on the release for your EPIRB.

MAKE SURE IT IS TURNED ON
Above all, before leaving the dock, make sure your EPIRB is in the automatic “ON” position ready to float-free in the event of an emergency. Check your EPIRB periodically during the trip to ensure it is ready to work for you.

SOURCES: 46 U.S.C. 4502, 46 CFR 25.26, 46 CFR 28.140 and 46 CFR 28.150

12 PORTABLE FIRE EXTINGUISHERS

This chapter applies to any and all fishing industry vessels.

The portable fire extinguisher requirements set forth in the fishing vessel safety regulations are applicable to ALL commercial fishing industry vessels, including fishing industry vessels that are **not** propelled by machinery (sail vessels or barges). The minimum number of fire extinguishers required is listed in the following tables. Required equipment must be Coast Guard approved for marine application. Additional fire detection and protection equipment may be installed provided that the excess equipment does not endanger the vessel or persons on board. Currently, extinguishers in excess of the requirement do not have to be Coast Guard approved but must, at a minimum, be listed and labeled by an independent, recognized testing laboratory. They must meet industry standards for design, installation, testing and maintenance.

MINIMUM FIRE EXTINGUISHER REQUIREMENTS FOR FISHING VESSELS *LESS THAN* 65' INCLUDING SAIL VESSELS

Vessel Length	**B-I**	**B-II**
Under 16'	1 *Note	0
16' – under 26'	1 *Note	0
26' – under 40'	2 or	1
40' to 65'	3	
or 40' to 65'	1	1

Vessels may carry one less B-I if an approved fixed fire extinguishing system is installed in the machinery space.

*NOTE: None required if vessel is: *outboard* powered, less that 26 feet and 'open construction'; HOWEVER, if any of the following conditions exist a fire extinguisher is required:

1. Closed compartments under thwarts and seats in which portable fuel tanks may be stored.
2. Double bottoms not sealed to the hull or which are not completely filled with floatation material.
3. Closed living spaces.
4. Closed stowage compartments in which combustible or flammable materials are stowed.
5. Permanently installed fuel tanks.

The following conditions DO NOT, in themselves, require that fire extinguishers be carried: bait wells; glove compartments; buoyant floatation material; open slatted flooring; or ice chests.

PORTABLE FIRE EXTINGUISHERS FOR VESSELS *65 FEET OR MORE* IN LENGTH

Space	Classification	Quantity & Location
Safety areas, communicating corridors	A-II	1 in each main corridor not more that 150-feet apart (OK in stairways)
Pilothouse	C-I	2 in vicinity of exit
Service spaces, galleys	B-II or C-II	1 per 2,500 sq. ft. or fraction thereof suitable for the hazards involved
Paint lockers	B-II	1 outside the space in vicinity of exit.
Accessible baggage storerooms	A-II	1 per 2,500 sq. ft. or fraction thereof located in the vicinity of exits, either inside or outside the space
Workshops and similar spaces	A-II	1 outside the space in vicinity of exit.
Machinery spaces; Internal combustion propelling machinery	B-II	1 for each 1,000 brake horsepower (BHP) or fraction thereof; not less than 2 or more than 6.
Electrical propulsion motors or generators of open type	C-II	1 for each propulsion motor generator unit.
Auxiliary spaces	B-II	1 outside the space in vicinity of the exit.
Internal combustion machinery	B-II	1 outside the space in vicinity of the exit
Electrical emergency motors or generators	C-II	1 outside the space in vicinity of the exit.

The minimum number of B-II fire extinguishers on motor vessels 65 feet or more in length must also meet the number required under the rules as shown in the following table:

MINIMUM NUMBER OF B-II FIRE EXTINGUISHERS REQUIRED ON FISHING VESSELS *65 FEET ON MORE* IN LENGTH, INCLUDING SAIL VESSELS

Gross Tonnage		Minimum Number of B-II Portable Fire Extinguishers
Over	But Not Over	
–	50	1
50	100	2
100	500	3
500	1,000	6
1,000	Unlimited	8

Vessels over 300 gross tons must be fitted with either a B-III semi-portable fire extinguisher or an approved fixed fire extinguishing system installed in the machinery space.

SHARING EXTINGUISHERS

In determining the number of fire extinguishers required for a vessel, 65 feet or more in length, it is important to understand that in many instances a requirement can be shared. That is a "work shop" that is adjacent to a "machinery space" could share an extinguisher providing it is an AB-II. Similarly an "electric generator unit" requiring a C-II could share a BC-II unit installed in the "machinery space".

SUGGESTIONS

Consider getting ABC-II extinguishers when purchasing new fire extinguishers for your vessel, so that extinguishers can serve more than one space.

Keep in mind that Halon systems are being phased out because of their adverse impact on the environment.

STANDARD REQUIREMENTS

All fire extinguishers must be clearly marked with a permanent name plate showing Coast Guard and/or UL approval or listing for marine use. Fire extinguishers must be restrained with the approved bracket that comes with the equipment, or a properly fitting marine or non-corrosive motor vehicle-type mounting bracket. Extinguishers must be in GOOD and SERVICEABLE condition, meaning that they are within the weight and/or pressure limits and free of leaks or damage. It is the responsibility of the owner/operator to demonstrate to the Coast Guard that all fire extinguishers on board are in good and serviceable condition and meet the minimum requirements. Extinguishers must be inspected and tested in accordance with the industry standards applicable to that device.

FIRE EXTINGUISHERS – CLASSIFICATION

Each fire extinguisher is classified, by letter and Roman numeral, to indicate the type of fire it could be expected to extinguish, and the size of the extinguisher. The "letter" indicates the TYPE of FIRE. The Roman numeral indicates the size of the extinguisher.

A – Fires involving common combustible materials - wood, cloth, paper, rubber and some plastics.

B – Fires involving flammable or combustible liquids, flammable gases, grease and similar products.

C – Fires involving energized electrical equipment, conductors or appliances.

D – Fires involving combustible metals including such metals as sodium, potassium and magnesium.

The number designations for extinguishers range from “I” to “V”. Sizes I and II are hand-portable fire extinguishers. Sizes III, IV, and V are semi-portable fire extinguishing systems.

Fire extinguishers approved for commercial fishing vessels are hand-portable, ABC-I and II, and semi-portable ABC-III classifications.

COAST GUARD APPROVED portable fire extinguishers can be identified by any one of the following methods:

1. If the extinguisher was manufactured prior to January 1, 1962, contact the local Coast Guard Marine Safety Office to find out if the manufacturer's name and model number is on the approved "Equipment List" (COMDINST M16714.3).

2. If the extinguisher was manufactured between January 1, 1962 and January 1, 1965, it will be labeled: "MARINE USCG TYPE __ SIZE __".

3. If the extinguisher was manufactured after January 1, 1965, it will be labeled: MARINE USCG TYPE __ SIZE __ APPROVAL NUMBER 162.028/__/__".

UL (Underwriters Laboratory) LISTED extinguishers with a manufacturing date of 1972 or later, (the year of manufacture can be found on the label, valve or cylinder), **may** be substituted for Coast Guard approved extinguishers using the following table. **ALL** TYPE B extinguishers must have a UL 5-B:C or higher rating, such as UL 10 B:C. (See NVIC 13-86)

CORRESPONDING UL SIZES

US Coast Guard Classification		Dry Chemical	CO2	Halon 1211/1301	Foam
Type	**Size**	**Lbs**	**Lbs**	**Lbs**	**Gallons**
B	I	2	5	2 ½	1 ¼
B	II	10	15	10	2 ½
B	III	20	35	–	12
B	IV	30	50	–	20
B	V	50	100	–	40
C	I	2	5	2 ½	–
C	II	10	15	10	–
C	III	20	35	–	–
C	IV	30	50	–	–

SOURCES: 46 U.S.C. 4102, 46 U.S.C. 4502, 46 CFR 25.30, 46 CFR 28.155, 46 CFR 28.160 and NVIC 13-86

13 BACKFIRE FLAME ARRESTER REQUIREMENTS

This chapter applies to any and all fishing industry vessels.

Each gasoline engine, **except** outboard motors, must be equipped with an acceptable means of backfire flame control. Coast Guard approved backfire flame arresters have approval numbers 162.015 and 162.041 **or** an arrester complying with SAE J-1928 or UL 1111, **or** bear a label indicating that the Coast Guard has approved the use of the engine without an arrester are acceptable.

The arrester grid must be securely attached to the housing and the housing securely attached to the air intake. All fittings must be flame tight, and all screens clean and free of foreign matter.

EXCEPTIONS

1. Air and fuel induction systems with Coast Guard approval numbers 162.015 or 162.042 may continue to be used as long as they are in good and serviceable condition.

2. Installation of backfire flame arresters made before November 19, 1952 need not meet Coast Guard requirements, and may continue to be used as long as they are in good and serviceable condition. **Note:** Automobile air breathers and containers with steel wool are NOT acceptable.

"Good and serviceable condition" means that the flame arrester is clean and free of foreign matter, holes and/or tears.

Any new installation or replacement must be Coast Guard approved or SAE or UL accepted.

SOURCES: 46 U.S.C. 4102, 46 CFR 25.35, 46 CFR 58.10

14 VENTILATION REQUIREMENTS

This chapter applies to any and all fishing industry vessels.

All vessels, except "open boats", using gasoline as a fuel and/or other fuels having a flash point of 110 degrees F. or less, must have at least two ventilator ducts fitted with cowls or their equivalent for the purpose of properly and efficiently ventilating the bilges of each engine and fuel tank compartment.

There shall be at least one exhaust duct installed extending to the lower portion of the bilge and at least one intake duct installed extending to a point midway to the bilge or below the level of the carburetor air intake.

The cowls shall be located and trimmed for maximum effectiveness to prevent displaced fumes from being re-circulated.

The term "open boat" (vessel) means those vessels with all engine and fuel tank compartments, and other spaces to which explosive or flammable gases and vapors from these compartments may flow, open to the atmosphere and arranged as to prevent the entrapment of such gases and vapors within the vessel.

Three conditions must be met in order to consider an engine or fuel tank compartment open to the atmosphere (an "open compartment") that is exempt from federal ventilation requirements.

1. Engine and fuel tank compartments shall have a minimum of 15 square inches of open space directly exposed to the atmosphere for each cubic foot of net compartment volume.

2. There must be no long or narrow unventilated spaces accessible from such compartments in which a flame could move.

3. Long narrow compartments (such as side panels) if joining engine or fuel tank compartments and not serving as ducts to the engine or fuel compartment must have at least 15 square inches of open area per cubic foot provided by openings in the compartment along its entire length.

RECOMMENDATIONS FOR VENTILATION SYSTEMS

Fire and explosion are a leading cause of fishing vessel losses. Fuel vapors are heavier than air; gasoline vapors are extremely explosive. This is why ventilation systems are required on all vessels using gasoline as fuel, and recommended for other vessels.

There is no such thing as a ventilation system 'approved' by the Coast Guard, nor has any foolproof ventilation system been developed. Many factors – shape and size of cowls and ducts, the location of the system components, capacity of blowers and choice of materials – affect the efficiency of a ventilation system.

Experience, research and testing have led to the following recommendations by the Coast Guard and the boat building industry.

RECOMMENDED SPECIFICATIONS FOR VENTILATION SYSTEMS

Intake (Air Supply) – To scavenge vapor from the ventilated spaces and avoid undesirable turbulence within the spaces, there should be one or more intake ducts into each fuel and engine compartment, fitted with a cowl (scoop) extending from the open atmosphere to a level midway to the bilge (fuel compartment) or to at least below the level of the carburetor (engine compartment).

Exhaust – There should be one or more exhaust ducts from the lower portion of the bilge of each fuel and engine compartment to the open atmosphere, fitted with a cowl of an equivalent such as the wind actuated rotary exhauster or a power exhaust blower. The exhaust ducts should not be installed so low in the bilge that they may become blocked by the normal accumulation of bilge water.

Positioning of cowls – Normally the intake cowl will face forward in an area of free airflow, and the exhaust cowl will face aft where a suction effect can be expected. They should be located with respect to each other to prevent the return of displaced vapor to an enclosed space, and to avoid the pick up of vapors from a filling station.

