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Part II

Department of
Transportation

Coast Guard

46 CFR Parts 25 and 28

Emergency Position Indicating Radio
Beacons for Uninspected Fishing, Fish
Processing, Fish Tending and Commercial
Vessels and Commercial Fishing Industry
Vessel Regulations; Rule and Proposed
Rules

DEPARTMENT OF TRANSPORTATION

Coast Guard

46 CFR Part 25

(CGD 87-016a)

RIN 2115-AC69

Emergency Position Indicating Radio Beacons for Uninspected Vessels

AGENCY: Coast Guard, DOT.

ACTION: Proposed rule.

SUMMARY: The Coast Guard is proposing to amend the uninspected vessel regulations by requiring emergency position indicating radio beacons (EPIRBs) to be carried on uninspected commercial vessels operating on the high seas and on the Great Lakes beyond three miles from the coastline. The EPIRB's on Uninspected Vessels Requirements Act amended the shipping laws of the United States by requiring those vessels to have the number and type of EPIRBs prescribed by regulation. By implementing the law, the regulations will ensure rapid and effective search and rescue during emergency situations. Some other minor revisions to the regulations for uninspected vessels are proposed as well.

DATES: Comments must be submitted on or before June 18, 1990.

ADDRESSES: Comments should be mailed to the Executive Secretary, Marine Safety Council (G-LRA-2/3600) (CGD 87-016a), U.S. Coast Guard, 2100 Second St., SW., Washington, DC 20593-0001. Between the hours of 8 a.m. and 3 p.m. Monday through Friday, except holidays, comments may be delivered to, and are available for inspection and copying at, the Marine Safety Council, U.S. Coast Guard, Room 3600, 2100 Second St., SW., Washington, DC 20593-0001, (202) 267-1477.

FOR FURTHER INFORMATION CONTACT: LCDR Stanford W. Deno, Survival Systems Branch, room 1404, U.S. Coast Guard Headquarters, 2100 Second St. SW., Washington, DC 20593-0001, (202) 267-1444. Normal office hours are between 7 a.m. and 3:30 p.m., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION: Public Law 100-540, known as the "EPIRB's on Uninspected Vessel Requirements Act" (102 Stat. 2719, October 28, 1988), amended section 4102 of title 46 of the United States Code by revising paragraph (e) to require uninspected vessels operating on the high seas and on the Great Lakes beyond three miles from the coastline to carry the number and type of emergency position indicating radio beacons (EPIRBs) prescribed by regulation. The rules

discussed in this notice would implement that law.

Similar rules requiring the carriage of EPIRBs on uninspected fishing, fish processing, and fish tender vessels operating on the high seas were published in the Federal Register on August 17, 1988 (53 FR 31004). Those rules were published under the authority of section 16 of the "Coast Guard Authorization Act of 1986" (Pub. L. 99-640, 100 Stat. 3545). The "EPIRB's on Uninspected Vessel Requirements Act" expanded the requirement for the carriage of EPIRBs to all uninspected commercial vessels operating on the high seas, and on the Great Lakes beyond three miles from the coastline. Another Notice of Proposed Rulemaking (NPRM) in this edition of the Federal Register titled "Commercial Fishing Industry Vessel Regulations" (CGD 88-079) includes proposed EPIRB requirements for uninspected commercial fishing vessels, fish tender vessels, and fish processing vessels. The proposed requirements in this NPRM would apply to all other uninspected commercial vessels operating on the high seas or on the Great Lakes beyond three miles from the coastline.

Drafting Information

The principal persons involved in drafting these regulations are: LCDR Stanford W. Deno, Office of Marine Safety, Security and Environmental Protection, Mr. R.L. Markle, Office of Marine Safety, Security and Environmental Protection, and CDR G.A. Gallion, Project Counsel, Office of Chief Counsel.

Discussion

The proposed amendments to part 25 of 46 CFR subchapter C would apply only to uninspected *commercial* vessels such as tugboats, towboats, small freight vessels, fishing industry vessels, and vessels under 100 gross tons carrying 6 or less passengers for hire. Recreational boats are not affected, as long as they do not operate in commercial service. These proposed amendments apply to all uninspected commercial vessels that operate beyond three miles from the coastline of the Great Lakes. Fishing vessels on the high seas are already required to carry EPIRBs under 46 CFR 25.26. Additional rules affecting fishing vessels are discussed in the separate NPRM on Commercial Fishing Industry Vessel Regulations (CGD 88-079) in this edition of the Federal Register.

Uninspected vessels are generally small vessels which, when damaged, may sink suddenly without calling for help. When a distress call is made, it often does not include an accurate or

complete identification of the vessel, description of the situation, or position. Uninspected vessels often do not have established routes or schedules. Therefore, the position of an uninspected vessel and whether or not it is overdue may be unknown to anyone ashore. These factors greatly reduce the chance of anyone being rescued following a uninspected vessel casualty. In contrast, when there is an EPIRB to provide prompt notification of the casualty and a homing beacon to guide rescuers to the scene, the chance of saving lives increases dramatically.

The Coast Guard agreed to seek legislative authority to require EPIRBs on uninspected vessels in a response to the April 24, 1980 recommendation resulting from the National Transportation Safety Board (NTSB) investigation of the 1978 loss of the F/V LOBSTA I. In the absence of legislative authority, an internal Coast Guard directive (COMDTINST 2370.2A) of October 28, 1981 instructed Coast Guard personnel to encourage all uninspected vessel operators to carry EPIRBs. Coast Guard and National Transportation Safety Board investigations of a number of uninspected vessel casualties have resulted in recommendations for EPIRBs on all uninspected vessels, in addition to uninspected fishing vessels. These casualties include the F/V BINKI which sank off Alaska in July 1987, the sailing vessel PRIDE OF BALTIMORE which sank north of Puerto Rico in May 1986, the tug M/V CELTIC which sank in Long Island Sound in November 1984, the F/V MARY LOU which sank off Alaska in January 1984, the F/V NOREEN ANN which sank off Alaska in May 1983, the F/V EQUINOX which sank in Alaskan waters in March 1983, and the F/V MARBLEHEAD which sank off Maryland in 1981. In addition, the sinkings of several other uninspected vessels have underscored the importance of an operating EPIRB. The M/V WEST I sank in the Pacific in June of 1986, and although the vessel had an EPIRB on board, it failed to function, and the crew spent over two weeks adrift in a liferaft. Seven were saved, but the master died the day before the survivors were rescued. The M/V PAM ALARIO was a tug that capsized and sank in December 1987. All on board were rescued after six days adrift, but for some reason, the EPIRB on the vessel did not deploy or did not operate. The tug WILLAMETTE PILOT III sank off California in March 1985, but its EPIRB ceased functioning after less than 7 hours of operation.

The proposed regulations would require the use of Federal

Communications Commission (FCC) Type Accepted Category I float-free EPIRBs operating on the dedicated satellite frequency of 406.025 MHz. The "406" MHz Satellite EPIRB system provides improved alerting and locating over conventional EPIRBs operating on 121.5/243 MHz, and also includes safeguards to prevent problems arising from false alarms and false alerts. (A false alarm is an EPIRB signal generated either accidentally or purposely, which is not the result of an emergency. A false alert is a transmission on 121.5 MHz or 243 MHz which is interpreted incorrectly as an EPIRB transmission.) The 406 MHz frequency is dedicated solely to the satellite distress system. On 406 MHz, the only signal recognized by the satellites is the beacon's coded distress signal, therefore, false alerts generated by interference are eliminated. False alarms and false alerts, which comprise more than ninety-nine percent of all EPIRB alerts, are a major problem which limit the effectiveness of the 121.5/243 MHz system. Although "COSPAS/SARSAT" search and rescue satellites can receive 121.5 MHz signals, 121.5/243 MHz EPIRBs are not designed as "Satellite EPIRBs", and their coverage area and alert and locate ability is significantly inferior to that of the 406 MHz Satellite EPIRB. FCC Type Accepted 406 MHz satellite EPIRBs are now available from several manufacturers, with others undergoing tests for type acceptance at this time. The FCC requirements for 406 MHz satellite EPIRBs also include qualification tests by Coast Guard accredited independent laboratories intended to reduce some of the quality problems that have become evident in some 121.5/243 MHz EPIRBs.

There are two types of 406 MHz satellite EPIRB relevant to this rulemaking. The "Category 1" EPIRB is an automatic float-free device. Electronically the "Category 2" EPIRB is identical to the Category 1, except that it is arranged for manual operation.

The Coast Guard recognizes that many owners and operators of uninspected vessels have voluntarily installed EPIRBs in response to the previous educational campaign and that this equipment has a long service life. Therefore the proposed rules would allow 121.5/243 MHz Class A (float-free) EPIRBs that are installed on or before 45 days after the effective date of the final rules to be carried for about six years. To allow adequate time for installation of satellite EPIRBs, the Coast Guard intends to establish a compliance date approximately one year after the effective date of the final rules. Under

rules published by the Federal Communications Commission any Class A EPIRB that does not meet signal coherency standards must be removed from service by August 1, 1991. Tests performed by the National Aeronautics and Space Administration (NASA) indicated that no Class A EPIRB manufactured before October 1, 1988 met the signal coherency standards. Signal coherency standards are intended to ensure that EPIRBs can be detected by satellite.

Although conventional 121.5/243 MHz Class A EPIRBs would be acceptable for the proposed six year phase-in period, this proposal would not allow Class B 121.5/243 MHz EPIRBs or Class C VHF-FM EPIRBs to be counted toward the EPIRB carriage requirement. Class B EPIRBs are not automatically deployed and activated. The signal from a VHF-FM Class C EPIRB is not detectable by the COSPAS/SARSAT satellites and can often go unnoticed by coast and ship radio stations.

The term "high seas" is used in the statute and in the proposed regulations. This term is not defined by the statute. The Coast Guard has defined high seas by regulation in 33 CFR 2.05-1(a); that is, waters which are neither U.S. territorial seas nor territorial seas of another country. Territorial seas are defined in 33 CFR 2.05-5(a) as those waters within the belt, three nautical miles wide, that is adjacent to its coast and seaward of the territorial sea baseline. The baseline generally follows the coastline. The President's Proclamation 5928 of December 27, 1988 (54 FR 777, January 9, 1989) extended the territorial sea to 12 miles from the baseline for the purposes of international law; however, that proclamation did not affect domestic law. Accordingly, the meaning of high seas as used in the proposed rules was not altered. These definitions will remain valid until there is further Congressional action.

Most uninspected vessels operating on the high seas and on the Great Lakes beyond three miles from the coastline are included in the EPIRB carriage requirements proposed in this NPRM, including small uninspected vessels regardless of length, tonnage, numbering or documentation, manning, accommodation spaces, or propulsion. Section 25.26-10 includes some proposed exemptions from the requirement to carry EPIRBs. The first exemption would apply to skiffs or work boats which are carried aboard a "mother ship". These boats would not be required to carry their own EPIRBs. A second partial exemption would apply to open boats which are not equipped to

stay at sea for more than a few hours. If these vessels operate on the high seas or beyond three miles from the coastline on the Great Lakes, they would be required to carry either a Category 2, manually activated, 406 MHz Emergency Position Indicating Radio Beacon (EPIRB), or the Category 1 automatically activated float-free EPIRB. We recognize that the Category 1 EPIRB may not always be appropriate for installation in open boats.

Regulatory Evaluation

These proposed regulations are considered to be non-major under Executive Order 12291 and nonsignificant under the DOT regulatory policies and procedures (44 FR 11034; February 26, 1979). A draft regulatory evaluation has been prepared and placed in the docket. It may be inspected or copied at the Office of the Marine Safety Council (see "ADDRESSES", above).

The draft evaluation uses a cost estimate of \$2700 for each of the estimated 10,000 uninspected vessels that would be affected. This cost estimate is based on the present retail cost of a Category 1 EPIRB and is believed to be higher than the cost which will eventually be achieved through volume production. The high figure has thus been used as a conservative basis for the evaluation. Approximately half of the affected vessels would have to install satellite EPIRBs within a year, at a cost of about \$13.5 million. The remainder would replace their existing conventional EPIRBs over a five year period at a cost, adjusted to 1989 dollars, of about \$10.25 million, for a total of about \$23.75 million for the industry to comply with the requirements in the rules in a six year period.

In addition to the saving of lives, primary benefits of the proposed regulations include more timely notification to the authorities that a casualty has occurred and more accurate identification of the object of the search and the area to be searched, which should contribute to large savings of money for the Coast Guard and other organizations involved in a search.

In the three-year period from 1984 to 1986, 40 lives were lost as a result of total losses of tugboats and towboats which make up largest group of the vessels covered by the proposed rules. Our casualty statistics are not sufficiently detailed to identify the deaths that occurred on other types of uninspected vessels that would be covered by the proposed rules. Although the number of lives that may be saved

through mandatory EPIRB requirements cannot be accurately predicted, using the minimally accepted value of a human life of one million dollars, the saving of only a few lives each year would justify the cost of these rules.

More tangible benefits can be identified in the reduction of search and rescue costs. The search for the fishing vessel AMAZING GRACE took 16 days and cost \$12 million before the search was abandoned. There was no definite notice that a casualty had occurred, and the area to be searched was unknown. Search time and cost can be significantly reduced if a functioning satellite EPIRB is in operation to guide searchers to the scene of the casualty. The savings to the government as a result of elimination or significant reduction of only three or four large-scale searches would justify the cost of these rules, even without considering the lives that may be saved by more timely location of vessels in distress.

The Coast Guard certifies that this proposal will not have a significant economic impact on a substantial number of small entities. Some uninspected vessel operators are part of large corporations and are clearly not small entities. Other uninspected vessel operators are considered to be small entities in that they are not part of large diversified corporations, and generally own no more than a few vessels.

It has been determined that this rulemaking is categorically excluded from a detailed environmental evaluation. The Categorical Exclusion Determination is available in the docket for examination, copying, and public comment. This action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that the rulemaking does not have sufficient Federalism implications to warrant the preparation of a Federalism assessment.

List of Subjects in 46 CFR Part 25

Fire prevention, Marine safety, Reporting and recordkeeping requirements.

In consideration of the foregoing, the Coast Guard proposes to amend part 25 of title 46, Code of Federal Regulations, as follows:

PART 25--[AMENDED]

1. The authority citation to part 25 is revised to read as follows:

Authority: 48 U.S.C. 4102, 4104, and 4302; 49 CFR 1.46. Subpart 25.50 also issued under 33 U.S.C. 1903(b).

2. Subpart 25.26 is revised to read as follows:

Subpart 25.26—Emergency Position Indicating Radio Beacons

- 25.26-1 Manned uninspected vessels.
25.26-5 Servicing of EPIRBs.
25.26-10 Exemptions.

Subpart 25.26—Emergency Position Indicating Radio Beacons

§ 25.26-1 Manned uninspected vessels.

(a) After [insert date one year after effective date], the owner of a manned uninspected vessel which operates on the high seas as defined in 33 CFR 2.05-1(a), or which operates beyond three miles from the coastline of the Great Lakes, shall ensure that the vessel has on board—

(1) An FCC Type Accepted Category 1, float-free, automatically activated, 406 MHz Emergency Position Indicating Radio Beacon (EPIRB); or

(2) A 121.5/243 MHz Class A EPIRB meeting paragraph (b) of this section.