Carburetor air – Openings in engine compartments for the air intake to the carburetor should be in addition to the ventilation system requirements.

Ducting materials – For durability and safety, ducts should be constructed of nonferrous, galvanized or sturdy high temperature resistant, non-metallic materials (such as PVC), routed clear of and protected from contact with hot engine surfaces.

Ducting size – There should be no part of the ducting system that is smaller than the minimum cross section area required for reasonable efficiency.

SMALL VESSELS

To determine the minimum cross sectional area of the cowls and ducting for small vessels having small engine and/or fuel tank compartments, see Table I, which is based on net compartments volume.

To determine net compartment volume: multiply the length (L) of the compartment by the width (W) of the compartment, by the height (H) of the compartment. (L x W x H) To determine the volume of all the items in the compartment, multiply their respective lengths, widths and heights in the same manner as above. Then add all the items' volumes together. Take this figure and subtract it from the compartment volume figured earlier. The resulting figure is the rough net volume of the space.

TABLE I – SMALL VESSELS

	One Intake/Exhaust	Two Intakes/Exhausts	
Compartment net volume (cubic feet)	**Minimum inside diameter for each duct (inches)**	**Approximate area each duct (square inches)**	**Minimum inside diameter for each duct (inches)**
8 or less	2	3	–
10	2 ¼	4	–
12	2 ½	5	–
14	2 ¾	6	–
17	3	7	–
20	3 ¼	8	2 ½
23	3 ¼	10	2 ½
27	3 ¾	11	3
30	4	13	3
35	4 ¼	14	3
39	4 ½	16	3
43	4 ¾	19	3
48	5	20	3

LARGE VESSELS

For larger vessels, Table II, based on vessel beam, is a practical guide for determining the minimum cross sectional area of the ducts and cowls.

TABLE II – LARGE VESSELS

Vessel beam (feet)	Minimum inside diameter for each duct (inches)	Approximate area (square inches)
7	3	9
8	3 ¼	10
9	3 ½	11
10	3 ½	11
11	3 ¾	12
12	4	13
13	4 ¼	13
14	4 ¼	14
15	4 ½	14
16	4 ½	14
17	4 ½	14
18	5	16
19	5	16

Natural systems – The above features provide for ventilation without mechanical assistance. Efficiency is greatest when there is a breeze from forward of the beam, which will normally occur when underway or at anchor, and sometimes when moored. Although less efficient when the wind is abaft the beam, some scouring may still be expected.

Mechanical blowers – To provide a positive means of exhausting vapors when there is little or no movement of air (calm days), and especially before starting engines when the risk of explosion is the greatest, mechanical blowers are recommended for engine spaces. It is suggested that ducting separate from the natural ventilation system be installed. Exhaust blowers should be of the sealed or arcless type and be as high as possible if located with the compartment being ventilated. Blower fan blades or impellers should be non-sparking and if installed in the exhaust duct of the natural system, the blades should not interfere with the functioning of the ducts as natural ventilators. Exterior terminations of power exhaust ducts only may be fitted with louvered fittings instead of cowls. This does not apply to combined exhaust ducts. It is recommended that blowers be operated for at least 4 minutes before starting engines.

SOURCES: 46 U.S.C. 4102, 33 CFR 183 sub-parts J and K, 46 CFR 25.40, 46 CFR 28.340, 46 CFR 92.15, NVIC 5-86

15 INJURY REPORTING AND PLACARD REQUIREMENT

This chapter applies to any and all fishing industry vessels.

Crew members must notify the master, individual in charge of the vessel, or other agent of the employer of each illness, disability, or injury suffered while in service to the vessel not later than 7 days after the date on which the illness, disability, or injury arose.

The person who receives any injury report may be required to notify the Coast Guard or the vessel's insurance company if the injury requires medical treatment beyond first aid, renders the individual unfit to perform duties on the vessel, or incapacitates the individual for more than 72 hours. Refer to the criteria and applicable reporting requirements discussed in Section 16.

Each vessel must have an injury notice placard measuring at least 5 inches by 7 inches posted in a highly visible location accessible to the crew. The placard must read:

NOTICE

REPORT ALL INJURIES

United States law, 46 United States Code 10603, requires each seaman on a fishing vessel, fish processing vessel, or fish tender vessel to notify the master or individual in charge of the vessel or other agent of the employer regarding any illness, disability, or injury suffered by the seaman when in service to the vessel not later than seven days after the date on which the illness, disability, or injury arose.

SOURCES: 46 U.S.C. 10603, 46 CFR 28.165

16 CASUALTY REPORTING AND CHEMICAL TESTING

This chapter applies to any and all fishing industry vessels.

The requirements for reporting marine casualties or accidents have changed with the addition of **'any incident involving significant harm to the environment'.**

DOCUMENTED FISHING INDUSTRY VESSELS

CASUALTY REPORTING

The owner, agent, master, or person-in-charge of a **documented** fishing industry vessel involved in an accident shall notify, **as soon as possible,** the nearest Coast Guard Sector Office whenever a **marine casualty or accident** involves any of the following:

a) An unintended grounding, or an unintended strike of (allision with) a bridge;
b) An intended grounding, or an intended strike of a bridge, that creates a hazard to navigation, the environment, or the safety of a vessel, or that meets any criterion of paragraphs (c) through (h) below;
c) A loss of main propulsion, primary steering, or any associated component or control system that reduces the maneuverability of the vessel;
d) An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, or failure of or damage to fixed fire-extinguishing systems, lifesaving equipment, auxiliary power-generating equipment, or bilge-pumping systems;
e) A loss of life;
f) An injury that requires professional medical treatment (treatment beyond first aid) **and**, if the person is engaged or employed on board a **vessel in commercial service**, that renders the individual unfit to perform his or her routine duties;
g) An occurrence causing property-damage in excess of $25,000, this damage including the cost of labor and material to restore the property to its condition before the occurrence, but not including the cost of salvage, cleaning, gas-freeing, dry-docking, or demurrage; or,
h) An occurrence involving **significant harm to the environment**. In layman's terms this means an oil spill creating sheen on the water, or a discharge of a hazardous substance.

The notice must include: the name and official number of the vessel involved; the names of the individuals on board; the name of the vessel's owner or agent; the nature and circumstances of the casualty; the locality in which the accident occurred; the nature and extent of injury to persons (if any); and the damage to property.

You must notify the nearest Coast Guard Sector Office **as soon as possible** after the incident, and file a **written report within** 24 hours using **Coast Guard Form CG-2692** *Report of Marine Accident, Injury or Death.*

Failure to provide the above notification can result in a civil penalty of not more than $27,500.

CHEMICAL (ALCOHOL and DRUG) TESTING

In addition to the Casualty Reporting requirement, documented vessels (marine employers) must make sure that **ALCOHOL and DRUG testing after a Serious Marine Incident (SMI)** is

carried out within specified time periods. (See below for the definition of a SMI.) Each individual engaged or employed on board the vessel who is directly involved in the incident must be tested.

Alcohol testing following a SMI must be completed **within two (02) hours** of the incident unless safety concerns prevent specific individuals from being tested within the two (02) hours, in which case testing must be done as soon as possible, but no later than (08) eight hours following the incident. [46 CFR 4.06-3]

A commercial vessel that cannot get the alcohol testing done within two hours (e.g. a vessel that cannot get to a testing facility quickly) **must carry approved alcohol testing devices on board**. [46 CFR 4.06-15] (See below for more information on approved devices.)

Saliva is now an acceptable specimen for alcohol testing, in addition to blood and breath. [46 CFR 4.06-20]

Specimens for drug testing following a SMI must be collected within 32 hours of the incident in accordance with established specimen collection requirements. [46 CFR 4.06-3 and 46 CFR 4.06-15]

Marine employers must submit a report to the Coast Guard using **CG-2692B** *Report of Required Drug and Alcohol Testing*.

Approved devices – either an Evidential Breath Testing devise (EBT) or an Alcohol Screening Devise (ASD) – must be listed on the National Highway Traffic Safety Administration's (NHTSA) Conforming Products List. A list of approved devices may be obtained from the NHTSA.

As soon as a marine employer determines that an incident is a SMI or is likely to become one, steps to ensure timely drug and alcohol testing should be started. **Failure to adhere to the chemical (alcohol and drug) testing requirements may result in civil penalties of up to $5,500 for each violation.** Mariners holding USCG credentials may face suspension or revocation proceedings if they do not comply with the testing requirements.

A Serious Marine Casualty (SMI) includes the following:

- A marine casualty involving a vessel in commercial service which results in:
  - one or more deaths;
  - an injury to a non-crewmember which requires treatment beyond first-aid;
  - an injury to a crewmember which requires treatment beyond first-aid and which renders the individual unfit to perform routine vessel duties;
  - property damage in excess of $100,000;
  - the loss of an inspected vessel;
  - the loss of an uninspected vessel of 100 Gross Tons or more.

- A discharge from a commercial vessel which results in:
  - a discharge of more than 10,000 gallons of oil into the navigable waters of the U.S.;
  - a discharge of a reportable quantity of a hazardous substance into the navigable waters of the U.S., or a release of a reportable quantity of a hazardous substance into the environment of the U.S.

STATE-NUMBERED FISHING INDUSTRY VESSELS

The operator of a state-numbered fishing industry vessel must report to the authority that issues such numbers **in the state where the accident took place** if:

a) A person dies;
b) A person is injured and requires medical treatment beyond first-aid;
c) Damage to vessels and other property totals $2,000 or more, or there is a complete loss of the vessel;
d) A person disappears from the vessel under circumstances that indicate death or injury.

A report required by one of the above results must be made:

a) Within 48 hours of the occurrence if a person dies within 24 hours of the occurrence;
b) Within 48 hours of the occurrence if a person is injured and requires medical treatment beyond first-aid, or disappears from a vessel;
c) Within 10 days of the occurrence or death if not otherwise required earlier.

When the operator of a vessel cannot submit the casualty or accident report, the owner shall submit the report as otherwise required. [33 CFR 173.55]

ADDITIONAL CASUALTY REPORTING REQUIREMENTS FOR DOCUMENTED AND STATE-NUMBERED FISHING INDUSTRY VESSELS:

The fishing vessel safety regulations provide for what may be additional casualty reporting requirements by the owners, agents, operators, masters, or individuals in charge of **BOTH DOCUMENTED** and **STATE-NUMBERED** fishing industry vessels.

Except for a casualty that is reported to the Coast Guard on Form CG 2692, the owner, agent, operator, master, or individual in charge of the vessel must submit a report in accordance with the listing in paragraph (c) as soon as possible after the casualty, to the underwriter of primary insurance for the vessel or to the organization listed in paragraph (b) when ever the casualty involves any of the following:

- Loss of life;
- An injury that requires professional medical treatment, beyond first aid, and that renders the individual unfit to perform his or her routine duties;
- Loss of a vessel;
- Damage to or by a vessel, its cargo, gear, or that impairs the seaworthiness of the vessel, or that is initially estimated at $25,000.00 or more.

Each underwriter of primary insurance for a commercial fishing industry vessel must submit a report of each casualty involving that vessel to the insurance data collection organization accepted by the Commandant within 90 days of receiving notice of the casualty and whenever it pays a claim resulting from the casualty. Initial reports must be in accordance with the listing in paragraph (c). Subsequent reports must contain sufficient information to identify the casualty and any new or corrected casualty data. The underwriter must report the casualty information to:

Marine Index Bureau (a division of ISO Claim Search)
545 Washington Blvd.
Jersey City, NJ 07310-1686

Each report of casualty submitted by the owner, agent, operator, master, individual in charge of the vessel, or the insurance underwriter must include the following information:

- Name and address of the vessel owner and vessel operator, if different than the vessel owner;
- Name and address of the underwriter of primary insurance for the vessel;
- Name, registry number, call sign, gross tonnage, year of build, length, and hull material of the vessel;
- Date, location, primary cause, and nature of the casualty;
- Specific fishery, intended catch, and length of fishery opening when applicable;
- Date the casualty was reported to the underwriter of primary insurance for the vessel;
- Activity of the vessel at the time of the casualty;
- Weather conditions at the time of the casualty, if a contributing cause of the casualty;
- Damages to or by the vessel, its apparel, gear, or cargo;
- The monetary amounts paid for damages;
- Name, birth date, social security number, address, job title, length of disability, activity at the time of injury, type of injury, and medical treatment required for each individual incapacitated for more than 72 hours, or deceased as a result of the casualty;
- Name, registry number, and call sign of every other vessel involved in the casualty;
- Monetary amount paid for an injury or a death.

SOURCES: 46 U.S.C. 6104, 46 U.S.C. 6102, 33 CFR 173 subpart C, 46 CFR Part 4, 46 CFR 28.80

17 FISHING AGREEMENTS

This chapter applies to any and all fishing industry vessels.

The "Commercial Fishing Industry Vessel Safety Act of 1988" (the Act) made significant modifications and additions to the existing law regarding the collection of casualty data, crew agreements, and injury reporting.

The Act added a new chapter (106) to the marine safety statutes of the United States, i.e. the United States Code. This new chapter entitled "Fishing Voyages" provides for (a) fishing agreements; (b) recovery of wages and shares of fish under agreement; and, (c) seaman's duty to notify employer regarding illness, disability, and injury.

The provisions of Chapter 106 have been in effect since the Act was adopted in 1988, particularly those regarding fishing (crew) agreements. Some of the provisions, such as notification of injury or illness, and the posting of a placard, have been reinforced by regulation in 46 CFR Part 28.

FISHING AGREEMENTS

The master or individual in charge of a fishing industry vessel of **20 gross tons or more**, departing on a voyage from a port in the United States, is required to make a **fishing agreement in writing** with each seaman (crewmember) employed on board the vessel.

The fishing agreement shall be signed by the master **and** owner (if different) of the vessel, and the agreement shall (a) state the period of time the agreement is in effect; (b) include the terms of any wage, share, or other compensation arrangement peculiar to the fishery in which the vessel will be engaged during the period of the agreement; and c) include other agreed terms.

Crew agreements can provide the vessel owner with important information regarding a prospective crewmember, including full name, address, social security number, and telephone number, experience as a fisherman, and physical fitness for service.

SOURCES: 46 U.S.C. 10601

18 RESPONSIBILITY OF CAPTAINS

This chapter applies to any and all fishing industry vessels.

The fishing vessel safety statutes and regulations clarify additional responsibilities of the Captains (Masters or individual in charge) of fishing industry vessels.

LIFESAVING EQUIPMENT and ESCAPE ROUTES

On all fishing industry vessels, the Captain (Master or individual in charge) is responsible for ensuring that each item of lifesaving equipment is (a) in good working order, (b) ready for immediate use, and (c) readily accessible before the vessel leaves port and at all times during the voyage.

This means that the Captain should know what items of lifesaving equipment are required on board the vessel and that they are ready for use in an emergency. It is recommended that the Captain check of all the lifesaving equipment (life jackets, survival suits, liferaft, etc.) before the vessel gets underway and note the condition of all equipment in the vessel log. Equipment should be checked periodically, particularly during rough weather, to ensure that it remains ready for use. The Captain must also ensure that all equipment is maintained and inspected in accordance with the requirements set forth in 46 CFR 28.140(b).

The Captain of a vessel required to carry an EPIRB is required to test the EPIRB once each month. If the test indicates that the EPIRB is not operating it must be repaired or replaced before getting underway. The EPIRB battery must be replaced after any use, other than testing, and on or before the expiration dated marked on the battery. Tests and battery replacements should be noted in the vessel log.

The Captain of all fishing industry vessels must ensure that all escape routes from work and accommodation spaces are unlocked and unobstructed. This means keeping passageways and doors free of clutter, keeping the dogs on engine room and berthing space escape hatches free, and keeping ladders unobstructed.

INJURY AND CASUALTY REPORTING

Each person (crewmember, including the Captain) employed on a fishing industry vessel is required to notify the Captain (Master or individual in charge) of the vessel, or other agent of the employer of: each illness, disability, or injury suffered while in service of the vessel not later than seven days from the date of the occurrence of the illness, disability or injury.

The Captain (or the owner, agent) of a vessel with a casualty involving: loss of life, injury to an individual that results in incapacitation for more than 72 hours, loss of a vessel, or damage to a vessel that impairs seaworthiness or that results in damage estimated at $25,000.00 or more, is required to report the casualty, as soon as possible, to either the insurance underwriter of the vessel or the Marine Index Bureau.

The following casualties must be reported to the Coast Guard: accidental grounding; loss of main propulsion or primary steering; an occurrence that materially and adversely affects the vessels seaworthiness such as fire, flooding, or failure or damage to fixed fire extinguishing systems, lifesaving equipment, auxiliary power generating equipment, or bilge pumping system; loss of life; injury requiring professional medical treatment beyond first aid which renders the individual unfit to perform routine vessel duties; or any occurrence resulting in damage to

property in excess of $25,000.00.

CREW REQUIREMENTS

The Captain (Master or individual in charge) of a documented fishing vessel must be a United States citizen. Unlicensed seamen must be

a) a citizen of the U.S.,
b) an alien lawfully admitted to the U.S. for permanent residence, or
c) an alien allowed to be employed under the Immigration and Nationality Act (8 USC 1101 et seq.).

No more than twenty-five percent (25%) of the crew may be "alien workers" identified under (c) above unless a waiver is obtained from the Coast Guard. Thus, with a crew of four, three must be U.S. citizens or resident aliens; with a crew of nine, two could be non-resident aliens.

There are exceptions to the citizenship requirements for unlicensed seamen on vessels operating from the Commonwealth of the Northern Mariana Islands and on vessels fishing exclusively for highly migratory species.

FISHING AGREEMENTS

The Captain on a fishing industry vessel (over 20 gross tons) must make a "fishing agreement" with each person employed on the vessel. At a minimum the agreement shall (a) state the period of time the agreement is in effect, (b) include the terms of any wage, share, or other compensation arrangement during the period of the agreement, and (c) any other agreed terms. The fishing agreement may include other agreed terms as negotiated or arranged by the Captain and/or owner of the vessel. The owner of the vessel must also sign the agreement.

DRILLS AND ORIENTATION

Captains are responsible for meeting the requirement for instruction, drills and orientation. The Captain of a documented fishing industry vessel, operating beyond the boundary line, must ensure that instruction is given to each person on board; that drills are carried out at least once a month; and that new crew members, who have not received instruction or participated in drills, are given a safety orientation of the vessel before it gets underway. The Captain is not required to carry out the instruction, drills or orientation, but is required to ensure that they are carried out. *The person providing the instruction or conducting the drills must be trained in the proper procedures for conducting instruction and drills.*

Instruction may be carried out in conjunction with drills (or at other times and places), but it must ensure that each individual is familiar with their duties and responses to, at least, the following emergencies:

- Abandoning the vessel;
- Fighting a fire in different locations on board vessel;
- Recovering an individual from the water;
- Minimizing the affects of unintentional flooding (damage control);
- Launching survival craft and recovering lifeboats or rescue boats (if carried);
- Donning immersion suits and other wearable personal flotation devices;
- Donning a fireman's outfit and a self-contained breathing apparatus, if the vessel is so equipped;
- Making a voice radio distress call and using visual distress signals;
- Activating the general alarm; and
- Reporting inoperative alarm systems and fire detection systems.

Drills must be carried out: at least once a month, on board the vessel, as if there were an actual emergency. All persons on board must participate. The drill must include:

- breaking out and using emergency equipment,
- testing of all alarm and detection systems (bilge alarms, fire detection systems, general alarms, etc.),
- donning protective clothing (fireman's outfit if carried), and
- donning immersion suits if carried.

Before the vessel gets underway, the Captain must ensure that any person on board who has not received the instruction or participated in the drills outlined above, is given a safety orientation to include, at a minimum, an explanation of the required emergency instructions and a discussion of the specific items of instruction listed above.

The Captain must also ensure emergency instructions are posted or readily available as listed in 46 CFR 28.265.

SUMMARY

The Captain of a fishing industry vessel is now responsible for ensuring: that lifesaving equipment is in good working order, readily accessible and ready for immediate use; that the crew is made up of the correct number of U.S. citizens and/or resident aliens; that any casualties are reported in a timely manner; that each crew member signs a fishing agreements; and that instruction, drills and safety orientation are carried out.

Although these requirements place additional burdens on the Captain of fishing industry vessels, they clarify several areas of responsibility. For instance, it has been argued that the owner is responsible for ensuring that lifesaving equipment is in working order. While, in most cases, the owner is responsible for providing the equipment, according to the regulations, it is the responsibility of the Captain to ensure that the equipment is ready for use in an emergency. The Captain should immediately notify the owner of any equipment that is not in good working order or in need of service. The Captain must ensure that defects in equipment are corrected before the vessel sails.

If you have any concerns or questions about your duties and responsibilities under the regulations, discuss them with the owner of the vessel.

SOURCES: 46 U.S.C. 8103, 46 U.S.C. 10601, 46 CFR 4.05, 46 CFR 25.26 - 50, 46 CFR 28.80, 46 CFR 28.90,46 CFR 28.140, 46 CFR 28.150, 46 CFR 28.265, 46 CFR 28.270

19 PRACTICAL APPLICATION OF THE NAVIGATION RULES FOR VESSELS ENGAGED IN FISHING

This chapter applies to any and all fishing industry vessels.

INTRODUCTION

The primary goal of the navigation rules is prevention of collisions. Navigation lights, dayshapes and sound signaling devices are a major part of the rules, indicating the type and size of vessel, the movement of such vessels, the work a vessel is doing and the privileges and responsibilities of vessels.

The adoption of the UNIFIED RULES-80 (Inland Navigation Rules Act, 1980) for Inland Waters, Western Rivers and the Great Lakes eliminated much of the confusion that previously existed between the International Rules (COLREGS 72) and the U.S. Rules. With exception of the maneuvering signals and some special rules for the Western Rivers and the Great Lakes, the rules are now truly uniform.

The COLREGS 72 have been in effect since 1977, and vessels fitted with the lights prescribed by these rules are, as before, in compliance with the 'new' Unified Rules-80.

The Navigation Rules are international in origin; dimensions are expressed in the metric system and "length" is “overall length" (LOA).

UNLESS you operate exclusively in the limited areas where the Unified Rules-80 apply, you must outfit your vessel with the navigation lights, dayshapes and sound signals required by the COLREGS 72.

VESSELS REQUIRED TO CARRY RULES

All vessels should carry a current copy of the *Navigation Rules – International and Inland* on board. Self-propelled vessels of 12 meters (39.4 feet) or more in length are required to carry on board a current copy of the Inland Navigation Rules when operating on Inland waters (inside the COLREG line shown on the chart).

The *Navigation Rules – International and Inland* (Stock Number 050-012-00205-3) may be obtained from the: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, phone 202-783-3238 or the local GPO Book Store. Other acceptable sources for the Inland Rules are in the *American Practical Navigator* (Bowditch) and *Chapman’s Piloting Seamanship and Small Boat Handling*. You can also find it online at http://www.navcen.uscg.gov/mwv/navrules/download.htm.

PENALTY

Provisions of the COLREGS 72 and/or the Inland Rules authorize a civil penalty of up to $6,500 for each violation. The penalty is levied against the operator; however, it is *in rem* and may be levied against the vessel owner.

NAVIGATION LIGHTS – POWER DRIVEN VESSEL – COLREG/UNIFIED RULES

Lights must be displayed from sunset to sunrise, and in periods of restricted visibility including fog, mist, snow, heavy rainstorms, sandstorms or other similar conditions. Working (deck) lights

must not interfere with another person's (vessel's) ability to identify your vessel's navigation lights.

DEFINITIONS

SIDELIGHTS: Green to starboard, red to port; each arc 112.5 degrees; separate sidelights, on vessels 20 meters (65.6 feet) or more in length, must be fitted with matt black screens (inboard).

MASTHEAD LIGHT: White, 225 degrees, must be located higher than the sidelights on the centerline of the vessel, facing forward.