(b) Until [insert date 6 years after effective date], a Coast Guard approved 121.5/243 MHz Class A EPIRB may be on board a vessel, under paragraph (a) of this section, if the EPIRB is operable and installed on the vessel on or before [insert date 45 days after effective date].

(c) Under rules published by the Federal Communications Commission at 47 CFR 80.1053, Class A EPIRBs manufactured prior to October 1, 1988 do not meet signal coherency and stability standards, and may not be used to meet the requirements of this section after August 1, 1991.

§ 25.26-5 Servicing of EPIRBs.

(a) The master of each vessel required to have an EPIRB under this subpart shall ensure that each EPIRB on board is tested and serviced as required by this section.

(b) The EPIRB must be tested in accordance with the manufacturer's instructions to determine whether or not it is operating immediately after installation and at least once each month thereafter, unless it is an EPIRB installed in a Coast Guard approved inflatable liferaft that is tested annually during the servicing of the inflatable liferaft by an approved facility. If the EPIRB is not operating, it must be repaired or be replaced with an operating EPIRB.

(c) The battery of the EPIRB must be replaced—

(1) Immediately after the EPIRB is used for any purpose other than being tested; and

(2) Before the expiration date that is marked on the battery.

§ 25.26-10 Exemptions.

(a) A skiff or work boat is not required to carry an EPIRB if—

(1) Its "mother ship" carries an EPIRB under § 25.26-1(a) of this chapter; and
(2) When not in use, the skiff or work boat is carried aboard the mother ship.

(b) A vessel is not required to carry an EPIRB under § 25.26-1(a) of this chapter if it—

- (1) Does not have berthing facilities;
(2) Does not have a galley; and
(3) Carries an FCC Type Accepted Category 2, manually activated, 406 MHz Emergency Position Indicating Radio Beacon (EPIRB).

Dated: January 19, 1990.

J.D. Sipes,

Rear Admiral, U.S. Coast Guard, Chief, Office of Marine Safety, Security and Environmental Protection.

[FR Doc. 90-0630 Filed 4-18-90; 8:45 am]

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46 CFR Part 28

[CGD 69-079]

RIN 2115-AD12

Commercial Fishing Industry Vessel Regulations

AGENCY: Coast Guard, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Coast Guard is proposing regulations for U.S. documented or state numbered uninspected fishing, fish processing, and fish tender vessels to implement the provisions of the Commercial Fishing Industry Vessel Safety Act of 1988. These regulations would apply to all U.S. commercial fishing industry vessels, whether existing before, or built or altered after, the effective date of the regulations and would provide requirements for their equipment, design, and operations. Additional equipment would be required for documented vessels that operate beyond the Boundary Line or that operate with more than 16 individuals on board. Design and construction requirements would apply to vessels built after or which undergo a major conversion completed after the effective date of these rules, if those vessels operate with more than 16 individuals on board. Additionally, casualty and injury reporting requirements are included that would apply to all underwriters of primary insurance for commercial fishing industry vessels, owners of commercial fishing industry vessels, and all employees injured on such vessels. These regulations are intended to improve the overall safety of commercial fishing industry vessels.

DATES: Comments on this notice must be received on or before: August 20, 1990.

ADDRESSES: Comments should be mailed to Executive Secretary, Marine Safety Council (G-LRA-2/3600) (CGD 88-079), U.S. Coast Guard, 2100 Second Street, SW., Washington, DC 20593-0001. The comments and materials referenced in this notice will be available for examination and copying between 8 a.m. and 4 p.m., Monday through Friday, except holidays at the Marine Safety Council, U.S. Coast Guard, room 3600, 2100 Second Street, SW., Washington, DC 20593-0001. Comments may also be hand delivered to this address.

A draft Regulatory Evaluation has been placed in the public docket for this rulemaking, and may be inspected and copied at the Marine Safety Council, at the address listed above.

FOR FURTHER INFORMATION CONTACT: Lieutenant Commander M. M. Rosecrans, Office of Marine Safety, Security and Environmental Protection (G-MTH-4/13), room 1304, U.S. Coast Guard Headquarters, Washington, DC 20593-0001, (202) 267-2997.

SUPPLEMENTARY INFORMATION: The public is invited to participate in this rulemaking by submitting written views, data, or arguments. Persons submitting comments should include their names and addresses, identify this Notice of Proposed Rulemaking (NPRM) (CGD 88-079), identify the specific issues of this NPRM to which each comment applies, and give reasons for the comments. Receipt of comments will be acknowledged if a stamped self-addressed post card or envelope is enclosed with the comments. All comments received before the expiration of the comment period will be considered before further action is taken.

Public Hearings and Meetings

Public hearings are planned for this NPRM. Hearings are planned for the Alaska, Gulf Coast, East Coast, and West Coast regions; however the number and date of these meetings have not yet been determined. Additional details of these hearings will be announced in the *Federal Register* subsequent to this notice.

A public meeting on implementation of the Commercial Fishing Industry Vessel Safety Act of 1988 (Act) was held at the offices of the American Institute of Marine Underwriters in New York, NY, on October 12, 1989. Notice of the meeting was published in the *Federal Register* on September 15, 1989 (53 FR 38316). The purpose of the meeting was to give the insurance industry an opportunity to ask questions on the intent of the proposed requirements

related to casualty data collection and to provide for the consultation with that industry in the development of such regulations that is required by the Act.

Drafting Information: Several offices at Coast Guard Headquarters and Coast Guard District Offices contributed to these proposed rules, but the principal persons involved in drafting this notice are Lieutenant Commander M.M. Rosecrans, Office of Marine Safety, Security and Environmental Protection and Commander G.A. Gallion, Office of the Chief Counsel.

RIN Number

A regulatory information number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross reference this action with the Unified Agenda.

Background

Law—Commercial Fishing Industry Vessel Safety Act of 1988

On September 9, 1988, Title 46 United States Code, was amended in Chapter 45 (Uninspected Commercial Fishing Industry Vessels, sections 4501 through 4508) by the Commercial Fishing Industry Vessel Safety Act of 1988, Public Law 100-424. This chapter, as amended, is applicable to all U.S. uninspected commercial fishing vessels, fish processing vessels, and fish tender vessels, except fish processing vessels of more than 5,000 gross tons and fish tender vessels of more than 500 gross tons since they are subject to inspection under 46 U.S.C. 3301 (11) and (12). Also it does not apply to vessels engaged solely in sport fishing that are subject to inspection under 46 U.S.C. 3501(8) as small passenger vessels and are regulated under 46 CFR subchapter T, or to vessels carrying 3 or less passengers which operate as uninspected passenger vessels regulated under 46 CFR subchapter C, part 25. Vessels that alternate between commercial and sport fishing must comply with the requirements for the service in which they are engaged.

The Act requires the Secretary of Transportation to prescribe regulations for certain safety equipment and vessel operating procedures. The Act also requires the reporting of casualties to commercial fishing industry vessels by insurers, reporting of injuries by seamen on board commercial fishing industry vessels, and collection of casualty information by the Secretary.

The Act calls for regulations concerning the following equipment:

1. For all vessels. The regulations developed for this class of vessels should concern:

- (a) Fire extinguishing equipment.
- (b) Life preservers.
- (c) Backfire flame arrestors for gasoline engines.
- (d) Ventilation of enclosed spaces.
- (e) Visual distress signals.
- (f) Buoyant apparatus.
- (g) Alerting and locating equipment, including emergency position indicating radiobeacons (EPIRBs).
- (h) Placards informing seamen of the duty to report injuries.

2. For vessels which are documented and operate beyond the boundary line described in 46 CFR part 7 or are documented and operate with more than 16 individuals on board. The regulations developed for this class of vessels should also concern:

- (a) Alerting and locating equipment including, EPIRBs.
- (b) Lifeboats or liferafts.
- (c) An immersion suit for each individual on board.
- (d) Radio communication equipment.
- (e) Navigation equipment including compasses, radar reflectors, nautical charts, and anchors.
- (f) First aid equipment.
- (g) Any other equipment required to minimize the risk of injury.

3. For vessels which are built after, or which undergo a major conversion completed after, the effective date of the regulations and operate with more than 16 individuals on board. The regulations developed for this class of vessels should also concern:

- (a) Navigation equipment, including radars and fathometers.
- (b) Life saving equipment, immersion suits, signaling devices, bilge alarms, bilge pumps, life rails and grab rails.
- (c) Fire protection and firefighting equipment.
- (d) Use and installation of insulation material.
- (e) Storage of flammable and combustible material.
- (f) Fuel, ventilation, and electrical equipment.

The Act also addresses a major operational problem encountered by commercial fishing industry vessels by requiring regulations for operational stability. The Act states that those regulations are to apply to all vessels which are built, or which are substantially altered in a manner that affects operational stability, after December 31, 1990.

The Act requires that in developing regulations, the Coast Guard—

(1) Shall consider the specialized nature and economics of the operations and the character, design, and construction of commercial fishing industry vessels; and

(2) May not require the alteration of a vessel or associated equipment that was constructed or manufactured before the effective date of the regulations.

Concern for the size and complexity of fish processing vessels is recognized by the Act. All fish processing vessels are to be inspected at least once every two years to ensure compliance with the regulations developed in response to the Act. Further, fish processing vessels which are built after or which undergo a major conversion completed after July 27, 1990, must meet the survey requirements of and be classed by the American Bureau of Shipping or another similarly qualified organization accepted by the Coast Guard for that purpose.

Commercial Fishing Industry Vessel Advisory Committee

The Act requires formation of a 17 member Commercial Fishing Industry Vessel Advisory Committee (Committee). The Executive Secretary of the Committee is appointed by the Secretary of Transportation, and the Federal Advisory Committee Act (5 U.S.C. App. 1 *et seq.*) applies to the Committee, except that the Committee terminates on September 30, 1992. A solicitation for membership on the Committee was published in the Federal Register on September 23, 1988 (53 FR 37075). That solicitation also explained the constituency of the Committee.

The Committee has met three times to discuss implementation of the Act and development of the subsequent regulations. The meetings were held twice in Washington, DC and once in Seattle, WA. Announcements of these meetings appeared in the Federal Register on March 13, 1989 (53 FR 10473), March 24, 1989 (53 FR 12307), June 6, 1989 (53 FR 24071), and September 27, 1989 (53 FR 39621).

The Committee has discussed a myriad of topics dealing with implementing the Act including several drafts leading to this NPRM. The basic form of the regulations resulted from Committee recommendations. To a large extent the content and the level of detail of this NPRM is based upon comments generated by the Committee in response to general discussions at the aforementioned meetings and review of the drafts.

Regulations—Advance Notice of Proposed Rulemaking

An Advance Notice of Proposed Rulemaking (ANPRM) was published in the Federal Register on December 29, 1988 (53 FR 52735), addressing potential requirements for uninspected fishing, fish processing, and fish tender vessels. In response to that ANPRM nearly 200 comment letters were received. Each of the comment letters has been considered in developing this NPRM.

Organization of the Regulations

Based upon the advice of the Committee, suggestions from the Fishing Vessel Safety Coordinators at the Coast Guard District offices, and many comments submitted in response to the ANPRM, a method of presenting the rules was sought that would allow the majority of those affected by the rules to determine the applicable requirements quickly and clearly. The standard regulatory format of title 46 Code of Federal Regulations (46 CFR) includes grouping requirements by subject, e.g., all fire fighting equipment requirements would be grouped together. This was considered to be too burdensome for commercial fishing industry vessel owners, since the large majority of requirements would not be applicable to most of the smaller state numbered vessels and within each section there would be differing applicability statements. Therefore, the organization of the proposed regulations was modeled after the Act as the simplest method of presentation.

Effective date of Regulations

The Coast Guard is considering establishing an effective date of the Final Rule which is 90 to 180 days after publication of the Final Rule. This could be necessary to allow manufacturers to prepare for increases in demand for some safety items after the Final Rule is published. The rules in this NPRM have taken this into consideration in §§ 26.125, 26.210, and 26.270. An alternative being considered is to establish an effective date 30 days after publication of the Final Rule with dates of compliance for some difficult to obtain equipment at later dates. Specific comments on this topic are requested.

Subpart A—General Provisions

This subpart applies to all commercial fishing industry vessels and contains the definitions of terms used in part 28, reporting requirements for casualties and injuries, and other administrative provisions. The rules proposed in this subpart are applicable to all vessels, vessel owners, underwriters of primary

insurance, and seamen employed on commercial fishing industry vessels.

Section 28.040 Incorporation by reference. Included in this section is a listing of the industry standards that are proposed to be incorporated by reference and the corresponding sections where each standard is referenced as the governing requirement.

In the interest of keeping the regulations as uncomplicated as possible, the number of standards incorporated by reference has been minimized. Instead, performance type standards have been used extensively.

Section 28.080 Report of casualty. This section proposes reporting requirements for vessel owners, agents, masters, individuals in charge of vessels, and underwriters of primary insurance whenever a casualty results in—

- (1) Loss of life;
- (2) An injury to an individual that causes that individual to remain incapacitated for a period in excess of 72 hours;
- (3) Loss of a vessel; or
- (4) Damage to or by a vessel, its apparel, gear, or cargo, except for fishing gear while not on board a vessel, that impairs the seaworthiness of the vessel or that is initially estimated at \$2,500 or more.

If the casualty is reported to a Coast Guard Marine Safety or Marine Inspection Office on Form CG 2692, in accordance with 46 CFR Part 4, a separate report would not be required. Currently, 46 CFR 4.05-1 requires the following casualties to be reported to the nearest Coast Guard Marine Safety or Marine Inspection Office as soon as possible after the casualty:

- (1) All accidental groundings and any intentional grounding which meets any of the other criteria listed below or which causes a hazard to navigation, the environment, or the safety of the vessel.
- (2) Loss of main propulsion or primary steering, or any associated component or control system, the loss of which causes a reduction of the maneuvering capabilities of the vessel.
- (3) An occurrence which materially and adversely affects the vessel's seaworthiness or fitness for service or route.
- (4) Loss of life.
- (5) Injury which requires professional medical treatment beyond first aid.
- (6) An occurrence not meeting any of the above criteria but resulting in damage to property in excess of \$25,000. The owner, agent, operator, master, or individual in charge of the vessel would be required to report the casualty to the

underwriter of primary insurance for the vessel or to the Marine Index Bureau. The underwriter of primary insurance would be required to report each casualty to the Marine Index Bureau within 90 days of receiving notice of the casualty and whenever it paid a claim resulting from a casualty. Information furnished by underwriters of primary insurance to comply with the provisions of this section will be exempt from disclosure under the Freedom of Information Act because it would be commercial and financial information which, if disclosed, would be likely to cause substantial harm to the competitive position of the underwriter. Such information is exempt from disclosure.

Section 28.090 Report of injury. This section would require each individual, when in the service of a commercial fishing industry vessel, to report every injury or illness to the master, individual in charge of the vessel, or other agent of the employer within seven days of the injury or illness. The purpose of this provision is to ensure that the employer, or his representative on board the vessel, is aware of all injuries and is provided with an opportunity to correct an unsafe or dangerous condition that may develop during a voyage.

Subpart B—Requirements for All Vessels

This subpart contains regulations which would apply to every commercial fishing industry vessel in response to section 4502(a) of the Act. The requirements of this subpart would be in addition to the requirements of 46 CFR subchapter C, which also applies to commercial fishing industry vessels.