STERNLIGHT: White, 135-degree arc of visibility, located on the centerline of the vessel, as far aft as practical, facing aft.

ALL AROUND LIGHT: 360-degree arc of visibility, color as indicated in the rules, must not be obstructed by rigging of vessel by an arc of more than 6 degrees.

LENGTH means length overall (LOA).

BREADTH means greatest breadth.

HEIGHT ABOVE HULL means height above uppermost continuous deck.

RUNNING LIGHTS (COLREGS, Rule 23)

POWER DRIVEN VESSEL 50 METERS (164.0 feet) OR MORE IN LENGTH:

Separate sidelights; stern light; and two masthead lights in a range, higher than the sidelights; the after masthead light higher than the forward.

POWER DRIVEN VESSEL LESS THAN 50 METERS (164.0 feet) IN LENGTH:

Separate sidelights; stern light and one masthead light forward and higher than the sidelights.

ALTERNATIVE FOR POWER DRIVEN VESSELS LESS THAN 20 METERS (65.6 feet) IN LENGTH includes:

Sidelights, either separate, or in a combined lantern, carried on the fore and aft centerline of the vessel; stern light; and one masthead light forward and higher than the sidelights and "as far forward as is practicable".

NOTE: The masthead light should be switched separately from the sidelights, as a vessel being towed, and vessel (less than 50 meters) making way and engaged in fishing shall not display a masthead light.

ALTERNATIVES FOR POWER DRIVEN VESSELS LESS THAN 12 METERS (39.4 feet) IN LENGTH include:

Sidelights, either separate, or in a combined lantern, carried on the fore and aft centerline of the vessel; and either a masthead light and stern light, or an all-round white light carried on the fore and aft centerline and higher than the sidelights. A masthead light shall be "as far forward as is practicable".

> NOTE: The masthead light or all-round white light may be displaced from the fore and aft centerline, provided the sidelights are carried in a combined lantern on the fore and aft centerline or as near as practicable in the same fore and aft line as the masthead light or the all-round white light.

RUNNING LIGHTS – UNIFIED RULES ONLY, Rule 23

Vessels equipped with the lights outlined above are in compliance with all requirements for vessels operating on INLAND WATERS subject to the UNIFIED RULES. There are alternatives for vessels operating exclusively on INLAND WATERS (inside the COLREG Demarcations Lines), but since most fishing industry vessels operate at times on waters subject to the COLREGS, most vessels must be equipped in accordance with the COLREGS. If in doubt about the requirements for vessels operating exclusively on INLAND WATERS refer to the Navigation Rules, particularly Annex I.

SUMMARY – RUNNING LIGHTS

Power driven vessels operating on COLREG waters are required to carry navigation lights as described above, that meet the technical specifications of the rules as set forth in Annex I. Vessel operators should be aware that they are subject to stiff civil penalties for operating a vessel that is not in compliance with all the requirements – including the technical specifications – of the COLREGS.

The Coast Guard will check compliance with the regulations and specifications when conducting courtesy dockside examinations and at-sea boardings.

SOUND SIGNALING DEVICES – VESSEL LESS THAN 20 METERS

Vessel of 12 meters or more in length shall be provided with a whistle. For a vessel of less than 20 meters (65.6 feet) the whistle shall be audible for approximately one-half mile. The device must be capable of producing all the blasts required by the navigation rules.

A vessel of 12 meters or more but less than 20 meters in length shall not be obliged to give the bell signals prescribed in paragraphs (g) and (h) of this Rule. However, if she does not, she shall make some other efficient sound signal at intervals of not more than 2 minutes.

> NOTE: Some States require boats to carry sound signaling devices. Check with State boating enforcement agency for the requirements in your State.

SOUND SIGNALING DEVICES – VESSEL 20 METERS TO 100 METERS

Vessels of 20 meters (65.6 feet) up to 100 meters (328.1 feet) are required to be equipped with a whistle and a bell. The whistle (horn) on a vessel of less than 75 meters (246.1 feet) should be capable of sounding a tone within the frequency of normal human hearing – in the 250 to 700 Hz range. The device must be capable of producing all the blasts required by the navigation

rules for a vessel over 20 meters and it shall be audible for approximately one mile. The whistle shall be placed as high as practicable on the vessel, and if it is directional in construction it should be installed so that the maximum sound is directed straight ahead.

The bell on a vessel 20 meters (65.6 feet) or more in length shall be no less than 300mm (11.8 inches) in diameter. The bell can be carried inside, but provision must be made so that it can be mounted and sounded outside. The bell should be mounted so that it can be heard all around the vessel.

SOUND SIGNALING DEVICES – VESSEL OVER 100 METERS

Vessels of 100 meters or more in length are required to be equipped with a whistle, bell and in addition, be provided with a gong, the tone and sound of which cannot be confused with that of the bell. The whistle, bell, and gong shall comply with the specifications in Annex III to these Regulations. The bell or gong or both may be replaced by other equipment having the same respective sound characteristics, provided that manual sounding of the required signals shall always be possible.

VESSELS ENGAGED IN FISHING

A vessel, fishing with "nets, lines, trawls or other fishing gear which restricts maneuverability," (interpreted to include fishing with pots or traps) cannot claim the special rights of a vessel "engaged in fishing" unless properly displaying fishing lights (or dayshapes) while engaged in that activity.

Vessels "engaged in fishing" have the "right of way" over: power driven vessels, sailing vessels, and may fish in a traffic separation zone. They may not impede the passage of any vessel following a traffic lane or navigating in a narrow channel, and DO NOT have the "right of way" over: a vessel restricted in its ability to maneuver, a vessel constrained by its draft, a vessel not under command, or a vessel being overtaken. The US Inland Rules do not recognize a vessel as “constrained by its draft” however this does apply to the International Rules.

> IMPORTANT: Vessels that fail to display the proper fishing lights (or dayshapes) cannot claim the privileges of a "vessel engaged in fishing". ALSO, when in port or traveling to or from the fishing grounds, a vessel must display **only** those 'running lights' appropriate for a “power driven vessel”.

A vessel using "trolling lines or other gear which does not restrict maneuverability" cannot claim the privileges of a "vessel engaged in fishing" and SHALL NOT display the fishing lights or dayshapes. They must, however, display the proper navigation lights.

FISHING VESSELS – LIGHT REQUIREMENTS

VESSEL ENGAGED IN FISHING BY TRAWLING – dragging a dredge or net:

Sidelights, stern light and all round green over white lights in a vertical line. Remember “green over white, trawling at night”. Sidelights and a stern light are only required when making way.

> NOTE: A vessel less than 50 meters (164.0 feet) in length shall not display a masthead light. If vessel is 50 meters or more in length, it must carry a masthead light aft of and higher than the all round lights.

VESSEL ENGAGED IN FISHING, other than trawling, NOT MAKING WAY, or at anchor:

ONLY all round red over white lights in a vertical line. Remember “red over white, fishing at night”.

NOTE: When "making way" display sidelights and stern light, but not masthead light.

VESSEL ENGAGED IN FISHING, other than trawling, WITH GEAR EXTENDING MORE THAN 150 METERS (492.1 feet):

In addition to the all round red over white lights, display an all round white light on the side where the obstruction exists. Note: when "making way" add sidelights and sternlight, but not masthead light.

VESSEL RESTRICTED IN ABILITY TO MANEUVER (such as hung-up on an underwater obstruction) AND NOT MAKING WAY:

ONLY all round red over red lights in a vertical line.

NOTE: when "making way" (for instance a vessel with a steering casualty) add sidelights and sternlight, but not masthead light or fishing lights.

VESSEL AT ANCHOR:

Display ONLY one all round white light in the fore part of the vessel.

Note: A vessel of 50 meters (164.0 feet) or more in length shall display an additional all round white light near the stern and lower that the one in the fore part of the vessel.

TECHNICAL SPECIFICATIONS – LIGHTS

There are numerous technical specifications regarding color, intensity, and placement of lights – particularly for vessels of 20 meters or more in length – contained in the Annex I of the Navigation Rules. The exemption period for most technical specifications expired in 1989. Operators (and owners) of vessels that are not in compliance with the technical specifications outlined below are subject to a civil penalty of up to $6,500 for each violation.

TECHNICAL SPECIFICATIONS: VESSEL 20 METERS OR MORE IN LENGTH

Lights, including all round lights used for fishing lights, manufactured before 1989 do not meet the technical specifications for color and intensity required by the COLREGS. All navigation lights, including "fishing lights" on vessel 20 meters (65.6 feet) or more in length should carry a certificate on board indicating that they are manufactured to the specifications set forth in the COLREGS. The certificate should specify the size of vessel and suitable area of operation for the lights.

Masthead light shall not be less than 6 meters (19.7 feet) above the hull (uppermost continuous deck), but shall not be less than the greatest breadth, if breadth exceeds 6 meters (19.7 feet). The masthead light need not be more than 12 meters (39.4 feet) above the hull.

Sidelights height above hull (uppermost continuous deck) shall not be greater than three-

quarters of the height of the forward masthead light, and shall not be placed so low as to be interfered with by deck lights. Sidelights shall be placed "at or near the side of the vessel", meaning that the lights shall not be placed inboard more than 10% of the breadth of the vessel. For instance, if the maximum breath of the vessel is 24 feet the sidelights must not be placed more than 2.4 feet inboard. Sidelights may be placed "in line" with the masthead light, but shall not be placed aft of the masthead light. Sidelights shall be fitted with matt black screens.

LIGHTS CARRIED IN A VERTICAL LINE (VESSEL ENGAGED IN FISHING or VESSEL RESTRICTED IN THEIR ABILITY TO MANEUVER) shall be separated by a vertical distance of not less than 2 meters (6.6 feet).

Lower Fishing (White) Light shall be located at a height above the sidelights of not less than twice the distance between the two vertical lights (minimum of 4 meters or 13.1 feet).

All Round Lights shall not be obscured from view by an arc of more than 6 degrees. This means all round LIGHTS should be installed on a bracket that sets the light away from the mast. The larger the mast the farther away from the mast the light must be installed, in order to prevent obscuring the lights.

TECHNICAL SPECIFICATIONS: VESSEL LESS THAN 20 METERS (65.6 feet) but more than 12 METERS (39.4 feet) IN LENGTH

Masthead light shall not be less than 2.5 meters (8.2 feet) above the gunwale.

Sidelights height above hull (uppermost continuous deck) shall not be greater than three-quarters of the height of the forward masthead light, and shall not be placed so low as to be interfered with by deck lights.

Sidelights, if carried in a combined lantern, shall be placed not less than 1 meter (3.3 feet) below the masthead light.

LIGHTS CARRIED IN A VERTICAL LINE (VESSEL ENGAGED IN FISHING or VESSEL RESTRICTED IN THEIR ABILITY TO MANEUVER): On vessels less than 20 meters (65.6 feet) in length, lights carried in a vertical line shall be spaced not less than 1 meter (3.3 feet) apart, with lowest light placed not less than 2 meters (6.6 feet) above the gunwale. In the case of fishing lights, the lower light shall at least 2 meters (6.6 feet) above the sidelights.

TECHNICAL SPECIFICATIONS: VESSEL LESS THAN 12 METERS (39.4 feet) IN LENGTH

Masthead light may be carried at a height less than 2.5 meters (8.2 feet) above the gunwale, but must be at least 1 meter (3.3 feet) above sidelights.

FISHING VESSELS – DAYSHAPE REQUIREMENTS

VESSEL "ENGAGED IN FISHING" – TWO BLACK CONES, POINT-TO-POINT: The cones shall be **solid black** and have a base diameter of not less than 0.6 meters (23.6 inches) with a height equal to the diameter.

Dayshapes must not be permanently installed in the rigging. A vessel not engaged in fishing must not display a dayshape (basket or cones) indicating that it is fishing. On the other hand, a vessel that fails to display the proper dayshape cannot claim the privileges of a "vessel engaged in fishing".

CERTIFICATES OF ALTERNATE COMPLIANCE (CACs)

There are provisions for alternate compliance to the COLREGS and INLAND Rules. Certificates of Alternate Compliance (CACs) are available for any vessel that cannot fully comply with the navigation rules because of special or unique design that cannot meet the Rules without interfering with their mission. CACs cannot be used to extend the time for compliance, as the existing extensions (most of which expired in 1989) recognize that vessel modification (moving masts or sidelights) was necessary for existing vessels. If modifications would hamper the mission of the vessel a CAC should be applied for.

CACs are issued by the Chief of the Coast Guard Marine Safety Division (now referred to as the Prevention Division) in the District where the vessel operates. See the back of the *Navigation Rules* book (page 202) for information on how to apply for a CAC.

SOURCES: 33 CFR Subchapters D and E, 46 CFR 28.225, *Navigation Rules - International and Inland* (http://www.navcen.uscg.gov/mwv/navrules/download.htm)

20 CORRECT USE OF STROBE LIGHTS

This chapter applies to any and all fishing industry vessels.

High intensity strobe lights are being used for many purposes at sea. Some of these uses are potentially confusing and contrary to maritime law. Strobe lights are recognized as a signal requesting HELP and should not be used as a warning or 'stay-away' signal. These lifesaving lights should be used primarily as a **personal distress marker light** to attract the attention of Search and Rescue (SAR) units to an individual or group in distress in the water. They are recommended for use on immersion suits, personal flotation devices (life jackets), as man overboard lights and as liferaft lights.

Strobe lights are recognized as a distress signal on vessels operating on INLAND waters (ANNEX IV, INLAND, and 33 CFR 87.1(p)); but, the use of strobe lights as anchor or collision avoidance signals on vessels is strictly prohibited on both INTERNATIONAL and INLAND waters.

A fishing vessel 'laying-to' (drifting) at night, not 'engaged in fishing' should **maintain a look-out** and display only the navigation light of a power driven vessel underway (sidelights, masthead light and stern light). If at anchor or laying on its gear the vessel should **maintain a look-out** and display only an anchor light (all-round white light) and may use available working (deck) lights to illuminate the deck.

There are two cases when the use of a strobe light **on vessels** would be permitted. First, when an **immediate** and **extreme** danger of collision exists and all other means of communication fail, a strobe light could be used to alert and warn the on coming vessel. Second, a strobe light could be used by a vessel in distress or needing assistance **when requested** to do so by Search and Rescue (SAR) units.

THE USE OF STROBE LIGHTS TO MARK FIXED FISHING GEAR SHOULD BE AVOIDED as such use could cause confusion for Search and Rescue (SAR) units trying to locate individuals in distress in the water.

SOURCES: 33 CFR Subchapters D and E*, Navigation Rules - International and Inland* **(**http://www.navcen.uscg.gov/mwv/navrules/navrules.htm)

21 POLLUTION PREVENTION REQUIREMENTS

This chapter applies to any and all fishing industry vessels.

OIL AND OILY WASTE DISCHARGE

The Refuse Act of 1899 prohibits the throwing, discharging, or depositing of any refuse matter of any kind (including trash, garbage, oil and other liquid pollutants) into the waters of the United States up to three miles from the coastline.

The Federal Water Pollution Control Act (FWPCA) prohibits the discharge of oil or hazardous substances into the waters of the United States. It requires that you immediately notify the Coast Guard if your vessel or facility discharges oil or hazardous substance into the water.

In addition, federal regulations issued under the FWPCA require:

1. No person may drain the sumps of oil-lubricated machinery or the contents of oil filters, strainers or purifiers into the bilge of any U.S. vessel.
2. Vessels 26 feet in length and over must have a pollution placard fixed in a conspicuous place in the machinery spaces or at the bilge and ballast pump control station. The placard must be printed in the language or languages understood by the crew. The placard must be at least 5 by 8 inches, made of durable material, and state the following:

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

3. All vessels under 100 gross tons must have a fixed or portable means to discharge oily bilge slops to a reception facility. A bucket or bailer is considered a portable means.
4. All vessels 100 gross tons and above must:
    - be able to contain on board all oily waste and oily bilge slops that may accumulate, except in the bilge; and
    - have a pump installed to discharge the oily bilge slops and/or waste through a fixed piping system, which has at least on outlet accessible from the weather deck, fitted with an acceptable (international) shore connection and adapters, stop valve at the shore connection, and a means on the weather deck to stop the pump.
5. Oceangoing vessels of 400 gross tons or greater have additional operational, equipment, and record-keeping requirements regarding pollution prevention. These are addressed in 33 CFR Parts 151 and 155.
6. Vessels with a capacity to carry more than 250 barrels, or 10,500 gallons of oil or

hazardous material must have transfer procedures to cover transfers to or from the vessel, and transfers between tanks within the vessel. There also must be a designated person in charge of transfers who has sufficient training and experience in transferring such products. Safety and equipment requirements also apply to such a vessel. The specific requirements can be found in 33 CFR Subpart C.

GARBAGE DISCHARGE

Each vessel 26 feet or more in length must display in a prominent location(s) a placard that notifies the reader of the following:

1. Discharge of plastic or garbage mixed with plastic in any waters is prohibited;
2. Discharge of all garbage is prohibited in the navigable waters of the U.S. within 3 miles of the nearest land;
3. Discharge of dunnage and packing materials that float is prohibited within 25 miles of the nearest land;
4. Unground garbage may not be discharged within 12 miles of the nearest land; and
5. Ground garbage to less than one inch may not be discharged within 3 miles of the nearest land.

The placard must be at least 9 inches wide by 4 inches high, made of durable material, and with lettering at least 1/8 inch high.

Commercial fishing vessels 40 feet or more in length must have a waste management plan. The master shall ensure the plan is in writing and describes procedures for collecting, processing, storing, and discharging of garbage, as well as designating the person who is in charge of carrying out the plan.

On commercial fishing vessels 400 gross tons and above, the master is responsible for maintaining a written record or log of each garbage discharge or disposal operation. The record must be prepared at the time of the operation, be certified by the master, maintained on the vessel for two years, and be available for inspection by the Coast Guard.

SEWAGE DISCHARGE

All vessels with installed toilet facilities must have an operable Coast Guard certified Marine Sanitation Device (MSD) or holding tank. Section 312 of the Federal Water Pollution Control Act (FWPCA) provides for federal standards of performance for MSDs to prevent the discharge of untreated or inadequately treated sewage into or upon the U.S. waters. These waters include all inland waters and the waters seaward out to the three-mile limit. These regulations apply to both new and existing vessels.

Vessels not equipped with **permanently** installed toilet facilities (heads) are not subject to these requirements.

To determine the MSD requirements for your vessel, you must first know whether it is a 'new' or 'existing' vessel, as defined in the federal regulations:

- A 'new' vessel is any vessel the construction of which began on or after 30 January 1975.
- An 'existing' vessel is any vessel the construction of which began before 30 January 1975.

NEW VESSELS must be equipped with a Type II or III MSD, except that a Type I MSD installed before January 30, 1980 may be used for the life of the device, providing that the device remains in good operating condition.

EXISTING VESSELS must be equipped with a Type II or III MSD, except that a Type I MSD installed before January 30, 1980 may be used for the life of the device, providing that the device remains in good operating conditions.

WAIVER: New and existing vessels 65 feet or less may install Type I MSDs.

Operating Requirements:

- When operating a vessel with a Type I or Type II MSD on waters where the discharge of treated or untreated sewage is prohibited as designated by the EPA, the devices must be secured to prevent a discharge by: (a) closing the seacock and removing the handle; (b) padlocking the seacock in the closed position; (c) using a non-releasable wire-tie to hold the seacock in the closed position; or (d) locking the door to the space enclosing the toilet with a padlock or door handle key lock.
- When operating a vessel with a Type III MSD on waters where the discharge of treated or untreated sewage is prohibited as designated by the EPA, the device must be secured to prevent a discharge by: (a) closing each valve leading to an overboard discharge and removing the handle; (b) padlocking each valve leading to an overboard discharge in the closed position; or (c) using a non-releasable wire-tie to hold each valve leading to an overboard discharge in the closed position.

Remember, MSD requirements apply only to vessels with permanently installed toilet (head) facilities. However, any vessel with permanently installed toilet facilities on the waters of the United States, including the territorial seas, found to be violation of the MSD requirements is subject to a civil penalty of up to $2,200.

TYPES OF MARINE SANITATION DEVICES (MSDs)

TYPE I MSD is designed to discharge effluent. A Type I device is equivalent to a macerator-chlorinator.

TYPE II MSD is designed to discharge more thoroughly treated effluent than a Type I. A Type II is similar to a chloride secondary treatment plant.

TYPE III MSD is a no-discharge device, such as a holding tank, recirculator, incinerator, etc.

All MSDs must be Coast Guard certified. If the unit was manufactured before January 30, 1976, it is considered an 'existing device'. This equipment, except no-discharge devices, was certified by official letter from the Commandant of the Coast Guard, Washington, DC. No-discharge devices built before January 30, 1975 were certified by regulation with letter. However, some manufacturers applied for and received letters certifying their devices. You should obtain a copy of this letter from the manufacturer or distributor as your record to show that the equipment, in fact, is Coast Guard certified.

Coast Guard certified units manufactured on or after January 30, 1976 will have a label so stating on the device. No-discharge devices being used solely for the storage of sewage and flushing water at ambient pressure and temperature may be certified by definition. Devices certified in this manner must be labeled. However, manufacturers may apply for certification on such devices and therefore label them as Coast Guard certified. That label gives the certification

number and indicates whether the equipment has been approved for inspected and/or uninspected vessels.

THINGS YOU SHOULD KNOW ABOUT THE FEDERAL WATER POLLUTION CONTROL ACT (FWPCA)

The FWPCA is one of the most powerful and far reaching environmental laws ever enacted in the United States. Basically, this law makes it illegal to put almost any kind of oil and/or specified hazardous substance into almost any body of water, or nearby shoreline. Not only does this law make it illegal to discharge oil or hazardous material, but it also requires that the one who spills notify the government. This law also requires that a civil penalty be assessed against the spiller, regardless of whether or not he/she was at fault. The law speaks to the discharge of a 'harmful quantity' of oil. This is defined in federal regulation as being any amount of oil that causes a 'sheen' on the water. Any sign of oil on the water, such as sludge, oil, tar balls, etc., are also indications that a harmful quantity of oil is present and that there is an apparent violation of the FWPCA.

The maximum civil penalty that can be assessed for a violation of this sheen law is $11,000. It must be stressed, though, that in all cases where the spiller is identified, the law says that a civil penalty 'shall be assessed'. Please note that the Coast Guard has no choice but to assess a civil penalty against a known spiller.

The FWPCA is considered to be what is described as the 'doctrine of strict liability'. Basically this means that you, as the owner of the oil product, are responsible for that oil product, even it you are not personally responsible for it getting into the water. Again, there are certain exclusions within the law, but these are very rarely applied to the usual type of spills. For instance, if you own a vessel and it sinks at the mooring, you as the owner are responsible because the condition of the vessel allowed it to sink. Had you taken better care of the vessel and repaired it, the sinking probably would not have occurred. Congress established the FWPCA civil penalty system as a strict liability system to create the strongest possible incentive for the public to avoid all oil and hazardous substance spills.

The law does not speak to any amount of oil other than a harmful amount. If you spill less than a pint and it causes a sheen, then a violation of the FWPCA exists, and a civil penalty must be assessed. In determining the amount of the civil penalty, the Coast Guard Hearing Officer will look at all aspects of the case. The more information in the case file the better. S/he will attempt to 'balance' the assessment by considering the amount of oil spilled together with the circumstances surrounding the discharge, cleanup efforts undertaken, as well as looking at any post-spill efforts on the part of the spiller to prevent a similar discharge from occurring in the future.

Further, the FWPCA requires that if you spill oil, you must report the discharge to the nearest Coast Guard office/station or to the Environmental Protection Agency (EPA). You may also report the discharge to the National Response Center by calling a toll-free number, 800-424-8802. Failure to report a spill could result in criminal charges being lodged against you and a fine of up to $11,000. All sighted discharges should be reported to one of the above locations.