Section 28.105 Lifesaving equipment—general requirements. This section simply restates the existing requirement that life preservers, immersion suits, and other lifesaving equipment required in 46 CFR subpart 25.25 be carried on board commercial fishing industry vessels. This is in addition to the requirements proposed in this subpart.

The Coast Guard considered requiring work vests (Type IV personal flotation devices approved under 46 CFR 160.053) for those individuals working on the open deck of commercial fishing industry vessels. The Committee recommended that work vests not be required because work vests interfere with the normal work of personnel on the decks of commercial fishing industry vessels and for that reason are not worn. The Coast Guard agreed with that recommendation and therefore, no work vest requirements are proposed.

Section 28.110 Life preservers or other personal flotation devices. In addition to the requirements of 46 CFR 25.25, this section would require installation of life preservers, immersion suits, and other personal lifesaving devices on certain vessels. Equipment which is in addition to that already required under 46 CFR subpart 25.25 would be required on the effective date of the regulations. Specific comments are requested from equipment manufacturers on their ability to meet an increased demand for the life preservers, immersion suits, and the other personal lifesaving devices proposed in this section. More specifically, estimates of the number of lifesaving devices that could be manufactured with as little as a three month notice are needed.

This section also proposes that each vessel that operates on the ocean beyond the Boundary Line, or on the Great Lakes, except those that operate between 32 °N and 32 °S latitude, be required to carry an immersion suit or an exposure suit of the proper size for each individual on board. Present regulations for freight vessels and tank vessels, in which exposure suits are required, establish exemption lines at 35 °N and 35 °S worldwide, except in the Atlantic Ocean, where the lines are 32 °N and 32 °S. Since the winter water temperatures in the Pacific Ocean near the coastline of the U. S. are colder than in the Atlantic Ocean at the same time of the year, 32 °N and 32 °S exemption lines are proposed for commercial fishing industry vessels. The expected water temperature at 32 °N is at least 60 °F. at all times during the year in the coastal areas of North America.

The immersion suits proposed here would be required to be of the proper size for each individual on board. The Coast Guard presently approves three sizes of immersion suits for use on inspected or uninspected vessels. These sizes are; "child/small adult" for individuals between 20 kg (44 lb.) and 50 kg (110 lb.), "adult" for individuals between 50 kg (110 lb.) and 150 kg (330 lb.), and "oversize adult" for individuals over 150 kg (330 lb.). These size classes were originally intended for large inspected vessels, where the "adult" suit would be adequate, if not well fitting, for almost every individual on board. The "child/small adult" and "adult oversize" suits are available for the few individuals outside the normal adult suit size range. This sizing philosophy would allow for suits to be stowed on the vessel without being assigned to any one particular individual.

The Coast Guard recently approved intermediate sizes of immersion suits as being equivalent to the "adult" size when they are assigned to an individual. The Coast Guard has also requested that immersion suit manufacturers consider development of performance standards and design guidelines for immersion suits suitable for individuals weighing less than 20 kg (44 lb.), which might be appropriate for children.

Comments are specifically requested on all aspects of these intermediate sizes of immersion suits and of the immersion suits suitable for individuals weighing less than 20 kg (44 lb.)

Section 28.115 Ring lifebuoys. This section would expand the requirement for ring lifebuoys under 46 CFR subpart 25.25 for vessels of more than 65 feet in length by requiring 2 additional ring lifebuoys. Currently 46 CFR subpart 25.25 requires only one ring lifebuoy for a vessel of more than 26 feet in length. The purpose of this proposal is to make sure that there are sufficient ring life buoys on board to be readily available at various points on the vessel.

Working on an open deck in a harsh environment, such as is done on board commercial fishing industry vessels, is hazardous, especially in light of the large openings in railings and bulwarks that are necessary for setting and retrieving fishing gear. Ring lifebuoys, conveniently located on deck, could be crucial in aiding an individual that has fallen or been washed overboard.

Section 28.125 Survival craft. Proposed requirements for survival craft are presented in this section. A survival craft such as a lifeboat or liferaft extends survival time by keeping survivors of a casualty out of the water to prevent death from hypothermia and drowning. Survival craft become more important when the vessel operates in colder waters, waters further from potential rescuers, and in more adverse weather and sea conditions. Immersion suits play an important part in extending survival time, but they do not replace and are not as effective as survival craft that keep individuals out of the water.

Section 28.125 proposes graduated survival craft requirements based upon the area of operation. The minimum requirement for the most exposed routes, as limited by statutory authority, would be inflatable liferafts with enough total capacity to accommodate all individuals on board. The inflatable liferafts would have to be of the same "ocean service" or "SOLAS" type that are currently used on inspected commercial vessels that operate in ocean service.

For vessels on less exposed routes (generally closer to shore), a less sophisticated liferaft might be used. The Coast Guard is considering approval of a "coastal" liferaft that would not include as much equipment, and might not be required to have an inflatable floor or insulated canopy. The details of the proposed standards for "coastal" liferafts are expected to be published in the Federal Register in 1990 under CGD 85-205, RIN 2115-AC51.

The inflatable buoyant apparatus is another device being considered for acceptance in less exposed waters, and for vessels in ocean waters where the Act only provides authority to require buoyant apparatus. This device resembles an inflatable liferaft, except that it has no canopy or equipment packs, and can be used effectively while floating either side up.

In waters close to the coastline where water temperature is normally above 60°F. (15°C.), the minimum required equipment would be a (rigid) buoyant apparatus or life float. These devices provide some flotation for survivors, but do not support them completely out of the water. They are suitable for use only where rescue is close at hand and hypothermia is not an immediate threat. In other, warmer, more protected waters, survival craft would not be required. The life preservers and, in some cases, immersion suits would provide flotation in most abandon-ship emergencies.

Section 28.105 would also require survival craft required by § 28.125 to be Coast Guard approved. However, unapproved survival craft of a type similar to that required by § 28.125 would be permitted on vessels fitted with them, if that survival craft was on board on the effective date of these regulations and remained in good and serviceable condition. Under § 28.135, unapproved inflatable liferafts on vessels in Ocean service that operate beyond 50 miles from the coastline or beyond 20 miles from the coastline in cold waters would have to be provided with the survival equipment packs appropriate for their service.

Under § 28.125 there would be a graduated implementation schedule for having survival craft on existing commercial fishing industry vessels. Existing, documented vessels that operate in the North Pacific area (generally north of the Strait of Juan de Fuca) would have to comply within 1 year of the effective date of the final rules. Existing, documented vessels that operate on the Great Lakes or in the Atlantic Ocean, north and east of a line drawn at a bearing of 150 degrees true from Watch Hill Light, Rhode Island,

would have to comply with this section within two years of the effective date. All other existing, documented vessels would have to comply with this section within three years of the effective date. Within 4 years of the effective date of the regulations, all vessels, including state numbered vessels, would have to comply with this section.

Under § 28.305, there would be no graduated implementation schedule for survival craft on vessels built after or which undergo a major conversion completed after the effective date of the regulations. On the date they first operate, or the date on which they first operate after the conversion is completed, survival craft would be required to comply with § 28.125.

After reviewing a draft of this NPRM, the Committee recommended to the Coast Guard that the proposed requirements for survival craft applicable to vessels that operate beyond the Boundary Line include a requirement to carry an inflatable liferaft. While the Coast Guard agrees in principal with the Committee, the Act gives limited authority in the area of survival craft, and inflatable liferafts can not be required on all vessels that operate beyond the Boundary Line.

Two other rulemakings would require certain inspected vessels to increase the number of inflatable survival craft which they carry. One of these rulemakings involves the proposed revision of the requirements for small passenger vessels published on January 30, 1989 (54 FR 4413), CGD 85-080, RIN 2115-AC22, 46 CFR subchapter T, Small Passenger Vessel Inspection and Certification. The second is a proposed revision to the lifesaving requirements for large inspected vessels published on April 21, 1989 (54 FR 16198), CGD 84-069, RIN 2115-AB72, 46 CFR subchapter W, Lifesaving Equipment.

The Coast Guard is concerned about the combined effect of these rulemakings on the ability of the inflatable survival craft industry to respond to the demand without having an adverse effect on the quality of the survival craft and the cost to the purchaser. Comments are specifically requested on appropriate time-phasing of requirements for inflatable survival craft in this rulemaking and their relationship to the requirements that would be created under other rulemaking projects.

A phased implementation schedule for requiring inflatable survival craft on commercial fishing industry vessels is intended to spread out the demand for inflatable survival craft, while ensuring that vessels subject to the higher risks, those in the north Pacific area, are

equipped with survival craft at the earliest practicable date.

Section 28.130 Stowage of survival craft. Survival craft are of no use to personnel if the survival craft are trapped by a sinking vessel. This section proposes to require that survival craft be arranged to automatically float-free from a sinking vessel or be readily accessible for launching. A float-free arrangement ensures that the survival craft will be available if the vessel sinks before the crew can prepare the survival craft for launching. Comments are specifically requested on the feasibility of this requirement for all affected vessels. The Coast Guard is interested in determining if there are vessels which do not have any suitable stowage location available for float-free survival craft. If the float-free survival craft is located where it may be under water breaking over the deck, it may inadvertently float free and be lost. Alternative stowage may be appropriate, such as a manual quick release mechanism, or a small inflatable liferaft packed in a valise and stowed inside the deckhouse near an access to the open deck.

Section 28.135 Survival craft equipment. Proposed in this section are requirements for survival craft equipment which would be similar to those for inspected vessels. Inflatable liferafts would be required to be packed with SOLAS A, SOLAS B, or Coastal Service equipment packs. Life floats, inflatable buoyant apparatus, and buoyant apparatus would not be required to be equipped with equipment packs but would be required to be fitted with a lifeline, pendants, a painter, and a light.

Additionally this section would prohibit the carriage of survival craft other than inflatable liferafts, life floats, inflatable buoyant apparatus, or buoyant apparatus unless that survival craft complied with the requirements for installation, arrangement, equipment, and maintenance contained in 46 CFR subchapter W.

Section 28.140 Lifesaving equipment markings. Proposed marking requirements are contained in this section for items of lifesaving equipment. These proposed rules are similar to the requirements for inspected vessels in proposed 46 CFR subchapter W, Lifesaving Equipment, mentioned above. Most floating items of survival equipment would be required to be marked with the name of the vessel and with retroreflective material in accordance with the internationally agreed upon manner as outlined in the International Maritime Organization

Maritime Safety Committee Circular 513, "Guidelines Concerning the Use and Fitting of Retro-Reflective Materials on Lifesaving Appliances." Inflatable liferafts and inflatable buoyant apparatus would be exempt from the marking requirements of this section, since they are affixed with tags, prior to packing, which can be used to identify them.

Marking of lifesaving equipment is intended to assist search and rescue operations, by making the lifesaving equipment more visible and identifying the individual or the vessel from which the equipment originated. This section would require the marking of equipment on vessels within one year of the effective date of the regulations.

The marking requirements for immersion suits proposed in § 28.140 are related to the sizing issue discussed previously under § 28.110. The proposed requirements would allow immersion suits to be marked with either the name of the vessel or the individual to whom the immersion suit is assigned. The main purpose for the marking of survival equipment is to enable identification of the vessel the equipment belongs to, in case it is found at sea or washed ashore. Marking an immersion suit with the name of the individual to whom it is assigned would allow the suit to move with the individual from vessel to vessel without the need to continually remark it. Some fishermen have purchased personal immersion suits. Allowing an immersion suit to be marked with the owner's name would permit the immersion suit to be taken from vessel to vessel with the individual. This would also be especially helpful for those who have purchased the smallest and largest sizes of immersion suits. Having the name of the individual marked on the suit should still allow the vessel involved to be identified.

Section 28.145 Operational readiness, maintenance, and inspection of lifesaving equipment. This section would require inflatable liferafts and inflatable buoyant apparatus to be inspected and serviced annually at a Coast Guard approved liferaft servicing facility. New inflatable liferafts and inflatable buoyant apparatus would not have to be serviced until after they were two years old.

The Coast Guard is considering approval of servicing facilities to service unapproved liferafts, as permitted in § 28.125(c), in order to facilitate the inspection and maintenance requirements for all liferafts, whether Coast Guard approved or not. Approval and servicing of inflatable liferafts is the subject of another regulatory project (CGD 85-205, RIN 2115-AC51). An

NPRM on this subject is expected to be published in the Federal Register in 1990.

Section 28.150 Distress signals. This section proposes requirements for visual distress signals on all commercial fishing industry vessels. Visual distress signals can be used to attract the attention of nearby vessels and aircraft, and are useful in alerting them to an emergency situation, or directing them to a vessel in distress. As specified in this section, vessels that operate beyond the Boundary Line and vessels that operate more than three miles from the coastline on the Great Lakes would be required to carry the same type of flares and smoke signals. In addition, vessels carrying inflatable liferafts would also have distress signals packed in the liferafts as part of the SOLAS A, SOLAS B, or Coastal Service equipment packs required by § 28.135.

Vessels that operate in coastal waters, as defined in 33 CFR 175.105(b), and within three nautical miles of the coastline on the Great Lakes would be required to carry the visual distress signals required for recreational boats under 33 CFR part 175, subpart C. Coastal waters include certain large bodies of water inside the Boundary Line, such as bays, sounds, harbors, rivers, and inlets with entrances to the ocean or to the Great Lakes, and which are wider than two nautical miles.

This section proposes that distress signals complying with these requirements be on board affected vessels on the effective date of the regulations. Equipment manufacturers are requested to specifically identify problems with supplying large numbers of distress signals on relatively short notice.

Section 28.155 Emergency position indicating radiobeacons (EPIRB). This section proposes requirements for EPIRBs on commercial fishing industry vessels. A separate NPRM in this issue of the Federal Register addresses requirements for EPIRBs on all uninspected vessels (CGD 87-018a, RIN 2115-AC69); however, § 28.155 proposes different compliance dates for commercial fishing industry vessels. The servicing requirements of proposed § 25.26-5 would apply to commercial fishing industry vessels.

Under rules published by the Federal Communications Commission in 47 CFR 80.1053, an EPIRB which does not meet the signal and coherency standard in effect after October 1, 1988, may not be used to meet the requirements for an EPIRB after August 1, 1991. EPIRBs manufactured before October 1, 1988, do not meet those stability and coherency standards and may not be used to meet

the requirements of 46 CFR subpart 25.26 or this section after August 1, 1991. However, EPIRBs manufactured prior to October 1, 1988, may be retained on board, since they may still be effective in helping to locate a disabled vessel or its survivors, but newer type EPIRBs (406 MHz, Category 1 or Category 2 satellite type) will also have to be fitted.

Section 28.160 Excess fire detection and protection equipment. This section proposes to allow fire fighting and fire detection equipment which is not required, provided it does not endanger the vessel or the personnel on board and is listed and labeled by a nationally recognized testing laboratory, such as Underwriters Laboratories, Inc.

Section 28.165 Portable fire extinguishers. This section proposes requirements for portable fire extinguishers. Vessels of not more than 6 feet in length, including sail powered fishing vessels such as "skipjacks", would be required to meet the existing regulations for portable fire extinguishers in 46 CFR subpart 25.30. In addition to the requirements of 46 CFR subpart 25.30, vessels over 65 feet in length would be required, as a minimum, to carry the portable fire extinguishers specified in Table 28.165. The proposed requirements in this section are similar to those for inspected vessels.