Be prepared to report the following information in the event of a discharge or the discovery of a discharge:

1. Location.
2. Source (if known).
3. Size.
4. Color.
5. Substance (if known or suspected).
6. Time and date observed.

If you are uncertain of the identity of the discharge, avoid physical contact or inhaling any of the fumes, and keep away any open flame. Do not attempt to take samples of any chemical discharge!

SOURCES: 33 U.S.C. Chapter 26, 33 CFR Parts 151, 155, and 159, 40 CFR 140.3 and 140.4

22 FIREMAN'S OUTFITS AND SELF-CONTAINED BREATHING APPARATUS

A **documented fishing industry vessel with more than 49 persons on board** must be equipped with at least **two** fireman's outfits stowed in widely separated locations.

A fireman's outfit consists of one self-contained breathing apparatus (SCBAs) with lifeline attached, one flashlight, a rigid helmet, boots, gloves, protective clothing, and one fire axe.

More important for smaller vessels is the requirement that a documented fishing industry vessel operating outside the Boundary Line, a documented fishing industry vessel operating with more than 16 persons on board, a documented fish tender vessel engaged in the Aleutian trade, using **ammonia** as a **refrigerant** be equipped with at least **two** self-contained breathing apparatus (SCBAs).

While the regulations only address vessels using ammonia as a refrigerant, it is recommended that a vessel carry SCBAs if any other toxic material is used as a refrigerant or other purpose in an isolated or confined space.

Each SCBA must be approved by the Mine Safety and Health Administration (MSHA) and by the National Institute of Occupational Safety and Health (NIOSH), have at a minimum a 30 minute air supply, and a full face piece.

At least one spare air bottle must be provided for each SCBA on board to meet either of these requirements.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.205

23 FIRST-AID KITS AND MANUALS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Such vessels **must have on board a complete first aid manual and medicine chest of a size suitable for the number of individuals on board in a readily accessible location.**

Neither the regulation nor the discussion of the regulations gives much guidance as to what a "complete first aid manual" or a "medicine chest of suitable size" is. No specific guidelines have been established regarding these requirements. The manual and first aid kit should be large enough and appropriate for the number of crew on board and the area of operation.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.210

24 FIRST AID & CPR TRAINING

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

A vessel with more than two persons on board must have individuals who are trained and certified* in First Aid and CPR (Cardio Pulmonary Resuscitation) as outlined below:

	First Aid	CPR
Vessel with **more** than 2 POB	1	1
Vessel with **more** than 16 POB	2	2
Vessel with **more** than 49 POB	4	4

NOTE: A person certified in both First Aid and CPR may be counted for both requirements.

* To meet these requirements individuals must have a valid certificate indicating completion of training by an accepted organization as listed below:

- A First Aid course approved by the U.S. Coast Guard **or** the American National Red Cross "Standard First Aid and Emergency Care" or "Multi-Media Standard First Aid" course.
- A CPR course approved by the U.S. Coast Guard or conducted by the American National Red Cross or the American Heart Association.

The regulations do not require that persons certified in either First Aid or CPR obtain refresher training or re-certification. However, the Coast Guard encourages trained persons to renew their certification(s) in accordance with either the Red Cross or American Heart Association guidelines to maintain their skills and stay current with any advancements.

While undocumented vessels and vessels with just two persons on board are not required to have on board a person trained in First Aid and CPR, all commercial fishermen are encouraged to obtain training in these lifesaving skills.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.210

25 GUARDS FOR EXPOSED HAZARDS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Such vessels must have installed "suitable hand covers, guards, or railings in way of machinery which can cause injury to personnel, such as gearing, chain or belt drives, and rotating shafting. This is not meant to restrict necessary access to fishing equipment such as winches, drums, or gurdies."

While there are no specific guidelines, the intent of the regulation is clear: protect personnel from injury by installing guards or railings.

Examples of areas where protective guards, railings, or grating should be considered:

- Belt drives on main engines;
- Auxiliary generator sets;
- Air compression units;
- Chain drives in steering systems and winches; and
- Propeller and winch shafting.

The regulations also require that there must be insulation or other type protective guarding around internal combustion engine exhaust pipes that are within reach of personnel.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.215

26 NAVIGATION INFORMATION

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Such vessels **must have the following navigational information on board**:

- Marine charts of the area of operation published by the National Ocean Service, the National Imagery and Mapping Agency, U.S. Army Corps of Engineers, or a river authority. The charts must be of a large enough scale (meaning the largest scale available) to enable safe navigation of the area. Charts **should** be the **latest edition, but must at least be currently corrected**, meaning that corrections published in the *Local Notice to Mariners* must be noted on each chart. (*Local Notice to Mariners* is available, free of charge, from: Commander (oan) Local Coast Guard District, or online at: http://www.navcen.uscg.gov/lnm/default.htm.)

- For the area of operation, each vessel must have on board a **currently corrected** copy of, or applicable currently corrected **extract** from the *U.S. Coast Pilot* and the *Coast Guard Light List.* Both are available online:
  - *U.S. Coast Pilot* – http://chartmaker.ncd.noaa.gov/nsd/cpdownload.htm
  - *Coast Guard Light List* – http://www.navcen.uscg.gov/pubs/LightLists/LightLists.htm

- For the area of operation, each vessel must have on board a **current** edition of, or applicable current extract from the *Tide Tables* promulgated by National Ocean Service, **and** the *Tidal Current Tables* promulgated by National Ocean Service or river current publication issued by the U.S. Army Corps of Engineers or a river authority. If operating in river and coastal/ocean areas, both sets of tables are required.

All vessels (state numbered or documented) of approximately 39.4 feet (12 meters), or more in length operating on waters governed by the "Inland Rules" (shoreward of the COLREG Demarcation Line) must have an up-to-date copy of the *Inland Navigation Rules* on board and maintain for ready reference.

Navigation Rules can be found at: http://www.navcen.uscg.gov/mwv/navrules/download.htm

IMPORTANT NOTE: You must have a **paper copy** of these publications – an electronic version is not accepted as meeting the requirements of the regulations. So if you download a copy of any navigation information, make sure you print a hard copy to be kept on the vessel.

SOURCES: 46 U.S.C. 4502, 33 CFR 88.05, 46 CFR 28.225

27 COMPASS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Such vessels **must be equipped with an operable magnetic steering compass, with a compass deviation table at the operating station.**

Most fishing industry vessels are already equipped with a good magnetic compass. If your vessel is not, it is suggested you install a marine compass capable of adjustment. The deviation card should be prepared by a reputable "compass adjustor" and posted adjacent to the steering station.

There are no guidelines as to how recent the deviation card must be, but it is suggested that the interval should not exceed two years for steel vessels, five years for wooden or fiberglass vessels. The compass should be adjusted after major modifications, new installations or relocation of equipment.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.230

28 ANCHORS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Such vessels **must be equipped with "anchor(s) and chain(s), cables, or rope appropriate for the vessel and the waters of the intended voyage**."

It is not the intention of the Coast Guard to establish standards for anchors for fishing industry vessels. The intent of the regulations is to ensure that vessels are equipped with an **anchor** (in the conventional sense of the word) that will hold the vessel in emergency or extreme conditions. **This means that fishing gear will not meet the requirement for an anchor.**

There are industry standards available that can be used to determine the proper combination of anchor and line or rode for a particular vessel. In addition to manufacturer specifications, the American Boat & Yacht Council (ABYC), and the American Bureau of Shipping (ABS), both have established recognized standards for vessels of various sizes. ABYC standards are applicable for vessels up to approximately 60 feet in length, while the formulas developed by ABS are suitable for larger vessels.

In determining the size anchor appropriate for your vessel, the most extreme conditions should be considered. Size and length of anchor chain/cable/rope should match the anchor in terms of horizontal load and be long enough to provide for a scope of seven times the depth of water. It is recommended that anchors be ready for immediate use in an emergency.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.235

29 RADAR REFLECTORS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Vessels that have a **non-metallic hull** must be equipped with a radar reflector, **unless** the vessel is outfitted with gear in such a way that it provides a radar signature (image) from a distance of 6 miles. (The regulations do not state any standards for the quality of the radar receiver, or the conditions under which such a vessel should be visible on radar at 6 miles.)

If the hull of your vessel is constructed of wood, fiberglass or like material it is recommended that you equip the vessel with a radar reflector. Again, the regulations do not specify any particular type of reflector, but a reflector of the type used on "high-fliers" or by yachts should make your vessel visible on radar. If you have doubts about whether your vessel makes a good radar signature, ask a fellow mariner to check the image your vessel makes on his/her set.

The purpose of this requirement is to reduce the chance of collisions at sea by ensuring that fishing industry vessels are visible on the radars of other vessels, particularly in adverse weather conditions.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.235

30 GENERAL ALARMS SYSTEMS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

A vessel with an accommodation space or work space that is **not adjacent to (near) the operating station** must be equipped with an audible general alarm system. The system must be able to be operated from the operating station, and be capable of notifying individuals in any accommodation or work space where they may normally be employed in the event of an emergency.

In noisy workspaces such as the engine room where it may be difficult to hear, the alarm system must include a flashing red light in the space. Each general alarm bell or flashing red light must be identified with a sign in red lettering at least one-half inch high as follows:

ATTENTION
GENERAL ALARM – WHEN ALARM SOUNDS GO TO YOUR STATION.

The "station" is the emergency station assigned to each crewmember for specified types of emergencies: fires, flooding, abandon ship, etc. A public address (PA) system or other means of alerting persons on board may be utilized as an **alternative** to an alarm system **provided** it is as effective as a dedicated general alarm system as described above.

TESTING of the general alarm system (or alternative) is required **before** the vessel gets underway, and at least once each week while underway. The testing of the general alarm should be noted in the vessels log.

While vessels may opt to use a public address system to meet the requirements for a general alarm, there are several areas of concern. Can the public address system be heard clearly and distinctly in a noisy machinery space? Is the PA system able to withstand a harsh marine environment, and is the amplifier system secured to the vessel? Does the PA broadcast to all spaces – deck, accommodation and machinery spaces – or must a switch be changed to sound the alarm in **all** spaces? Are all speakers operational? The master must check to make sure that no one has disabled the speakers in any accommodation spaces.

If there is any doubt about the effectiveness of a PA system it is recommended that a dedicated general alarm system be installed – a system that has one purpose and one purpose only: notifying crew members in an emergency!

On smaller vessels not required to have a general alarm system - that is those with an unattended machinery space, and an accommodation space in the forecastle forward of the operating station – a bell could be mounted adjacent to the companionway. Rapid ringing of the bell is a very effective general alarm.

Some type of general alarm system is important on all vessels. Lives have been lost because there was no rapid, effective way to alert all members of the crew of an impending disaster.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.240

31 COMMUNICATIONS EQUIPMENT

Documented fishing industry vessels operating beyond the Boundary Line are now required to be equipped with communications equipment capable of communicating with a public coast station or U.S. Coast Guard station serving the area in which the vessel is operating.

VESSEL REQUIREMENTS

a) **Each vessel** must be equipped with a VHF radiotelephone capable of transmitting and receiving on frequencies in the 156-162 MHz band.

b) Vessels that operate **more than 20 miles** from the coastline must, in addition to a VHF, be equipped with a radiotelephone transceiver capable of transmitting and receiving on frequencies in the 2-4 MHZ band.

c) Vessels that operate **more than 100 miles** from the coastline must, in addition to VHF, be equipped with a radiotelephone transceiver capable of transmitting and receiving on frequencies in the 2-27.5 MHZ band.

A radiotelephone transceiver installed before September 15, 1991 that is capable of transmitting and receiving on frequencies in the 4-20 MHZ band will satisfy the requirements outlined in paragraph (c) above.

SUSTITUTIONS

The following may substitute for the radiotelephone requirements in paragraph (c) above: satellite communication capability with the system servicing the area in which the vessel is operating; or cellular telephone capable of communicating with a public coast station or U.S. Coast Guard station serving the area in which the vessel is operating. However, it is unlikely that a cellular telephone will satisfy the requirements for vessels operating more than 20 miles offshore.