Section 28.170 Injury placard. This section proposes requirements which would specify the wording and construction of an injury placard required by the Act in 46 U.S.C. 4502(a)(8) and 10603, to be aboard all commercial fishing industry vessels. The placard would be required to be at least 6½ inches by 11 inches and be posted in a prominent place accessible to the crew.

Subpart C—Requirements for Documented Vessels That Operate Beyond the Boundary Line or With More Than 16 Individuals on Board.

Section 28.200 Applicability. This section describes the proposed applicability of this subpart. This subpart implements the mandate of 46 U.S.C. 4502(b). The requirements of this subpart would be in addition to the requirements of subparts A and B. It would apply to all documented vessels that operate with more than 16 individuals on board and all documented vessels that operate beyond the Boundary Line. The Boundary Line is described in 46 CFR part 7, and the rules for documenting vessels are contained in 46 CFR subchapter G. An individual is any person on board for any reason.

Section 28.205 Fireman's outfit. This section proposes requirements for the carriage of a fireman's outfit on vessels with more than 49 individuals on board. The fireman's outfit is proposed as an aid rescuing trapped individuals in the event of a fire. Vessels with more than 49 individuals are likely to be relatively large with many accommodation spaces and large, more complicated work spaces than the typical commercial fishing industry vessel. The likelihood of fire increases as the number of work spaces and the size of the work spaces increases. The fireman's outfit is considered necessary to allow for the rescue of individuals liable to be trapped during a fire and to aid in fighting a fire.

Section 28.210 First aid equipment and training. This section contains proposed requirements for first aid equipment and the training necessary for the proper use of the first aid equipment. The first aid equipment would be required to be of suitable composition for the number of individuals carried on board and accessible to all individuals on board.

The specific items of first aid equipment that would be suitable is not specified, as it may vary depending on the number of individuals, the area of operation, the duration of the voyage, and even the methods of fishing. It is expected that many organizations, including the American National Red Cross, can provide recommendations on the equipment that is appropriate if the above variables are known. Many industry organizations such as the North Pacific Fishing Vessel Owners Association publish guidance for their members on minimum first aid equipment considered appropriate.

The Committee was very concerned with the usefulness of first aid equipment without proper training in its use. They argued that the mere possession of first aid equipment did not give any assurance that the equipment would be used properly in event of an injury. The Committee recommended that the Coast Guard require a level of preparedness for injuries commensurate with the number of individuals on board by requiring a graduated number of individuals trained in proper administration of first aid. Two comments to the ANPRM also asked that at least one crew member be required to show proof of first aid training. The Coast Guard agrees with both the Committee and these comments and is proposing requirements for training in first aid.

The Committee also recommended that the Coast Guard propose training in CPR (cardiopulmonary resuscitation).

The Coast Guard agrees that training in CPR would be beneficial and has included a proposal for CPR training. An individual trained in both first aid and CPR could count toward the required number for both first aid and CPR.

Training in both first aid and CPR is readily available in nearly all locations and is relatively inexpensive. The proposed requirements concerning acceptable training courses are similar to those found in 46 CFR 10.205. Section 28.210 contains no provisions for maintaining training certificates, such as is commonly required to remain certified in CPR. Because of the delayed implementation date, 2 years after the effective date of the regulations, it is expected that individuals could obtain training when not fishing. This would minimize the impact of this requirement on individuals.

Section 28.215 Guards for exposed hazards. This section proposes requirements for guards for exposed hazards. Running machinery would be required to have hand covers, guards, or railings to reduce the chance of personnel being injured while working around the moving gears, belts, and chains. These guards would be required to be retro-fitted on existing vessels not already so equipped after the effective date of the regulations. The impact of retrofitting guards is expected to be small, since larger vessels, likely to be subject to this section, probably have such guards installed because it is considered good marine practice.

Section 28.225 Nautical charts and inland rules. This section would require each vessel to have on board adequate up-to-date charts necessary to safely navigate on each voyage. Other navigation information appropriate for an intended voyage would be required, as well. Vessels of 39.4 feet in length or over would be required to maintain, for reference, a copy of the Inland Navigation Rules.

Section 28.230 Compasses. This section would require each vessel subject to this section to be equipped with an operable magnetic deviation table at the operating station. More sophisticated equipment such as a gyrocompass could also be fitted at the steering station for primary use; but a magnetic compass would still be required due to its reliability.

Requiring nautical charts and compasses is designed to help vessel operators navigate without grounding. The Master should always know his position and be able to use a chart to determine a safe course to steer using the compass. Charts are also being

proposed to help operating personnel determine their position when assistance is needed.

Section 28.235 Anchors. This section would require that each vessel be fitted with anchors and chains appropriate for the intended voyage. There are many nautical books and classification society rules that could be used as a guide for determining the appropriate size for an anchor as well as the appropriate size and length of cable, rope, or chain which is suitable.

Section 28.240 Radar reflectors. This section would require each nonmetallic hull vessel, such as wooden or fiber reinforced plastic hull vessels, to have a radar reflector. A nonmetallic hull vessel that is fitted with fishing gear and rigging that creates a radar signature from a distance of six nautical miles would not be required to have any other radar reflector. Many small nonmetallic hull vessels have been struck while fishing, especially in inclement weather, because their radar signatures were inadequate to allow them to be detected.

No specific standards are being published for radar reflectors. Vessel owners should satisfy themselves that the radar reflector installed will allow their vessel to be detected by radar in all expected conditions of operation, including, but not limited to, situations where other vessels may be close at hand.

Section 28.245 Communication equipment. This section would require each vessel to be equipped with a VHF radiotelephone capable of transmitting and receiving on the frequency or frequencies within the 156-162 MHz band necessary to communicate with a public coast or a U.S. Coast Guard station serving the area in which the vessel operates.

A vessel that operates more than 20 nautical miles from the coastline would also be required to have a radio transceiver capable of transmitting and receiving on the frequency or frequencies in the 2-4 MHz band necessary to communicate with a public coast or a U.S. Coast Guard station serving the area in which the vessel operates.

A vessel that operates more than 100 nautical miles from the coastline would also be required to have a radio transceiver capable of transmitting and receiving on the frequency or frequencies in the 4-27.5 MHz band necessary to communicate with a public coast or U.S. Coast Guard station serving the area in which the vessel operates.

A vessel that operates in the waters contiguous to Alaska, regardless of the

distance from the coastline, where communication with a public coast or U.S. Coast Guard VHF coast station is not possible on the 156-162 MHz or 2-4 MHz bands would be required to be equipped with a radio transceiver capable of transmitting and receiving on the frequency or frequencies in the 4-27.5 MHz band necessary to communicate with a public coast or U.S. Coast Guard station serving the area in which the vessel operates.

The Committee recommended that alternatives to radiotelephones be permitted, especially in areas of Alaska, where there are no U.S. Coast Guard or public coast stations within range of the 156-162 MHz or the 2-4 MHz bands. The Coast Guard agrees that alternatives to radiotelephones could be effective in establishing a communication link between commercial fishing industry vessels and rescue services. Therefore, satellite communication capability with a system servicing the vessel's operating area or a cellular telephone capable of communicating with a U.S. Coast Guard or public coast station would be permitted as a substitute for the radiotelephones required.

Communication equipment would be required to be located at the operating station and connected to an emergency power source. Communication equipment is considered to be of primary importance. There are numerous cases where communication by radio has been responsible for the timely rescue of individuals on disabled vessels.

This section would also require communication equipment to be installed to ensure safe operation and to protect the equipment from vibration, moisture, extreme temperature, and excessive voltage or currents.

Section 28.250 Bilge alarms. This section would require an audible and visual alarm at the operating station of each vessel of more than 36 feet in length to indicate high water in a normally unmanned space subject to flooding. Such a space includes a space with a through hull fitting below the deepest waterline; a machinery space bilge, bilge well, shaft alley bilge, or other space subject to flooding from sea water piping within the space; or a space with a non-watertight closure on the main deck, if the space is unmanned. For a commercial fishing industry vessel, this would include nearly all spaces below the main deck except cargo holds. This could require some existing vessels to be retrofitted with bilge alarms.

Section 4502(b) of the Act which applies to documented vessels which operate beyond the Boundary Line or

which operate with more than 16 individuals on board does not specifically address bilge alarms. However, the Committee felt strongly that any space below deck which was not under the direct observation of the master or individual in charge, should be fitted with both a bilge alarm and a bilge system to dewater that space. Section 4502(b)(7) authorizes the Secretary of Transportation to require equipment not specifically identified, if that equipment will minimize the risk of serious injury. The Committee felt that bilge alarms and a bilge pumping system is equipment of this type. The Coast Guard agrees and has included requirements in this and the following section for bilge alarms and a bilge pumping system.

Section 28.255 Bilge pumps and piping. This section would require each vessel to be equipped with a pump capable of draining any watertight compartment other than small buoyancy compartments, such as buoyancy air tanks. A portable bilge pump would be required to be provided with suitable suction and discharge hoses.

A vessel of more than 79 feet in length would be required to be equipped with a fixed, powered, self-priming bilge pump. This pump could be used for other purposes, except as a required fire pump, and would have to be fixed to a bilge manifold. Each bilge suction line would be required to be led to a manifold and be fitted with a stop valve and a check valve. The stop valve and the check valve would aid in preventing unintentional back flooding of spaces while using the bilge piping system.

Section 28.260 Electronic position fixing devices. This section proposes requirements for each documented vessel of more than 79 feet in length that operates beyond the Boundary Line or with more than 16 individuals on board to be equipped with an appropriate electronic position fixing device. There is presently no such requirement in 46 CFR subchapter C—Uninspected Vessels, although many commercial fishing industry vessels are so equipped. Acceptable devices would include a LORAN receiver, a satellite navigation receiver, or another electronic device which provides accurate fixes in the area in which the vessel operates.

Section 28.265 Emergency instructions. The Emergency Instructions would be required for a documented vessel that operates with more than 16 individuals on board. They are considered necessary to ensure that the master or individual in charge of the vessel formally assigns crewmembers to specific emergency duties and provides for the contingencies involved with

abandoning the vessel. The Emergency Instructions would be required to list the fire, emergency, and abandon ship signals; the location of the immersion suits; and instructions for donning the immersion suits and to be posted in conspicuous locations accessible to all individuals on board. The Emergency Instructions would result in better organization and less confusion during an emergency.

Section 28.270 Instructions, drills, and safety orientation. This section would require the master or individual in charge to ensure that drills were conducted and instruction given at least once each month and that each individual was familiar with their assigned duties and the proper methods to be used during emergencies and other evolutions. The proper procedures to be followed for emergent and non-emergent evolutions would include, as a minimum, abandoning ship, fighting a fire, recovering an individual from the water, minimizing unintentional flooding, launching survival craft and recovering lifeboats and rescue boats, and donning immersion suits.

The master or individual in charge would not be required to conduct the instruction or drills. A professional trainer or any other qualified individual could conduct the required instruction on the vessel or aid in conducting drills. The Coast Guard believes that the training is most useful if conducted on the vessel; however, the proposed rule would permit training at other locations. Specific comments are requested on the usefulness of instruction carried out at other locations and on the use of prepared training materials such as video tape presentations.

The master or individual in charge of a vessel would be required to give a safety orientation to any individual on board the vessel that had not received instruction and participated in drills. This safety orientation would be required prior to operating with that individual on board. This would provide a minimum level of understanding of emergency procedures for each individual on board regardless of how long they had been on board.

Coast Guard investigation of casualties on commercial fishing industry vessels has shown repeatedly that being unfamiliar with immersion suits, liferaft launching procedures, and proper abandon ship procedures have needlessly resulted in deaths and injuries. This section is meant to ensure that crew members know the proper procedures for the use of the required lifesaving equipment and are familiar

with and practiced in the use of equipment needed during an emergency.

Many comments on the ANPRM pointed out the need for licensed individuals on board commercial fishing industry vessels, especially those carrying large numbers of individuals or those that operate on exposed waters. Crew training and licensing are issues under study by the Coast Guard, in consultation with the Committee; however, the requirements proposed in this section are independent of that study. The requirements proposed here are in keeping with good marine practice.

The Committee was concerned with the quality of the instruction and drills. Discussions by the Committee centered around the inability of an individual to conduct effective training without a thorough knowledge of proper procedures. Therefore, the Committee recommended that the individual providing the training be required to be properly trained prior to instructing others.

Section 4502(b) of the Act requires regulations for installation, maintenance and use of specific equipment. This authority permits requirements for training, instruction, and drills in the use of emergency and lifesaving equipment as recommended by the Committee. Consequently, this section contains a proposed requirement that an individual conducting drills or instruction must have been trained in the proper procedures. A three year period would be provided to allow individuals needing this training to obtain it. Specific comments are requested on the extent, cost, availability, duration, and documentation relative to training proposed in this section.

Subpart D—Requirements for Vessels Which Are Built After or Which Undergo a Major Conversion Completed After [Insert the effective date of these regulations] and That Operate With More Than 16 Individuals On Board

This subpart proposes requirements for commercial fishing industry vessels which are built or converted after the effective date of the regulations and that operate with more than 16 individuals on board. These requirements are in addition to the requirements of subparts A, B, and C. This means that applicable portions of subparts A, B, and C would apply also. For instance, a vessel built after the effective date of the regulations which does not operate with more than 16 individuals on board and does not operate beyond the Boundary Line would not be subject to the requirements of subparts C and D, but would be subject to the requirements of

subparts A, and B. If that same vessel were to operate beyond the Boundary Line, the requirements of subpart C would then apply, and if the vessel operated with more than 16 individuals on board, the requirements of subparts A, B, C, and D would apply.

Section 28.300 Applicability. The requirements proposed in this subpart and made applicable by this section are in response to 46 U.S.C. 4502(c). Those proposals, in many cases, are more detailed than those of the other subparts and are targeted at safety improvements that can only be accomplished by building in the safety features during original vessel construction.

Section 28.305 Compliance date for survival craft on new or converted vessels. This section would require that each vessel built after or which undergoes a major conversion completed after the effective date of these regulations be equipped with the survival craft required by § 28.125 on the date that construction or conversion was completed. Paragraph 28.125(b) provides for delayed implementation of the requirements for survival craft for the reasons previously mentioned. Those provisions would not apply to a vessel which was built or which underwent a major conversion completed after the effective date of these regulations.

Section 28.310 Launching of survival craft. This section would require that a gate or other opening be provided in bulwarks, deck rails, or lifelines to facilitate the launching of survival craft which weigh more than 110 pounds.

Section 28.315 Fire pumps, fire main, fire hydrants, and fire hoses. This section would specify the fire fighting equipment required to provide what is considered to be the minimum acceptable level of safety on commercial fishing industry vessels.

Each vessel more than 36 feet in length would be required to be equipped with a fixed, powered, self-priming fire pump connected to a fixed piping system. The pump and the piping system would not be required to be for the exclusive use of fire fighting, but could not be connected to serve as a bilge pump, as previously discussed. In addition, a vessel over 79 feet in length would have performance standards applicable to the fire pump and piping system similar to the performance standards for inspected vessels.