INSTALLATION

Communications equipment must be installed at the operating station in a manner to ensure safe operation and repair, and be protected against vibration, moisture, temperature, and excessive currents and voltages. It should be located to minimize the possibility of water intrusion from windows broken by heavy seas.

FCC REQUIREMENTS

Communications equipment must comply with the technical standards and operating requirements of the Federal Communications Commission (FCC), and each vessel REQUIRED to be equipped with a radio must have a Ship Radio Station License issued by the FCC.

EMERGENCY POWER

An emergency source of power - independent of the main electrical power supply that is located outside the main machinery space - must be provided to power all communications equipment for at least three hours.

MORE ON RADIOS, EMERGENCY POWER SUPPLIES, CELLULAR PHONES

Questions have arisen regarding the requirements for communications equipment, the use of cellular telephones, and emergency (back-up) power supplies for this equipment. What follows is an explanation and review of the requirements for radios and their back-up power supplies.

The commercial fishing vessel safety regulations require that all documented commercial fishing industry vessel operating beyond the Boundary Line be equipped with communications equipment capable of communicating with shore based search and rescue (SAR) facilities. [46 CFR 28.245]

VHF RADIOS

Each vessel is required to be equipped with a VHF radiotelephone that is capable of communicating (on the 156 to 162 MHZ band) with a public coast station (marine operator) or U.S. Coast Guard Station serving the area in which the vessel is operating. As most vessels are equipped with an all channel VHF radio this should not prove to be any great hardship. Vessels that are equipped with older crystal radios should ensure that they have the installed the channels used by the Coast Guard in your area of operation. Channels 06, 16, and 22, are the channels commonly used by the Coast Guard for SAR communications.

SSB RADIOS

Vessels that operate more than 20 miles from the coastline (meaning more than 20 miles from any point of land) must, in addition to a VHF radio, be equipped with a SSB radio capable of communicating with a public coast station or Coast Guard station on the 2 to 4 MHZ band.

Vessels that operate more than 100 miles from the coastline must be equipped with a SSB radio capable of communicating with a public coast or Coast Guard station on the 2 to 27.5 MHZ band. A vessel which was equipped with a SSB radio capable of communicating on the 4 to 20 MHZ band before 15 September 1991 may continue to use that radio to meet the requirement for a vessel operating more than 100 miles from the coastline.

Vessels operating more than 20 miles from the coastline, that are not equipped with a SSB - and there are probably a number of them - should have little difficulty obtaining a SSB radio capable of operating in the 2-4 MHZ band.

A problem arises for vessels currently operating more than 100 miles from the coast line that are not equipped with a SSB, as a radio capable of transmitting and receiving on frequencies in the 2-27.5 MHZ band are not currently available. (This specification was included in the regulations as the result of an international communications agreement.) So what is a person to do? Answer: If it is not possible to purchase a radio capable of communicating on the full range of 2 to 27.5 MHZ, then obtain a SSB radio that is capable of communicating with the a shore stations (public coast and Coast Guard Communications Stations) in your area of operation. In New England a SSB radio capable of transmitting and receiving on the 4 - 8 MHZ band would meet these requirements.

CELLULAR PHONES

Cellular telephones capable of communicating with a public coast station or a U.S. Coast Guard station serving the area in which the vessel is operating may be substituted for the SSB radios required for vessels operating more than 20 miles offshore, as well as those more than 100 miles offshore.

The Coast Guard does not encourage the substitution of cellular phones for emergency communications for many reasons, including:

a) Other vessels in the area may not hear the emergency call,
b) The Coast Guard cannot DF (direction find) on your signal,
c) You may dial a wrong number, get a busy signal, or experience interference in an emergency, or
d) You may be out of the service area.

When broadcasting a distress message you want as many people (vessels and stations) as possible to hear you. A cellular phone cannot broadcast to multiple listeners. The Coast Guard recommends that cellular phones be used only as a secondary means of emergency communication.

If you are considering a cellular phone as a substitute for a SSB you should ensure that you can call a Coast Guard Station from all your areas of operation.

EMERGENCY POWER FOR COMMUNICATIONS EQUIPMENT

Communications equipment must be provided with an emergency source of power meeting the requirements of 46 CFR 28.375. The emergency power supply must be:

a) Independent of the main source of electrical power.
b) Located **outside** the main machinery space.
c) Capable of operating the communications equipment continuously for at least **3 hours**.

Question: Would a portable (hand-held) VHF radio or a cellular phone with its own power supply meet the requirements for emergency power?
Answer: To determine whether this equipment would meet the emergency power requirements, answer the following questions:

For a VHF radio:

- Can I communicate with a Coast Guard Station using my portable VHF radio? The range of portable VHF radios is limited by their output, and the height of both the transmitting and receiving antennas.
- Will a fully charged battery in my VHF portable radio provide me with 3 hours of continuous operation, meaning one-and-one-half hours of transmitting followed by one-and-one-half hours of receiving?

If the answer to both these questions is "yes" then your portable VHF radio could conceivably be used to meet the requirements for emergency power for VHF communications. But, you should be prepared to demonstrate to a boarding officer that you can communicate with a shore station, and that the battery life is at least 3 hours, based on the specifications of the manufacturer.

For a cellular phone used as a substitute for a SSB for vessels operating outside 20 miles, similar questions must be answered:

- Can I call a local Coast Guard Station using my cellular phone?
- Will the fully charged battery in my portable cellular phone provide at least 3 hours of continuous operation, meaning one-and-one-half hours of transmitting followed by one-and-one-half hours of receiving?

If the answer to both these questions is "yes" then your portable cellular phone could conceivably be used meet the requirements for emergency power for offshore (beyond 20

miles) communications. But, again you should you be prepared to demonstrate to a boarding officer that you can communicate with a shore station, and that the battery life is at least 3 hours. You should be able to demonstrate a three-hour battery life using manufacturer specifications indicating that a fully charged battery will provide at least three (3) hours of continuous operation.

RADIO REQUIREMENTS FOR POWER-DRIVEN VESSELS OVER 20 METERS
[33 CFR PART 26] Bridge-to-Bridge Radiotelephone Regulations

All power driven vessels, including ALL fishing industry vessels, 20 meters (65.6 feet) or more in overall length (not registered length) must be able to **simultaneously** monitor VHF-FM Channel 13 and Channel 16, while operating on the navigable waters of the United States. In addition these vessels must be able to communicate on VHF-FM Channel 22A. Vessels 65.6 feet and over need **two VHF-FM** radios: One to monitor (and communicate on) Channel 16, and a second radio to monitor (and communicate on) Channel 13. One or both of the radios must be capable of communicating on Channel 22A. A portable (hand-held) radio can be used to meet the new requirements provided it is permanently associated with the vessel, and can be connected to an external antenna.

OPERATOR REQUIREMENTS

When operating inside the three-mile limit (on the navigable waters of the U.S.) the master, operator or person in charge of directing the vessel (pilot) is required to maintain a listening watch on Channel 13. The individual maintaining the listening watch **must be able to speak in English.**

STATION LICENSE

Any vessel required to be equipped* with radio transmitting equipment (VHF, SSB radio, RADAR and EPIRB) must be issued and carry on board an original "Ship Radio Station License". The Station License, as it is called, must list the types of equipment and the authorized frequencies on board the vessel. Many vessels, which are now equipped with the 406 MHZ EPIRB, have not amended the Station License to reflect this additional equipment. Vessel owners and operators should check the FCC Station License to ensure that all types of radio transmitting equipment is listed. The usual list for a fishing vessel would include: Radiotelephone, VHF and SSB, RADAR, and EPIRB.

* A vessel voluntarily equipped with radio transmitting equipment (e.g. a state numbered commercial fishing vessel) is not required to have an FCC “Ship/Aircraft Radio Station License.”

RADIOTELEPHONE OPERATORS’ PERMITS

If the fishing vessel is less than 20 meters (65.6 ft) and has only a VHF radio and operates on domestic voyages only, then no commercial radio operator license is required.

If the fishing vessel is 20 or more meters in length and has a VHF radio only and operates on domestic voyages, and the vessel is less then 300 gross registered tons, then a restricted radiotelephone license or higher is required.

If the vessel has a radio that will operate on medium or high frequencies, then a Marine Radio Operator license/permit is required.

Marine Radio Operator licenses are required to operate radiotelephone stations aboard certain vessels that sail the Great Lakes. They are also required to operate radiotelephone stations aboard vessels of more than 300 gross tons and vessels that carry more than six passengers for hire in the open sea or any tidewater area of the United States. They are also required to operate certain aviation radiotelephone stations and certain coast radiotelephone stations.

Restricted Radiotelephone Operators Permits are obtained by completing and submitting a permit application (Form 753) to the FCC along with a fee of $35.00, and are valid for the lifetime of the holder. You do not have to be a U.S. Citizen to obtain a Permit.

Marine Radio Operators Permits are obtained by submitting an application (Form 756), taking a written examination and paying a fee of $35.00, are valid for five years, and renewable without re-examination. To obtain a Marine Radio Operators Permit you must be a U.S. Citizen, or a registered alien permitted to work in the U.S.

EQUIPMENT INSTALLATION

If radio equipment is required, such as equipment to meet the requirements of the Bridge-to-Bridge regulations, it is required to be installed adjacent to the principal operating station. Equipment for use on VHF Channel 13 must be capable of transmitting on 1 watt.

LISTENING WATCH AND LOG BOOKS

Any vessel that is required to be equipped with radiotelephone equipment – such as a documented fishing industry vessel – **must maintain a listening watch on VHF Channel 16** (156.8 MHZ) whenever the radio is not actively being used for communication on a working frequency. Fishing industry vessels that are required to be equipped with SSB radios **must maintain a listening watch on 2182 KHz** during the "silent periods", which are the three minute periods immediately after the hour and the half-hour. During these "silent periods" only messages or transmissions concerning distress or urgency are made on 2182.

Also any vessel that is required to have radiotelephone communications equipment is required to enter into a "log" (it does not have to be a special Radio Log, but can be the Vessel Log) the time that the equipment is turned on and off, and any emergency communication heard or sent.

PENALTIES

For vessels that are required to be equipped with radiotelephone equipment, the FCC can impose penalties of up to $6,500 per day against the owner of a vessel, and up to $1,100 per day against the operator of a vessel that does not have the required equipment. Penalties for misuse can be as high as $11,000 per day, per violation. Lack of a Station License can result in a penalty of up to $8,000 for most fishing vessels. Recently fishing vessels using unauthorized SSB frequencies have received fines totaling $8,000. Vessels with SSB radios are reminded to use only the frequencies that are authorized. The FCC licensed technician that installs the radiotelephone equipment will set these.

FOR FURTHER INFORMATION REGARDING FCC REQUIREMENTS

If you have questions regarding FCC requirements you can contact the nearest FCC office. Applications for FCC Station License (Form 506), Restricted Radiotelephone Operators Permit (Form 753), and Marine Radio Operators Permit (Form 756) can be obtained from most radiotelephone equipment suppliers, or by calling 202-632-FORM. You may also contact the

FCC at 888-CALL-FCC or get more information from their web page at http://wireless.fcc.gov/marine/

COMPLIANCE

Coast Guard boarding officers will be checking for the necessary radio equipment, FCC licenses and permits, during routine boardings of power-driven vessels (recreational and commercial) 65.6 feet and over. The person responsible for monitoring the radios on vessels subject to the Bridge-to-Bridge regulations is required to have a Restricted Radiotelephone Operators Permit, and the radio equipment must be installed in accordance with FCC regulations.

SOURCES: 46 U.S.C. 4102, 46 U.S.C. 4502, 46 CFR 28.245, 46 CFR 28.375, 47 CFR Part 80

32 HIGH WATER ALARMS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Vessels that are 36 feet or more in length must be equipped with **visual** and **audible** high water (bilge) alarms located at the operating station. The alarms must indicate high water levels in each of the following unmanned spaces:

- Any space with a through-hull fitting located below the deepest load waterline, such as a lazarette;

- Machinery space bilges, bilge wells, shaft alley bilges, or any other space subject to flooding from seawater piping within the space; and

- Any space with a non-watertight closure, such as a space with a non-watertight hatch on the main deck. (This may include a fish-hold with a non-watertight hatch where water is not exchanged with an installed pumping capability.)

It is recommended that any vessel with an enclosed space that uses water in the sorting or processing of fish be fitted with a high-water alarm in each corner of the space.

Masters should test each high-water alarm at least weekly for proper operation.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.250

33 BILGE PUMPS, BILGE PIPING, AND DEWATERING SYSTEMS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Such vessels must be equipped with a bilge pump or pumps and bilge piping capable of draining any watertight compartment, other than tanks and small buoyancy compartments, under all conditions. Large spaces, such as an engine room, must be fitted with more than one suction line.

Except where a space is provided with an individual pump or a portable pump is used, vessels 79 feet or more in length must be equipped with a fixed, self-priming, powered, bilge pump connected to a bilge manifold.

Each bilge suction line must be provided with a stop valve at the manifold and a check valve in the bilge line to prevent unintended flooding of a space.

In addition, each bilge suction line and dewatering system suction must be fitted with a suitable strainer to prevent clogging of the line. The strainer must have an open area of not less than three times the open area of the suction.

If a portable pump is used to meet any of the above requirements it must be equipped with a suction hose of adequate length to reach the bilges of each watertight compartment it must serve, and a discharge hose of adequate length to ensure overboard discharge. A portable pump must be capable of dewatering each space it serves at a rate of at least 2 inches of water depth per minute.

In addition to the above requirements, there are special requirements for spaces used for sorting or processing of fish where water is used as part of the procedure. Such spaces must be equipped with a dewatering system capable of dewatering the space under normal conditions of list and trim at the same rate that the water is introduced. A pump used as part of the processing of fish does **not** count in the meeting of this requirement. The dewatering system must be interlocked with the pumps supplying water to the space, so in the event that the dewatering system fails, the water supply is shut-off.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.255

34 ELECTRONIC POSITION FIXING DEVICES

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Such vessels that are **79 feet or more in length** must be equipped with an electronic position-fixing device.

The regulations require that such vessels "be equipped with an electronic position fixing device capable of providing accurate fixes for the area in which the vessel operates." LORAN, OMEGA, SATNAV, GPS, RDF or similar navigation equipment satisfies this requirement.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.260

35 EMERGENCY INSTRUCTIONS / PLACARDS

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

Each vessel must have on board the following **emergency instructions.** On vessels with **4 or more persons on board**, the instructions **must be posted** in a conspicuous location, accessible to the crew. Vessels with **less than 4 persons on board** are not required to post these instructions, but **must keep them readily available**.

1. Survival craft (liferaft) embarkation stations aboard the vessel **and** the survival craft to which each person on board is assigned.
2. The fire and emergency signal and abandon ship signal.
3. The location of immersion suits (if carried) and illustrated instructions on the procedure for donning the suits.
4. Procedures for making a distress call.
5. Essential action that must be taken in an emergency by each individual.

The following instructions may be kept readily available as an alternative to posting.

6. Procedures for rough weather at sea, crossing hazardous bars, flooding, and anchoring the vessel.
7. Procedures to be used in the event a person falls overboard.
8. Procedures for fighting a fire.

It is recommended that there be instructions on:

- Procedures for launching the vessel's survival craft;
- Procedures for entering the vessel's survival craft from the vessel and from the water;
- Procedures to maintain watertight integrity of the vessel, such as operation of closing devices on doors and hatches, to prevent downflooding on the vessel and maintain stability of the vessel;
- Precautions to be followed when working around deck machinery, processing equipment, and on an open deck; and
- Procedures for entering a confined space, a space where hazardous materials have been stored or used, a fish hold, spaces that may be oxygen deficient, or a space not normally ventilated.

Procedures for making a distress call should include – at a minimum – the following information:

- Make sure the radio is on.
- Tune to Channel 16 (156.8 MHz), 2182 KHz or other distress frequency used in area of operation.
- Press microphone button and speaking slowly – clearly – calmly say: MAYDAY – MAYDAY – MAYDAY.
- Followed by: "THIS IS F/V (NAME OF VESSEL), (NAME OF VESSEL), (NAME OF

VESSEL), OVER."
- Release microphone button briefly and listen for acknowledgement. It there is no answer, repeat above.
- If there is still no answer, or if the Coast Guard or another vessel responds, say: MAYDAY – THIS IS THE F/V (NAME OF VESSEL)."
- Describe your position using latitude and longitude, LORAN coordinates (TDs), or range and bearing from a known point.
- State the nature of the distress.
- Give number of persons on board, and the nature of any injuries.
- Estimate the present seaworthiness of the vessel.
- Give a description of your vessel: (length; color of hull, superstructure, trim and masts; hull type; propulsion; and, additional distinguishing features).
- Say: "I WILL BE LISTENING ON CHANNEL (insert channel or frequency)."
- End message with: "THIS IS (insert name of vessel and call sign)."
- If the situation permits, stand by the radio to await further communications with the Coast Guard or another vessel. If there is no answer, repeat, and then try another channel.

Essential action that must be taken in an emergency by each individual should include – at a minimum – the following:

- Making a distress call.
- Closing of hatches, airports, watertight doors, vents, scuppers, valves for intake and discharge lines that penetrate the hull, stopping of fans and ventilation systems, and operation of all safety equipment.
- Preparing and launching of survival craft (liferafts) and rescue boats.
- Fighting a fire.
- Mustering of personnel including –
    - Insuring that they are properly dressed and have put on lifejackets or immersion suits:
    - Assembling personnel and directing them to their appointed stations
    - Manning fire parties assigned to deal with fires;
    - Special duties required for the operation of fire fighting equipment.

Procedures for rough weather at sea, crossing hazardous bars, flooding, and anchoring the vessel should include – at a minimum – the following:

- Close all watertight and weather-tight doors, hatches and airports to prevent taking water aboard or further flooding of vessel.
- Keep bilges dry to prevent loss of stability due to water in bilges. Use power driven bilge pumps, hand pumps, and/or buckets to dewater.
- Align fire pumps to use as bilge pumps, if possible.
- Check all intake and discharge lines that penetrate the hull for leakage.
- Insure that all personnel remain stationary and evenly distributed.
- Insure that personnel don lifejackets or immersions suits if the going becomes very rough, the vessel is about to cross a hazardous bar, or when instructed by the master or individual in charge.

Procedures to be used in the event a person falls overboard should include – at a minimum – the following:

- Throw a ring buoy as close as possible to the person in the water.
- Post a lookout to keep the person in the water in sight.

- Launch rescue boat, if available, or maneuver vessel to pick up person in water.
- Assign a crewmember to don lifejacket or immersion suit, attach a safety line, and standby to go in water to assist in the recovery of person in water if necessary.
- If the person in water is not **immediately** located, notify the Coast Guard and other vessels in area.
- Continue searching until released by Coast Guard.

Procedures for fighting a fire to include – at a minimum – the following:

- Shut off air supply to the fire – close hatches, ports, doors, ventilation, and similar openings.
- Shut off electrical systems supplying the space, if possible.
- Immediately use a portable fire extinguisher or water in the case of ordinary combustible materials. **Do not use water on electrical fires.**
- If fire is in a machinery space, shut off the fuel supply and ventilation system and activate fixed fire extinguishing system, if installed.
- Maneuver vessel to minimize the effect of wind on fire.
- If unable to control fire, immediately notify Coast Guard and other vessels in the area.
- Move personnel away from the fire, have them put on lifejackets or immersion suits, and prepare to abandon ship, should it become necessary.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.265

36 INSTRUCTIONS, DRILLS, SAFETY ORIENTATION

This chapter applies to any and all of the following fishing vessels:

- All documented fishing industry vessels, of ANY crew size, operating beyond the Boundary Line, OR
- Documented fishing industry vessels operating with more than 16 persons on board whether inside or outside the Boundary Line, OR
- Documented fish tender vessels engaged in the Aleutian trade.

INSTRUCTION

The master or individual in charge of a fishing industry vessel must ensure that each individual on board is given instruction and drills are conducted so that individuals are familiar with their duties and responses to at least the following contingencies:

- Abandoning the vessel;
- Fighting a fire in different locations on board vessel;
- Recovering an individual from the water;
- Minimizing the affects of unintentional flooding (damage control);
- Launching survival craft and recovering lifeboats or rescue boats (if carried);
- Donning immersion suits and other wearable personal flotation devices;
- Donning a fireman's outfit and a self-contained breathing apparatus, if the vessel is so equipped;
- Making a voice radio distress call and using visual distress signals;
- Activating the general alarm; and
- Reporting inoperative alarm systems and fire detection systems.

Instruction for these contingencies may be conducted as part of the required drills or at other times provided that the instruction ensures that each individual is familiar with their duties and responses.

USING VIDEO TRAINING AIDS

Viewing of instructional videos concerning the contingencies listed above, followed by a discussion led by a person familiar with these contingencies will satisfy the requirement for instruction, but not for the required drills or safety orientation.

DRILLS

Drills must be conducted on board the vessel at least once a month for the each of the contingencies listed. All persons on board must participate. Drills must be carried out as if there were an actual emergency on board. Emergency equipment must be used, alarm systems tested, and immersion suits and protective clothing donned if the vessel is so equipped.

The person conducting drills / instruction – a Fishing Vessel Drill Conductor – must be trained in the proper procedures for conducting the activity. [See Chapter 36 for details of instruction.]

> NOTE: The person conducting the drills / instruction need not be the master, or individual in charge of the vessel, nor a member of the crew.

SAFETY ORIENTATION

The master or individual in charge of the vessel must ensure that a safety orientation is given to

any individual on board who has not received the instruction or participated in the drills outlined above. The safety orientation must be provided to these individuals before the vessel may be operated. The orientation must explain the emergency instructions required by §28.265 (see Chapter 34) and cover the specific contingencies as required above.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.270

37 TRAINING

The person conducting drills / instruction – a Fishing Vessel Drill Conductor – must be trained in the proper procedures for conducting the activity. The Commercial Fishing Vessel Safety regulations establish qualifications for Fishing Vessel Safety Instructors who are authorized to train Fishing Vessel Drill Conductors.

The Coast Guard's Officer In Charge, Marine Inspection (OCMI) in the zone where a Fishing Vessel Safety Instructor plans to conduct instruction must approve the course curriculum and verify the experience of the instructor.

CURRICULUM

The Fishing Vessel Safety Instructor must

- Submit to the OCMI a detailed course curriculum relating directly to the 10 contingencies in Chapter 35 (also listed in 46 CFR 28.270(a)), OR

- Submit a letter to the OCMI certifying the use of the national standard curriculum, *Personal Survival and Emergency Drills Course*. (see below for address where curriculum can be obtained)

EXPERIENCE

A Fishing Vessel Safety Instructor must present to the OCMI evidence of experience as follows:

- Proof of at least one-year experience in a marine related field and experience relating to the 10 contingencies found in §28.270(a) [See Chapter 36] including experience as an instructor, or training in instructional methods; OR

- A valid Coast Guard license as master of uninspected fishing industry vessels and proof of experience relating to the 10 contingencies found in §28.270(a) including experience as an instructor, or training in instructional methods.

RECORDS

Individuals who qualify as a Fishing Vessel Safety Instructor will receive a letter of acceptance from the OCMI that is valid for five (5) years.

The Coast Guard Sector Office (OCMI) will maintain a list of accepted instructors.

Fishing Vessel Safety Instructors and / or organizations providing training shall issue documents to Fishing Vessel Drill Conductors upon successful completion of all required training.

It is recommended that Fishing Vessel Drill Conductors renew their training every five (5) years.

SOURCES: 46 U.S.C. 4502, 46 CFR 28.275, Navigation and Vessel Inspection Circular 7-93 (NVIC 7-93)

The national standard curriculum, *Personal Survival and Emergency Drills Course*, can be obtained from:

United States Marine Safety Association
Marine Safety Park, 5050 Industrial Road
Farmingdale, NJ 07727-3651
Phone: 732-751-0102 • Fax: 732-751-0508
sales@usmsa.org , www.usmsa.org