Since it would be uncommon to have a manned engine room on most commercial fishing industry vessels, the powered fire pumps would have to be capable of being started from the fire pump and the operating station, including remotely controlling any

necessary valves. This same performance standard has been proposed for small passenger vessels (CGD 85-080, RIN 2115-AC22.)

Each fire hose on a vessel over 79 feet in length would be required to be of commercial grade fire hose with a corrosion resistant nozzle capable of producing a solid stream and a spray pattern. These requirements, while less specific, are similar to those for inspected vessels. Vessels 79 feet in length or less would be permitted to use good commercial grade hose, if at least ¾ nominal diameter and fitted with an appropriate corrosion resistant nozzle capable of both a solid stream and spray pattern. Good commercial grade hose of any size would be fitted with corrosion resistant fittings.

Fire hydrants on vessels of more than 79 feet in length would be required to be so located and in sufficient number that any location on the vessel could be reached with 2 charged fire hoses. Each fire hydrant would also be required to be fitted with a fire hose at all times that the vessel is operating.

Section 28.320 Fixed gas fire extinguishing systems. Each vessel over 79 feet in length would be required to be equipped with a fixed gas fire extinguishing system in a space containing an internal combustion engine of more than 50 horsepower, an oil fired boiler, or a gasoline fuel storage tank. The fixed fire extinguishing system would be required to be approved by the Coast Guard and custom engineered, unless it was an approved pre-engineered system. "Pre-engineered" and "custom engineered" are industry terms and are defined in § 28.050.

Fixed gas fire extinguishing system components would be required to be listed by an independent laboratory, such as Underwriters Laboratories, Inc. The fire extinguishing system design and installation would be required to be in accordance with the Coast Guard approved "Manufacturer's Marine Design, Installation, Operation, and Maintenance Manual." Guidance on design and installation of fixed fire extinguishing systems is contained in Navigation and Vessel Inspection Circular 6-72, Change 1 (NVIC 6-72, Ch-1), "Guide to Fixed Fire Fighting Equipment Aboard Merchant Vessels", dated February 28, 1977. The provisions of this circular are well known to manufacturers of fixed extinguishing systems. A listing of approved fire extinguishing systems is contained in Commandant Instruction M16714.3C, "Equipment Lists" and is available from the Government Printing Office.

Several types of extinguishing system arrangements would be available in choosing a system, depending upon the size of the space protected. A space with a gross volume exceeding 6000 cubic feet would be required to be fitted with a manually actuated and alarmed system; a smaller space could also be so fitted. A system capable of automatic discharge upon heat detection would only be permitted in a normally unoccupied space with a gross volume of 6000 cubic feet or less. A pre-engineered system would be permitted only in a normally unoccupied machinery space, paint locker, or a space containing flammable liquid stores with a gross volume of not more than 1200 cubic feet. A fixed fire extinguishing system would be permitted to protect more than one space, provided the amount of extinguishing agent was sufficient to protect the largest space.

A pre-engineered fire extinguishing system would be required to be fitted so that the system could be manually actuated from outside the space protected in addition to any automatic actuation. The system would also be required to be equipped with a light and audible alarm at the operating station to indicate discharge, an automatic device to shut down ventilation in the protected space, and a means to reset these ventilation systems after discharge.

In developing these proposed requirements for fixed gas fire extinguishing systems, the following requirements and recommendations for other vessels were considered: 46 CFR subchapter H (Passenger Vessels), 1974 Safety of Life at Sea Convention, NVIC 6-72, Ch-1, NVIC 5-86 "Voluntary Standards for U.S. Uninspected Commercial Fishing Vessels", National Fire Protection Association Standard 101 "Life Safety Code", Canadian regulations for small passenger vessels, and the proposed rules for small passenger vessels (CGD 85-080, RIN 2115-AC22).

Section 26.325 Fire detection systems. This section would require independent smoke detectors in accommodation spaces of vessels which operate with more than 49 individuals on board. As an alternative, a Coast Guard approved smoke detection system could be installed. Independent modular smoke detectors would be required to comply with Underwriters Laboratories Standard UL 217 and to be listed as a "Single Station Smoke Detector—Also Suitable For Use in Recreational Vehicles." Protection of accommodation spaces on vessels with a relatively large number of individuals

is considered necessary, especially in staterooms. This requirement is expected to have a small impact on the commercial fishing industry because of the small number of vessels that operate with more than 49 individuals on board.

Section 26.330 Galley hood and other fire protection equipment. This section would require that each vessel with more than 49 individuals on board to be fitted with a grease extraction hood and a pre-engineered dry or wet extinguishing system over each grill, broiler, and deep fat fryer. The grease extraction hood would be required to comply with UL 710, and the extinguishing system would be required to comply with National Fire Protection Association Standard 17 or 17a. A large portion of vessel fires originate in the galley; this equipment would help prevent fires and quickly control those that start.

Section 26.335 Fuel systems. This section contains requirements for fuel systems on board commercial fishing industry vessels, except fuel systems on outboard engines. Portable fuel tanks would be required to meet the requirements of American Boat and Yacht Council (ABYC) Project H-25, "Portable Fuel Systems and Portable Containers for Flammable Liquids."

Alternatives to the requirements of this section would be permitted for vessels of 79 feet in length or less. The standards of ABYC Project H-33—"Diesel fuel systems", chapter 5 of the National Fire Protection Association (NFPA) Standard 302—"Pleasure and Commercial Motor Craft", or 33 CFR subchapter S—Boating Safety would be permitted as substitutes.

The Committee felt that this class of vessel (those that operate with more than 16 persons on board) should be prohibited from having main propulsion engines or generator prime movers powered by gasoline, because of the explosion hazard of gasoline. The Committee also recommended that bunker C be permitted as a fuel. The Coast Guard agrees with the Committee. Gasoline would be prohibited as a fuel, except for use in outboard engines; and bunker C fuel would be permitted. Because of the viscosity of bunker C, it is frequently heated to permit easier pumping and transfer on board the vessel. This heating can cause safety problems if not done properly. Therefore, bunker C installations would be required to comply with the requirements for fuel systems for inspected vessels, in 46 CFR subchapter F—Marine Engineering.

Vents for integral fuel oil tanks would be required to be fitted to the highest

point in the tank, terminate in a 180 degree bend on the weather deck, and be fitted with a flame screen. These practices are common practice in the marine industry. Also, tanks that could be filled under pressure would have to have a venting area at least equal to the area of the fill line. This would aid in preventing tank overpressurization. A tank that is not filled under pressure would be required to have a venting area of not less than 0.022 square inch.

Fuel piping would be required by this section to be at least 0.035 inch in thickness. It would also be required to be seamless and of steel, annealed copper, copper-nickel, or nickel-copper with two exceptions. Aluminum piping would be permitted in spaces outside a machinery space. Aluminum, with its relatively low melting point, is considered to be unsuitable for fuel oil transfer in machinery spaces. Nonmetallic flexible hose would be permitted in lengths not exceeding 30 inches. Nonmetallic flexible hose is commonly used to provide flexibility in fuel lines, especially at connection points to internal combustion engines.

Nonmetallic flexible hose would not be permitted to penetrate a watertight bulkhead. It would also be required to be in an accessible location so that leaks could be easily detected and repaired.

Fuel piping subject to head pressure from fuel in a tank would require a positive shutoff valve. This shutoff valve would be required to be operable from outside the space in which the valve is located. Many engineroom fires could have been quickly brought under control if the supply of fuel oil to the fire was stopped. The fuel shutoff valve will provide that capability.

Section 26.340 Ventilation of enclosed engine and fuel tank spaces. This section proposes requirements for vessels which store gasoline engines or gasoline storage tanks in spaces that could entrap gasoline vapors. Such spaces would be required to be fitted with mechanical ventilation systems with nonsparking fans. As an alternative, vessels of not more than 65 feet in length could meet the standards of NFPA 302, chapter 2, section 2-2 or ABYC Project H-32 "Ventilation of Boats Using Diesel Fuel" and 33 CFR part 183, subpart K.

Section 26.345 Electrical standards for vessels of not more than 79 feet in length. This section would prescribe the requirements and alternative standards for electrical systems on vessels of not more than 79 feet in length. Such vessels could comply with the same electrical standards for vessels of more than 79

feet in length or alternative standards. The alternative standards that could be met are ABYC Projects E-8 "AC Electrical Systems on Boats" or E-1 "Bonding of Direct Current Systems" and E-9 "DC Electrical Systems on Boats," as appropriate for the vessel's electrical system, combined with either NFPA 302 chapter 7 "Electrical Systems Under 50 Volts" and chapter 8 "Alternating Current (AC) Electrical Systems on Boats" or 33 CFR 183, subpart I and § 28.375.

Section 28.350 General requirements for electrical systems. This section would require electrical equipment in the weather or in a location exposed to seas to be waterproof, watertight, or enclosed in a watertight housing. Aluminum would be prohibited as a current carrying part of electrical equipment or as wiring. Metallic enclosures and frames of electrical equipment would be required to be grounded.

This section would require the amount of electrical equipment to be kept to a practicable level in a space likely to contain vapors from flammable or combustible liquids. Electrical equipment required in such spaces would be required to be explosionproof or intrinsically safe. Guidance on explosionproof and intrinsically safe installations is contained in 46 CFR subchapter J and NVIC 2-89 "Guide for Electrical Installations on Merchant Vessels and Mobile Offshore Drilling Units", dated 14 August 1989.

This section would also require a continuous, non-current carrying grounding conductor on each nonmetallic hull vessel. This grounding conductor would be required to connect the enclosures and frames of electrical equipment and other metallic items such as engines, fuel tanks, and electrical equipment enclosures to a common ground point. This grounding conductor would have to meet the requirements of Section 250-95 of the National Electrical Code, NFPA 70.

Section 28.355 Main source of electrical power. This section would require at least 2 sources of electrical power, if any of the essential loads rely on electrical power. Essential loads include interior lighting, steering systems, communication systems, navigation equipment, navigation lights, fire protection equipment, bilge pumps, and the propulsion system and its auxiliaries and controls. If the two sources of electrical power are generators, they would be required to have independent prime movers. Means other than generators could supply the necessary electrical power for the essential loads.

Section 28.360 Emergency source of electrical power. This section would require vessels of more than 36 feet in length to have an emergency source of electrical power which is capable of supplying connected loads for at least 3 hours and which is physically separated from the main machinery space. This separation would help ensure that one casualty did not disable all sources of power. Vessels of 79 feet in length or less would only be required to have emergency lighting, navigation equipment, and communication equipment connected to the emergency source of power, if the propulsion and steering systems did not rely on electrical power. Vessels of 36 feet in length or less would not be required to have an emergency source of power if flashlights are provided, unless required for communication equipment by § 28.245(h). The prime mover of a generator used as an emergency source of power would require a separate fuel supply.

Section 28.365 Distribution systems. This section would require that a distribution system which has a neutral bus or conductor have the neutral bus or conductor grounded. It would also require a grounded distribution system to have only one connection to ground. The one connection to ground would be required to be at the switchboard or, on a nonmetallic vessel, the common ground point.

Section 28.370 Overcurrent protection. This section would require that each source of power be protected against overcurrent and that overcurrent protection for generators not exceed 115% of the full load rating. Steering systems would be required to be protected from short circuits only.

An ungrounded current carrying conductor would be required to be protected against overcurrent in accordance with its current rating by a circuit breaker or a fuse at the switchboard or distribution box from which it leads. Circuit breakers and switches would be required to open all ungrounded conductors. Further, all devices that disconnect a grounded conductor would be required to disconnect ungrounded conductors as well. These measures would ensure that all conductors on the load side of the switch or circuit breaker were electrically neutral.

Navigation light circuits would be required to have the necessary circuits switched so that only the appropriate circuit could be energized. If the vessel was engaged in fishing operations, the appropriate fishing navigation lights could be energized. A separate circuit would be required for each installed

radio transceiver or radiotelephone. This is intended to improve the reliability of power to the communications equipment.

Section 28.375 Wiring methods and materials. This section would require all cable and wire to be insulated, copper, stranded, and appropriately sized. Solid wire conductors, such as are common in household applications, have proven to adversely affect the reliability of connections on board ships. The lack of flexibility offered by solid wire conductors is not compatible with the vibrations in the marine environment. However, stranded wire is not affected by the vibrations to the same degree.

Conductors would be required to be sized so that the voltage drop caused by the conductors did not exceed 10%. Conductors would be required to meet one of several recognized industry standards for material and construction. Metallic cable armor would be required to be electrically continuous and grounded to the metal hull or the common ground point for a nonmetallic hull. Connections for conductors would be required to be made only in fire retardant enclosures, such as junction boxes.

Section 28.380 General structural fire protection. Fire protection, to a large extent, can only be designed and built into a vessel. The requirements proposed in this section are consistent with the Coast Guard's fire protection philosophy of limiting combustibles and containing a fire in the space of origin.

The requirement to insulate heated surfaces is a restatement of good marine practice from the standpoint of personnel safety and fire protection. ABYC standard P-1 is considered an appropriate standard for dry exhaust systems on vessels with combustible hulls, where special care must be taken to prevent ignition of the hull material.

Machinery and fuel tank spaces would be required to be separated from accommodation spaces by a vapor tight boundary. Fires often originate in accommodation spaces. A fire in an accommodation space could easily spread to a fuel tank space or a machinery space with catastrophic results, unless vapor tight boundaries separate them. Another consideration is that flammable vapors could accumulate in accommodation spaces from adjoining machinery or fuel tank spaces and be accidentally ignited in the accommodation space.

Paint and flammable liquid stores present an obvious fire/explosion hazard since there is a concentrated fire load in the possible presence of flammable vapors. Lockers of steel or

with a steel lining would be required for the purpose of containing a fire within a paint or flammable liquid storage space to that space.

Insulation in spaces where flammable vapors are present will absorb the vapors and in time become combustible regardless of the original fire resistance of the insulation. A vapor barrier would be required as a covering for insulation in spaces containing flammable vapors, such as enginerooms and paint lockers, to prevent absorption of those vapors.

Nitrocellulose or noxious fume producing paints or lacquers would not be permitted. There is a similar requirement on all inspected vessels.

Mattresses would be required to meet the flammability standards applicable to all mattresses sold commercially in the U. S. and polyurethane mattresses would be prohibited because of the toxic fumes generated if ignited.

Fiber reinforced plastic vessels would be required to be constructed using fire retardant resin if the vessel operates with more than 16 individuals on board. This requirement would permit the flexibility of using plastic hulls but allow a minimum measure of fire protection for the highly combustible hull material.

A fire alarm system would be required on each vessel to permit rapid notification of all individuals on board in the event of a fire. Early, positive action in the event of a fire is critical to controlling the fire.

Noncombustible surfaces would be required within 3 feet of cooking appliances. Alternatively, combustible surfaces within 3 feet of cooking appliances could be sheathed in metal.

Section 28.385 Structural fire protection for vessels that operate with more than 49 individuals on board. This section proposes additional structural fire protection requirements based upon the Coast Guard's concern for the increased risk to additional personnel present. Additional protection of accommodation spaces would be provided by requiring bulkheads and decks of accommodation spaces which separate them from control stations, machinery spaces, cargo spaces, or service spaces to be constructed of noncombustible material. With more individuals on board there is greater likelihood of fire, and a greater degree of protection is required for accommodation spaces. This requirement would prevent major bulkheads from being constructed of wood. Additionally, major structural components, such as the hull, decks, and columns would be required to be of steel.

The Committee pointed out the need for light weight deck houses and

superstructures. The additional weight of steel used to construct deckhouses and superstructures adversely affects stability (relatively high weight in a relatively high location) and thereby limits the cargo capacity. As a consequence, aluminum would be permitted for the construction of deckhouses and superstructures. This provides a reasonable balance between fire protection and stability, and the economy issues raised by the Committee.

Section 28.390 Means of escape. Escape from interior spaces, whether accommodation spaces or work spaces, is a key safety item and an integral facet of structural fire protection. There are numerous cases of individuals being trapped in interior spaces during fires or sudden capsizing. Noncombustible bulkheads play a key role in protecting escape routes, just as the arrangement of the escape routes does. This section proposes requirements for means of escape. This proposal is intended to minimize the possibility of individuals being isolated in interior spaces in the event of an emergency.

Each space used on a regular basis and which is generally accessible to individuals would be required to have two means of escape, one of which must provide a satisfactory route to weather. These means of escape may take the form of passageways, stairways, ladders, deck scuttles, or windows. A means of escape would be required to be capable of being opened by one individual from either side in light or dark conditions and would be required to open in the direction of expected escape. A deck scuttle used as a means of escape would be required to be quick acting and arranged with a holdback to prevent it from closing unexpectedly while being used for egress. Ladders, footholds, and handholds would be required to be of rigid construction and suitable for emergency use. A window or windshield, suitably located and of sufficient size would be permitted to serve as an emergency means of escape. This would provide a convenient means of ensuring a second means of escape at the operating station of small vessels.

Section 28.395 Embarkation stations. This section would require each vessel to have at least one survival craft embarkation station to allow all personnel to board survival craft in the event the vessel must be abandoned. If work spaces or accommodation spaces are widely separated, additional survival craft embarkation stations would be required. Since survival craft are the last resort for safe refuge in an emergency, adequate arrangements must be provided to allow crew and

workers to quickly and safely board the survival craft.

Section 28.400 Navigation equipment. Each vessel would be required to be fitted with a radar and an echo depth sounding device. It is believed that nearly all of the existing vessels in this class are presently equipped with radar.

The echo sounding device is a navigational device that can improve the safety of navigation. Many groundings would be prevented by the proper use of an echo sounding device. Commercial fishing industry vessels suffer from groundings more frequently than other classes of vessels. A grounding frequently leads to capsizing of the vessel with resultant peril to the individuals on board.

Section 28.405 Hydraulic equipment. Coast Guard investigation of deaths and injuries on commercial fishing industry vessels show that hydraulic equipment is frequently involved. The Committee was concerned for the dangers presented by improper construction and operation of hydraulic equipment. This section proposes design requirements for hydraulic systems to help ensure safe installation and operation. The requirements proposed in this section are considered to address the type of risk contemplated in section 4502(b)(7) of the Act.

Piping systems would be required to be designed with a burst pressure of 4 times the relief pressure on the required pressure relieving device. Suitability of all materials in a piping system in relation to the fluid used and the operating temperature would also be required.

Except for steering systems, controls for hydraulic equipment would have to be located where the equipment operator would be able to have an unobstructed view of the work area. Controls for hydraulic equipment would be required to be arranged so that equipment could be disengaged in an emergency, such as when an individual is caught in a line which is controlled hydraulically. This requirement would also apply to automatically controlled hydraulic equipment. Further, hydraulic equipment would be required to be equipped so that uncontrolled movement of the equipment would be prevented upon loss of hydraulic pressure, such as in the case of a ruptured line. These requirements are intended to reduce the likelihood of injuries associated with operation of hydraulic equipment. These requirements are similar to recommendations in the *Vessel Safety Manual* published by the North Pacific

Fishing Vessel Owners' Association. The manual also contains other valuable recommendations concerning hydraulic equipment.

Section 28.410 Deck rails, lifelines, storm rails, and hand grabs. Deck rails and grab rails would reduce the chance of workers slipping or being washed overboard. These requirements are similar to the requirements for inspected vessels.

This section specifies the minimum height and construction of deck rails, hand grabs, and bulwarks. Two comments to the ANPRM expressed concern that rails would interfere with normal fishing operations. This is not the intent of this section. Therefore, this proposal includes provisions to permit portable stanchions and lifelines as a substitute for fixed rails where fixed rails would impede fishing operations.

Subpart E—Stability

Approximately 70% of deaths involving commercial fishing industry vessels are related to stability. The Act recognized the hazards of improper design or operation as they relate to stability by requiring stability regulations for vessels which are built, or the physical characteristics of which are substantially altered in a manner that affects the vessel's stability, after December 31, 1989.

An examination of search and rescue and casualty data for 1987 and 1988 reveals that the majority of stability related cases can be attributed to watertight hull integrity problems or operational errors. The data clearly shows that unintentional flooding is involved in many major casualties. A one compartment flooding standard would prevent capsizing or sinking in most of these cases.

Casualty data for the years 1982 to 1987 shows that stability related casualty rates are independent of vessel length or vessel hull material. The data also shows that stability related casualties are independent of the geographic area of operation.

Section 28.500 Applicability. This proposed subpart would apply to all vessels built after the effective date of the regulations. The Act specifies that each vessel built after or which is substantially altered after December 31, 1989, be subject to regulations for operational stability. Since regulations were not finalized by December 31, 1989, there will be no stability evaluations required prior to the effective date of these regulations.

There would be an exclusion for a vessel that is issued a Load Line Certificate under 46 CFR subchapter E. The stability of a vessel is reviewed

prior to issuance of a Load Line Certificate.

Section 28.505 Owner's responsibility. This section would place on the owner of a commercial fishing industry vessel the burden of selecting a qualified individual to evaluate stability under this subpart. The owner would be responsible for maintaining calculations and test results from the stability evaluation.

The Coast Guard proposed third party review of stability calculations to the Committee. After long discussions of the benefits and disadvantages of such an arrangement, the Committee recommended that no third party review of calculations be required, arguing that the cost of such verification did not justify the benefits. As a consequence of that recommendation, no third party verification of stability evaluations is proposed in this NPRM. This places the burden for ensuring that stability is evaluated in accordance with this subpart by a qualified person on the owner. Since most vessel owners have only a limited understanding of the technicalities of stability calculations and how small design changes affect stability, selection of an experienced naval architect or other qualified person becomes critical from the owner's standpoint.

Comments concerning this arrangement are specifically requested from owners, designers, naval architects, and underwriters of primary insurance.

Section 28.510 Definitions of stability terms. The meaning of many of the stability terms used in this subpart are similar to those contained in 46 CFR Subchapter S—Subdivision and Stability.

Section 28.515 Submergence test as an alternative to stability calculations. This section proposes a submergence test that would be accepted in lieu of the more complicated and possibly more expensive stability calculations. The submergence test proposed is similar to the submergence test required for some recreational boats under 33 CFR part 183. Alternatively, a plate affixed to a vessel by the manufacturer under 33 CFR part 183 would also be accepted in lieu of calculations or the submergence test described in this section.

In the opinion of the Committee, a simple stability assessment is necessary so as not to place an economic hardship on the owners of small commercial fishing industry vessels.

Specific provisions are included for the weight expected from the loading of fish since this cargo can weigh more than the vessel itself on a small vessel. The Coast Guard believes that owners

of many vessels under 25 feet in length will find the submergence test more suitable than stability calculations. The owner of a decked vessel may find calculations more suitable than this submergence test because of inability of the vessel to survive simultaneous flooding of the two largest compartments or because of the effort and expense necessary to protect the vessel to withstand submergence.

Section 28.520 Alternate simplified stability test for small vessels. This section proposes a simplified stability test to evaluate the intact stability of a vessel in lieu of the more complicated stability test and stability calculations in §§ 28.525 through 28.545 and 28.565 through 28.575. This simplified stability test could be used by owners of vessels of less than 79 feet in length, if the angle of downflooding exceeds 40 degrees.

Both the Committee and the Coast Guard officers serving as Fishing Vessel Safety Coordinators in the Coast Guard District offices have repeatedly stressed the importance of providing a simple method of evaluating stability for small vessels. The simplified stability test proposed here is very similar to the simplified stability test for small passenger vessels in 46 CFR 171.030.

Many comments to the ANPRM stability provisions urged simplified stability regulations, stressing the high cost of a stability test and development of stability calculations compared to the cost of a small vessel.

A vessel which would meet the proposed requirements for a simplified stability test would not be exempt from the subdivision requirements of § 28.580, however, unless compliance with the alternative subdivision requirements in § 28.525 could provide a simplified means of demonstrating adequate subdivision.

Section 28.525 Alternative subdivision. This section proposes a means of ensuring adequate subdivision for vessels less than 79 feet in length, which would be much simpler than the calculations required by § 28.580 and, therefore, less costly. The method proposed by this section would require only a simple calculation to determine the spacing of watertight bulkheads. This section, when used in conjunction with the simplified stability test (for vessels of less than 79 feet in length), would permit the majority of commercial fishing industry vessels to dispense with a stability test and stability calculations.

Section 28.530 Stability instructions for operating personnel. This section would require stability instructions for personnel who operate commercial fishing industry vessels to ensure that

those personnel can maintain loading so that the applicable stability criteria are met. These stability instructions would be required to be in a form readily usable by the master or the individual in charge of the vessel. For inspected vessels, the Coast Guard reviews stability information to ensure that the information provided to operating personnel is suitable and accurate. With no regulatory body examination of stability evaluations or stability instructions for commercial fishing industry vessels proposed in this NPRM, the responsibility for determining the accuracy and detail of stability instructions rests with the owner.

The necessary instructions will vary with vessel design, outfitting, fishing methods, and operating personnel experience and training. A list of items that must be considered for inclusion in the stability instructions is offered to help ensure needed information is provided. Much of the information in this list would not be necessary on many vessels.

The Committee recommended that the Coast Guard require pictorial guidance and a one page summary for each vessel. This could be appropriate for some vessels, but not for other vessels. Therefore, determining the best form for presenting the required information would be left to the owner. The Coast Guard expects that for most vessels, the stability evaluator and the owner will jointly decide on the content and form of the stability information necessary so that operators have the information necessary to properly load the vessel.

Section 28.535 Inclining test. This section would require an inclining experiment when accurate determination of a vessel's weight and locations of the centers of gravity is necessary to determine compliance with the applicable stability requirements. Provision is made for using less accurate procedures, such as a deadweight survey, when the stability of a vessel is sufficient to assume margins of safety in the stability criteria, and for using the stability test results for a vessel of the same arrangement, outfitting, and loading. Navigation and Vessel Inspection Circular 15-81 "Guidelines for Conducting Stability Tests" provides valuable information for those conducting inclining experiments.

Section 28.540 Free surface. This section provides for calculating the effect of liquids that shift within or between tanks as a vessel heels. The minimum number of slack tanks (tanks which are not full) to be considered and the method of selecting tanks to be considered is described in § 28.540(a). Consideration of the effects of shifting

liquids is necessary for all vessels as the liquids on board are continually changing and can have an adverse effect, if not given proper attention. Methods of calculating the effect of shifting liquids vary in ease of use and accuracy. The normally used surface inertia method is relatively conservative but is easy to use. More accurate methods could be used by the owner or the stability evaluator.

The effects on intact stability of shifting fluids are required to be addressed in stability evaluations reviewed by the Coast Guard for inspected vessels. Those who develop stability instructions for operating personnel would be expected to consider guidance on limiting the adverse effects of shifting liquids, as required by § 28.530(b)(4).

Section 28.545 Intact stability when using fishing gear. This section would require an evaluation of heeling moments imposed on a vessel by suspended weights, such as fishing nets. A vessel with a certain lifting moment, as specified by a formula, would perform further evaluation. This standard is similar to the lifting criterion of 46 CFR subchapter S and would apply to only a small number of vessels due to the threshold for further evaluation. The requirements of this section are considered necessary since lifting weights adversely affects stability and can result in sudden capsizing, if done improperly.

Section 28.550 Icing. This section would require that the effects of ice on a vessel's structure be considered during the stability evaluation, if a vessel operates in the specified regions during the specified times. Icing of a vessel results in a topside weight addition and a consequent rise in the vertical center of gravity. This method of evaluation is recommended in NVIC 5-86 and is similar to the recognized international standard for commercial fishing industry vessels. Those concerned with the stability instructions for operating personnel should consider providing guidance on the meteorological conditions which favor icing and the best methods to minimize icing and the effects of icing in accordance with § 28.530(b)(9).

Section 28.555 Freeing ports. This section proposes requirements for the drainage of weather decks, to minimize the added weight and free surface effects of boarding seas. Few vessels can meet the proposed stability criteria unless boarding seas are assumed to be rapidly removed. This standard for freeing ports was suggested in NVIC 5-86 and is similar to that required by the American Bureau of Shipping for small

vessels and to that of recognized international standards for commercial fishing industry vessels. A reduction in freeing port area would be provided for vessels that operate exclusively on protected waters, where boarding seas are not expected.

Section 28.560 Watertight integrity above the main deck. This section would require watertight coamings and weathertight closures to prevent the inadvertent entry of sea water into the interior of the vessel. Coamings help ensure that water on deck will not normally enter openings in decks and bulkheads during normal operation.

Section 28.565 Water on deck. The proposed requirements of this section would guard against vessel capsizing due to water trapped on deck by bulwarks. This section would not apply to a vessel that did not have bulwarks. This standard was originally presented in NVIC 5-86 and is similar to recognized international standards for commercial fishing industry vessels. Specific comments from designers are requested on alternative methods of analyzing the effect of large quantities of trapped water on deck.

Section 28.570 Intact righting energy. This section contains the basic stability criteria proposed for fishing vessels and were developed internationally 20 years ago. It has been successfully applied in the United States for many years to many different vessel types. However, the range of positive stability proposed here, 60°, is greater than that for other vessel types, 50°. The larger range of positive stability is critical to the ability of a small vessel, such as many commercial fishing industry vessels, to remain upright in relatively large or breaking waves.

There was concern by the Committee that too little is known about the stability of commercial fishing industry vessels of less than 79 feet in length. Other countries have applied similar criteria to vessels of over 40 feet (12m) in length. Comments from designers are specifically requested concerning their experiences with applicability of these criteria or similar criteria for vessels of less than 79 feet in length.

Section 28.575 Severe wind and roll. This section proposes an intact stability criterion for fishing industry vessels to ensure that the wind area is not mismatched to the vessel's intact stability. It was recommended in NVIC 5-86, in a slightly different form, and is similar to recognized international standards. This criterion evaluates the possibility of a vessel capsizing in a beam wind.

Section 28.580 Unintentional flooding. This section proposes requirements for evaluation of unintentional flooding from leaking hull penetrations or collision damage. Calculations would be necessary for vessels of over 40 feet in length, the lower length limit for flooding standards applied to small passenger vessels. The transverse extent of damage, 30 inches, is similar to the standards proposed in 46 CFR Subchapter L—Offshore Supply Vessels Including Liftboats (54 FR 26006), CGD 82-004, RIN 2115-AA77 and international standards for Offshore Support Vessels, and was recommended in NVIC 5-86.

As an alternative to meeting the requirements of this section, a vessel may be examined annually by a surveyor of the American Bureau of Shipping, a similarly qualified organization, or an accepted organization. Many cases of unintentional flooding are the result of leaking through-hull penetrations caused by poor maintenance or inappropriate material selection. Annual examinations by qualified persons should help alleviate these problems. The annual examination would include an examination of the hull and a check for compliance with applicable provisions of title 46 Code of Federal Regulations, and the reporting requirements of § 28.610 would apply, as well.

Definitions of a "similarly qualified organization" and an "accepted organization" are contained in § 28.090.

Subpart F—Fish Processing Vessels

This subpart would apply to all fish processing vessels in addition to the requirements of subparts A through E. The requirements proposed in this subpart are in response to sections 4502(f) and 4503 of the Act.

Section 28.600 Applicability. Fish processing vessels of over 5,000 gross tons are subject to inspection under the provisions of 46 U.S.C. 3301(11) and would not be subject to this subchapter. All other fish processing vessels, as defined in § 28.090, would be subject to this subpart.

Section 28.610 Examination and certification of compliance. This section proposes to require each fish processing vessel to be examined for compliance with Title 46, Code of Federal Regulations at least once every two years. Most of the requirements applicable to fish processing vessels of less than 5,000 gross tons are contained in this part (46 CFR part 28).

The examination would have to be performed by the American Bureau of Shipping, a similarly qualified organization, or an accepted

organization. The organization performing the examination would be required to provide the owner and the cognizant Coast Guard District Commander with a copy of the signed certification letter, if the examination determined that the vessel was in compliance with 46 CFR. A copy of a certification letter would also be required to be maintained on board the vessel.

Section 28.620 Survey and classification. This proposed section would require each fish processing vessel built after, or which undergoes a major conversion completed after, July 27, 1990, to be classed by the American Bureau of Shipping or another organization determined by the Commandant to be similarly qualified. Fish processing vessels subject to this section would have to satisfactorily complete all required surveys and maintain certificates required by the classification society.

Implementation of Regulations

Although commercial fishing industry vessels are uninspected vessels, the Coast Guard will continue to do underway law enforcement boardings. Additionally, an uninspected commercial fishing industry vessel dockside boarding program is being contemplated as an aid in implementing the final rules, helping to educate commercial fishing industry personnel on the provisions of the regulations, and ensuring safety on commercial fishing industry vessels. A similar effort, the Uninspected Towing Vessel Examination Program, was successful in the 1970s on uninspected commercial towing vessels. The Coast Guard is considering conducting safety examinations after assistance has been rendered and during law enforcement boardings.

The Coast Guard is also considering issuance of distinctive decals to identify those vessels that have been boarded, as part of the dockside boarding program. A vessel with a valid decal could be excluded from further random safety examinations, or, if the vessel is boarded, the safety review could be less time consuming, since compliance with the regulations would have already been demonstrated. However, a decal would not grant a vessel immunity from future boardings for law enforcement activities, such as for fisheries verification or drug interdiction.

The Coast Guard is considering authorizing accepted classification societies and accepted organizations, as well as the Coast Guard Auxiliary for small commercial fishing industry vessels, to conduct voluntary safety

examinations. The voluntary examinations would be conducted at a time chosen by the owner. Normally this would be when a vessel was not actively engaged in fishing or fishing associated activities. Vessels found to be in compliance with the regulations would be issued a decal identical to that issued by the Coast Guard.

During public meetings with the Committee, the Coast Guard discussed the efforts of the National Association of Marine Surveyors (NAMS) and the scope of surveys of commercial fishing industry vessels. NAMS presently conducts surveys of commercial fishing industry vessels for a myriad of reasons and frequently includes checking for compliance with the applicable Coast Guard regulations as a service to their clients. They could include similar checks for compliance with the final rules on a routine basis.

NAMS surveyors annually examine approximately 20 percent of the 30,000 documented and 10 percent of the 100,000 state numbered commercial fishing industry vessels. The Coast Guard would like to take advantage of the efforts of private surveyors which belong to organizations, such as NAMS, as a supplement to the uninspected commercial fishing industry vessel boarding program.

Owners of commercial fishing industry vessels could benefit from these examinations by having experienced, professional surveyors verify compliance with the regulations. Third party examinations are required by many underwriters of primary insurance for commercial fishing industry vessels, and those inspections could serve a dual role.

Permitting third party surveyors to issue decals would allow the Coast Guard to more effectively enhance the safety of commercial fishing industry vessels by concentrating its efforts on vessels that did not have decals for random safety checks.

Specific comments are requested from interested parties on any phase of the uninspected commercial fishing industry vessel boarding program, third party examinations, or decals for voluntary examinations.

National Transportation Safety Board Recommendations

In 1986, the National Transportation Safety Board (Safety Board) undertook a safety study to examine actions undertaken by agencies and organizations to address uninspected commercial fishing vessel safety. The Safety Board's study reviewed the results of its investigation activities over

the preceding 18 years and the responses of organizations (public and private) to the Board's recommendations.

On September 1, 1987, Uninspected Fishing Vessel Safety (NTSB/SS-87/02) was published. This safety study is available from the National Technical Information Service, Springfield, VA 22161.

The study focused on review of over 200 uninspected fishing vessel casualty investigations conducted by the Safety Board and over 70 interviews with individuals from all facets of the commercial fishing industry including representatives of commercial fishing vessel associations, educational experts in fishing vessel safety, fishing vessel designers, insurers of commercial fishing industry vessels, equipment manufacturers, marine surveyors, and others.

As a result of the safety study, the Safety Board made 16 new recommendations to the Coast Guard, reiterated two recommendations previously made to the Coast Guard, and highlighted two other recommendations previously made to the Coast Guard. Of those 20 recommendations, 15 involved seeking legislative authority to develop regulations relating to commercial fishing industry vessels. With passage of the Act, the authority to develop regulations in 12 of the 15 areas addressed in those recommendations has been provided (authority has been obtained separately to satisfy one of the recommendations), and they are addressed in this NPRM. Three of the 20 recommendations are pending completion of studies mandated by the Act, including two that require legislative authority; one has been addressed by a separate rulemaking; two are addressed in this NPRM; and one has been classified by the Safety Board as "Closed acceptable action."

M-85-067 Resume research into seakeeping characteristics of small vessels to develop stability standards for fishing vessels such as the AMAZING GRACE.

The Coast Guard intends to approach this recommendation in two phases. Phase one is a contract for a comprehensive study of commercial fishing industry vessel casualties, characteristics, stability information in literature, and existing stability criteria. The Coast Guard is currently in the process of letting the contract. The second phase is to further pursue areas identified as problem areas in the first phase. The second phase may include model testing.

M-86-011 Seek legislative authority to require that stability tests be conducted and that complete stability information be provided to the captains of commercial fishing vessels.

Sections 28.515, 28.520, and 28.535 propose different forms of stability tests for commercial fishing industry vessels built, or the physical characteristics of which are substantially altered in a manner that affects the vessel's operating stability, after the effective date of these regulations. Further, 28.530 requires stability instructions for operating personnel for those same vessels. Authority for these requirements is derived from the Act.

M-87-52 Seek legislative authority to require uninspected commercial fishing vessel captains/owners to provide safety training to all crewmembers.

Section 28.270 would require the master or person in charge of the vessel to ensure that each month drills are conducted and instruction is given to all individuals on board. Also, the master or individual in charge of the vessel would be required to give a safety orientation for any individual on board that had not received the instruction and drills, prior to operating the vessel. The authority for this requirement is the Act.

M-87-53 Seek legislative authority to require exposure suits for each crewmember on an uninspected commercial fishing industry vessel when the vessel operates in cold waters.

Section 28.110 would require immersion suits for each individual on board for such vessels operating north of 32°N or south of 32°S. Authority for these requirements is derived from the Act.

M-87-54 Seek legislative authority to require flooding detection alarms and automatic dewatering systems on uninspected commercial fishing industry vessels.

Sections 28.250 and 28.255 would require bilge alarms and bilge pumping systems for documented commercial fishing industry vessels that operate outside the Boundary Line or that operate with more than 16 individuals on board, regardless of the date of construction. This would involve retrofits for some vessels. Flooding detection alarms and automatic dewatering systems are felt to be somewhat redundant. Automatic bilge pumps are not considered practical for fear of providing a false sense of security on vessels where maintenance appears to be a problem and because of the threat that unknowingly, oil could be pumped overboard. Automatic alarms in conjunction with bilge pumps

provide an adequate level of safety and the level of simplicity considered appropriate for commercial fishing industry vessels.

M-87-55 Seek legislative authority to require fire detection alarms and fixed firefighting systems for engine rooms on uninspected commercial fishing industry vessels.

The Act provides authority for fire protection and firefighting equipment for commercial fishing industry vessels which are built after or which undergo a major conversion completed after December 31, 1988, and which operate with more than 16 individuals on board. Section 28.320 requires, for a vessel of more than 79 feet in length, a fixed gas extinguishing system in each space with an internal combustion engine which exceeds 50 HP, an oil fired boiler, or a gasoline storage tank. It is believed that the majority of damage caused by fires in machinery spaces is a result of inadequate fire extinguishing equipment. Most such fires are detected in a timely fashion; therefore, fire detection alarms are considered to be unnecessary. Authority for these requirements is derived from the Act.

M-87-56 Seek legislative authority to require Coast Guard approved lifeboats or liferafts sufficient to carry all persons on board uninspected commercial fishing industry vessels.

The Act addressed survival craft, specifically in sections' 4502(a), 4502(b), and 4506(b) and lifesaving equipment in section 4502(c). Sections 28.125 and 28.305 of this NPRM propose requirements for survival craft for all individuals on board commercial fishing industry vessels which are dependent upon the area in which the vessel operates. As explained previously, there would be a phase-in period for inflatable survival craft due to the expected problems with manufacturers supplying a large number of inflatable survival craft in a short period of time.

M-87-57 Seek legislative authority to require emergency radios with an independent power source on uninspected commercial fishing industry vessels.

The Act provides limited authority to impose such requirements on certain commercial fishing industry vessels. Section 28.245 would require a means of communication suitable for communicating with a public coast or U.S. Coast Guard station for a documented commercial fishing industry vessel that operates beyond the Boundary Line or that operates with more than 16 persons on board. The communication equipment would have

to be provided with an emergency source of electrical power.

M-87-58 Seek legislative authority to require exposure suits for each crewmember on a fish processing vessel built before January 1, 1988, when the vessel operates in cold waters.

Authority for regulations addressing this recommendation is provided by the Act. See the discussion of recommendation *M-87-53*.

M-87-59 Seek legislative authority to require flooding detection alarms and automatic dewatering systems on a fish processing vessel built before January 1, 1988.

Authority for regulations addressing this recommendation is provided by the Act. See the discussion of recommendation *M-87-54*.

M-87-60 Seek legislative authority to require fire detection alarms and fixed firefighting systems for engine rooms on fish processing vessels built before January 1, 1988.

Authority for regulations addressing this recommendation is provided by the Act. See the discussion of recommendation *M-87-55*.

M-87-61 Seek legislative authority to require Coast Guard approved lifeboats or liferafts sufficient to carry all persons on fish processing vessels built before January 1, 1988.

Authority for regulations addressing this recommendation is provided by the Act. See the discussion of recommendation *M-87-56*.

M-87-62 Seek legislative authority to require emergency radios with an independent power source on fish processing vessels built before January 1, 1988.

Authority for regulations addressing this recommendation is provided by the Act. See the discussion of recommendation *M-87-57*.

M-87-63 Establish standards for the implementation and use of the new 406.025 MHz emergency position indication radiobeacon for uninspected commercial fishing vessels, including proper handling, placement on the vessel, maintenance, and inspection practices.

This recommendation is similar to recommendation *M-80-023*. Section 28.155 of this NPRM in conjunction with the NPRM for emergency position indicating radiobeacons (EPIRBs) for uninspected vessels (CGD 88-016a, RIN 2115-AC69) would require EPIRBs for all commercial fishing industry vessels that operate on the high seas (defined in 33 CFR 2.05-1(a)) or beyond three nautical miles from the coastline in the Great Lakes to be equipped with an EPIRB.

The 406 MHz EPIRBs would not be mandatory until after August 17, 1994, if a 121.5/243 MHz EPIRB was operable and placed on board a vessel on or before October 3, 1988.

Draft Regulatory Evaluation

These proposed regulations are considered to be non-major under Executive Order 12291 on Federal Regulation and significant under DOT regulatory policies and procedures (44 FR 11034, February 26, 1979). A draft regulatory evaluation has been prepared and placed in the rulemaking docket. It may be inspected and copied at the address listed under **ADDRESSES**. Copies may also be obtained by contacting the person listed under **FOR FURTHER INFORMATION CONTACT**. The projected capital costs estimated for the 110,000 existing commercial fishing industry vessels is \$71.6 million dollars. The annualized capital costs are estimated to be \$12.0 million, with an additional \$9.4 million annual operating and maintenance costs for a total annualized cost to the industry of \$21.4 million.

It is estimated that 4,000 new fishing vessels will be constructed annually. Three thousand of these vessels will not be documented vessels under 46 CFR Subchapter G. The compliance costs for all new vessels is estimated to be \$1.8 million annually. Undocumented vessels would account for \$1.1 million of this figure and documented vessels would account for the other \$700,000.

The economic benefits of these regulations consist of vessel casualties prevented and a reduction in the number of injuries and fatalities that could be expected to occur without these regulations. The commercial fishing industry has a fatality rate estimated to be nearly 7 times the national industry average. The annual number of fatalities that may be prevented in response to the provisions of this proposal as they relate to existing commercial fishing industry vessels is estimated to be 26 per annum. These regulations could prevent up to 29 existing commercial fishing industry vessels from sinking annually. In addition, 10 major injuries could be avoided. The Coast Guard estimates that the portion of this proposal associated with new vessel construction will prevent an additional 3 fatalities annually as well as 19 vessel losses and 10 additional serious injuries.

Environmental Analysis

The Coast Guard has considered the environmental impact of this proposed rulemaking, and it has been determined to be categorically excluded from further environmental documentation in accordance with sections 2.B.2.c and

2.B.2.1 of Commandant Instruction (COMDTINST) M16475.1. A categorical Exclusion Determination statement has been prepared and has been placed in the rulemaking docket.

Federalism Assessment

This NPRM has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that this proposed rulemaking does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Regulatory Flexibility Act

In accordance with the Regulatory Flexibility Act, a regulatory flexibility analysis which describes the impact of the proposed regulation on small entities is included in the regulatory evaluation available for inspection. An estimated 90-95 percent of the total number of commercial fishing industry vessels are independently owned. Even investor and company owned vessels are predominately associated with small businesses. Therefore, virtually the entire industry can be said to be composed of small businesses. Although the cost of the regulations is estimated to be minor when compared to the total annual revenues of the domestic industry of over \$2.5 billion, compliance costs fall disproportionately on a number of individual classes of vessels.

The cost of the proposed regulations is estimated to be minor with respect to virtually all small and large vessels operating in waters inside the Boundary Line. The cost is estimated to be moderate for larger vessels operating outside of the Boundary Line. Relative to the revenues of these vessels, the costs are considered to be negligible.

The economic impact of these regulations on smaller vessels that operate beyond the Boundary Line may be significant. Examples of smaller vessels that operate beyond the Boundary Line include New England lobster boats, swordfish vessels, bottom long-line vessels, offshore gillnetters, and virtually all of the small vessels that operate on the West Coast of the United States. A 26 foot boat operating far offshore would incur capital costs of over \$1,200. This is a significant amount to invest in a vessel worth \$10,000 to \$20,000. The largest impact would be to vessels that operate in the Northern waters. A small salmon gillnet boat in Alaska could have capital costs as high as \$4,000 with annualized costs of \$1,400 per boat. This is a relatively high economic burden for a vessel that may

earn less than \$10,000 annually from commercial fishing.

Part-time and seasonal operators represent a significant proportion of many fisheries. The cost of complying with the regulations is the same for part-time and seasonal operators as it is for full-time operators. Therefore, these regulations may lead some part-time and seasonal operators to discontinue commercial fishing activities.

Stability is also an area that may adversely impact small vessel owners, which are all believed to qualify as small entities. The cost of stability tests alone can be from \$1,000 to \$5,000 per vessel. Since most commercial fishing industry vessels are custom built and would be required to have a stability test of some form, the economic burden could be relatively high. However, if vessels are built from the same production run, the bulk of the cost of stability tests could be amortized over all the vessels in the run since only one prototype per run needs to be tested.

If you feel that your business qualifies as a small entity and would suffer significant, negative, economic impact, please explain why your business qualifies as a small entity and to what degree the proposed regulations would economically affect your business. Cost data submitted will be thoroughly evaluated before publication of the final rule.

Paperwork Reduction Act

This rulemaking contains information collection requirements in the following sections of 46 CFR: § 28.080; § 28.090; § 28.140; § 28.185; § 28.260; § 28.525; § 28.580; § 28.610; § 28.620.

The information collection requirements have been submitted to the Office of Management and Budget (OMB) for review under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). Persons desiring to comment on the information collection requirements of these regulations should identify this rulemaking docket (CGD 88.079) and submit their comments to: Office of Regulatory Policy, Office of Management and Budget, 726 Jackson Place, NW., Washington, DC 20503, attn: Desk Officer, Coast Guard. Persons submitting comments to OMB are also requested to submit a copy of their comments to the Coast Guard as indicated under ADDRESSES.

List of Subjects in 46 CFR Part 28

Administrative practice and procedures, Authority delegation, Electric power, Fire prevention, Fishing Vessels, Incorporation by reference, Insurance, Lifesaving equipment, Main

and auxiliary machinery, Marine safety, Navigation (water), Occupational safety and health, Reporting and recordkeeping requirements, Seamen, and Stability.

Proposed Rules

In view of the foregoing, the Coast Guard proposes to amend title 46, Code of Federal Regulations, chapter I, subchapter C, by adding part 28 to read as follows:

PART 28—REQUIREMENTS FOR COMMERCIAL FISHING INDUSTRY VESSELS

Subpart A—General Provisions

- Sec.
- 28.010 Authority.
 - 28.020 OMB control numbers.
 - 28.030 Applicability.
 - 28.040 Incorporation by reference.
 - 28.050 Definitions.
 - 28.070 Approved equipment and material.
 - 28.080 Report of casualty.
 - 28.090 Report of injury.
 - 28.095 Right of appeal.

Subpart B—Requirements for All Vessels

- 28.100 Applicability.
- 28.105 Lifesaving equipment—general requirements.
- 28.110 Life preservers or other personal flotation devices.
- 28.115 Ring lifebuoys.
- 28.125 Survival craft.
- 28.130 Stowage of survival craft.
- 28.135 Survival craft equipment.
- 28.140 Lifesaving equipment markings.
- 28.145 Operational readiness, maintenance, and inspection of lifesaving equipment.
- 28.150 Distress signals.
- 28.155 Emergency Position Indicating Radiobeacons (EPIRBs).
- 28.160 Excess fire detection and protection equipment.
- 28.165 Portable fire extinguishers.
- 28.170 Injury placard.

Subpart C—Requirements for Documented Vessels That Operate Beyond the Boundary Line or with More Than 16 Individuals On Board

- 28.200 Applicability.
- 28.205 Fireman's outfit.
- 28.210 First aid equipment and training.
- 28.215 Guards for exposed hazards.
- 28.225 Nautical charts and Inland Rules.
- 28.230 Compasses.
- 28.235 Anchors.
- 28.240 Radar reflectors.
- 28.245 Communication equipment.
- 28.250 Bilge alarms.
- 28.255 Bilge pumps and piping.
- 28.260 Electronic position fixing devices.
- 28.265 Emergency instructions.
- 28.270 Instruction, drills, and safety orientation.

Subpart D—Requirements for Vessels Which Are Built After or Which Undergo a Major Conversion Completed After (Insert the effective date of these regulations) and That Operate With More Than 16 Individuals On Board

- 28.300 Applicability.
- 28.305 Compliance date for survival craft on new or converted vessels.
- 28.310 Launching of survival craft.
- 28.315 Fire pumps, fire mains, fire hydrants, and fire hoses.
- 28.320 Fixed gas fire extinguishing systems.
- 28.325 Fire detection systems.
- 28.330 Galley hood and other fire protection equipment.
- 28.335 Fuel systems.
- 28.340 Ventilation of enclosed engine and fuel tank spaces.
- 28.345 Electrical standards for vessels of not more than 79 feet in length.
- 28.350 General requirements for electrical systems.
- 28.355 Main source of electrical power.
- 28.360 Emergency source of electrical power.
- 28.365 Distribution systems.
- 28.370 Overcurrent protection and switched circuits.
- 28.375 Wiring methods and materials.
- 28.380 General structural fire protection.
- 28.385 Structural fire protection for vessels that operate with more than 49 individuals on board.
- 28.390 Means of escape.
- 28.395 Embarkation stations.
- 28.400 Navigation equipment.
- 28.405 Hydraulic equipment.
- 28.410 Deck rails, lifelines, storm rails, and hand grabs.

Subpart E—Stability

- 28.500 Applicability.
- 28.505 Owner's responsibility.
- 28.510 Definitions.
- 28.515 Submergence test as an alternative to stability calculations.
- 28.520 Alternate simplified stability test for small vessels.
- 28.525 Alternative subdivision.
- 28.530 Stability instructions for operating personnel.
- 28.535 Inclining test.
- 28.540 Free surface.
- 28.545 Intact stability when using lifting gear.
- 28.550 Icing.
- 28.555 Freeing ports.
- 28.560 Watertight integrity above the main deck.
- 28.565 Water on deck.
- 28.570 Intact righting energy.
- 28.575 Severe wind and roll.
- 28.580 Unintentional flooding.

Subpart F—Fish Processing Vessels

- 28.600 Applicability.
 - 28.610 Examination and certification of compliance.
 - 28.620 Survey and classification.
- Authority: 46 U.S.C. 3316, 4502, 4506, 6110-10603; 49 U.S.C. App. 1904; 49 CFR 1.46.

Subpart A—General Provisions**§ 28.010 Authority.**

The regulations in this part are prescribed by the Commandant of the Coast Guard, pursuant to a delegation of authority by the Secretary of Transportation set forth in 49 CFR 1.46(b), to carry out the intent and purpose of title 48, United States Code, section 3318 which authorizes the Secretary to rely on reports, documents, and certificates issued by the American Bureau of Shipping or a similar United States classification society, or an agent of the Bureau or society, sections 4502 and 4506 which require safety equipment and operational stability for certain vessels in the commercial fishing industry, section 6104 which requires the Secretary of Transportation to compile statistics concerning marine casualties compiled from vessel insurers and to delegate that authority to compile statistics from insurers to a qualified person, and section 10603 which requires seamen on commercial fishing industry vessels to give notice of illness, injury, or disability to their employer.

§ 28.020 OMB control numbers.

(a) This section collects and displays the control numbers assigned to information collection and recordkeeping requirements in this part by the Office of Management and Budget (OMB) pursuant to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). The Coast Guard intends that this section comply with the requirements of 44 U.S.C. 3507(f) which requires that agencies display a current control number assigned by the Director of the OMB for each approved agency information collection requirement.

(b) Display.

46 CFR Section Where Identified or Described and Current OMB Control No.

§ 28.XXX: 2115-YYYY.

§ 28.ZZZ: 2115-UUUU.

§ 28.030 Applicability.

(a) Except as provided in paragraph (b) of this section, this part is applicable to all United States flag vessels not inspected under this chapter that are commercial fishing, fish processing or fish tender vessels. This includes vessels documented under the provisions of Subchapter G of this chapter and vessels numbered by a state or the Coast Guard under the provisions of 33 CFR chapter I, subchapter S. Certain regulations in this part apply only to limited categories of vessels. Specific applicability statements are

provided at the beginning of those regulations.

(b) This part does not apply to a small boat that is deployed from a fishing industry vessel for the purpose of handling fishing gear.

§ 28.040 Incorporation by reference.

(a) In this part portions or the entire text of certain industrial and government agency standards and specifications are referred to as the governing requirements for materials, equipment, tests, or procedures to be followed. These standards and specification requirements specifically referred to in this subchapter are the governing requirements for the subject matters covered unless specifically limited, modified, or replaced by other regulations in this subchapter.

(b) Materials are incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than the one listed in paragraph (c) of this section, notice of this change must be published in the Federal Register and the material made available to the public. Copies of the approved material may be inspected at the Office of the Federal Register, 1100 L Street, NW., room 8401, Washington, DC and at the U.S. Coast Guard, Marine Technical and Hazardous Materials Division, 2100 Second Street SW., Washington, DC 20593-0001, and is available from the sources indicated in paragraph (c) of this section.

(c) The material approved for incorporation by reference in this part, and the sections affected, are:

American Boat and Yacht Council (ABYC), P.O. Box 747, 405 Headquarters Dr., Suite 3, Millersville, MD 21108-0747

E-1-1972—Bonding of Direct Current Systems, § 28.345

E-8-1985—AC Electrical Systems on Boats, § 28.345

E-9-1981—DC Electrical Systems on Boats, § 28.345

H-25-1936—Portable Fuel Systems and Portable Containers for Flammable Liquids § 28.335

H-32-1987—Ventilation of Boats Using Diesel Fuel § 28.335

H-33-1984—Diesel Fuel Systems § 28.335

P-1-1986—Installation of Exhaust Systems for Propulsion and Auxiliary Engines, § 28.380

International Maritime Organization (IMO), Publications Section, 4 Albert Embankment, London SE1 7SR, England
Maritime Safety Committee Circular 513 "Guidelines Concerning the Use and Fitting of Retro-Reflective Materials in Lifesaving Appliances", June 1987 § 28.140

National Fire Protection Association (NFPA), 60 Battery March Park, Quincy, MA 02269

70-1984—National Electrical Code (also known as ANSI/NFPA 70-1984) § 28.350
302-1989—Pleasure and Commercial Motor Craft § 28.335, § 28.340, § 28.345
17-1985—Dry Chemical Extinguishing Systems § 28.330
17A-1986—Wet Chemical Extinguishing Systems § 28.330
Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096
SAE J 1942-1989—Hose and Hose Assemblies for Marine Applications § 28.345
Underwriters Laboratories, Inc. (UL), 333 Pfingsten Rd., Northbrook, IL 60062
UL 217-1985—Standard for Single and Multiple Station Smoke Detectors § 28.325
UL 710-1984—Grease Extractors for Exhaust Ducts § 28.330

§ 28.050 Definitions.

Accepted organization means an organization—

- (1) With a Code of Ethics;
- (2) Familiar with the requirements of this chapter related to commercial fishing industry vessels;
- (3) Familiar with the operations and equipment on board commercial fishing industry vessels;
- (4) Whose only interest in the fishing industry is in ensuring the safety of commercial fishing industry vessels and surveying commercial fishing industry vessels;
- (5) That has grievance procedures;
- (6) That has procedures for accepting and terminating membership of an individual;
- (7) That maintains a roster of present and past accepted members;
- (8) That has an Apprentice/Associate program; and
- (9) That has been accepted by the Commandant for the purpose of performing examinations of commercial fishing industry vessels.

Accommodations include:

- (1) A space used as a messroom.
- (2) A lounge.
- (3) A sitting area.
- (4) A recreation room.
- (5) Quarters.
- (6) A toilet space.
- (7) A shower room.

Approved means approved by the Commandant unless otherwise stated.

Boundary Line means the lines set forth in 46 CFR part 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 contiguous zone.

Coastal waters means coastal waters as defined in 33 CFR 175.105.

Cold water means water where the monthly mean low water temperature is normally 59 degrees F. or less.

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.

Documented vessel means a vessel for which a certificate of documentation has been issued under the provisions in Subchapter G of this chapter.

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

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, or harvesting of fish.

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.

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

High seas means international waters as defined in 33 CFR 2.05-1(a).

Length means the length listed on the vessel's certificate of documentation or certificate of number.

Major conversion means a conversion of a vessel that—

- (1) Substantially changes the dimensions or carrying capacity of the vessel;
- (2) Changes the type of the vessel;
- (3) Substantially prolongs the life of the vessel; or
- (4) Otherwise so changes the vessel that it is essentially a new vessel, as decided by the Commandant.

Mile means a nautical mile.

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

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

Protected waters is a term used in connection with stability criteria and means sheltered waters presenting no

special hazards such as most rivers, harbors, and lakes.

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 installed on.

Similarly qualified organization means an organization which:

- (1) Publishes standards for vessel construction which are widely available as and which are of similar content to the standards published by the American Bureau of Shipping.
- (2) Performs periodic surveys in a wide range of localities during and after construction to ensure compliance with published standards, including drydock examinations, in a manner similar to the American Bureau of Shipping.
- (3) Issues certificates testifying to compliance with the published standards.
- (4) Has as its primary concern, the survey and classification of vessels.
- (5) Has no interest in owning or operating fishing, fish processing, or fish tender vessels.
- (6) Maintains records of surveys and makes such records available to the Coast Guard upon request in a manner similar to the American Bureau of Shipping.
- (7) Has been accepted by the Commandant for the purposes of classing or examining commercial fishing industry vessels.

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

Substantially altered means the vessel is physically altered in a manner that affects the vessel's stability and includes:

- (1) Alterations to the fishing or processing equipment for the purpose of catching, landing, or processing fish in a manner different than previously accomplished.
- (2) Alterations that result in a change of the vessel's lightweight vertical center of gravity of more than two inches, a change in the vessel's lightweight displacement of more than three percent, or an increase of more than five percent in the vessel's projected lateral area.
- (3) Alterations which change the vessel's underwater shape.
- (4) Alterations which change a vessel's angle of downflooding.
- (5) Alterations which change a vessel's buoyant volume.

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

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 in diameter that delivers at least 65 gallons per minute is played on the enclosure from any direction from a distance of ten feet 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, except that "weathertight equipment" means equipment constructed or protected so that exposure to a beating rain will not result in the entrance of water.

§ 28.070 Approved equipment and material.

(a) Equipment and material that is required by this subchapter to be approved or of an approved type, must have been manufactured and approved in accordance with the design and testing requirements in subchapter Q of this chapter or as otherwise specified by the Commandant.

(b) Notice regarding equipment approvals is published in the Federal Register. Coast Guard publication COMDTINST M16714.3, "Equipment Lists, Items Approved, Certificated or Accepted under Marine Inspection and Navigation Laws," lists approved equipment by type and manufacturer. COMDTINST M16714.3 may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

§ 28.080 Report of casualty.

(a) Except for a casualty which has been reported to the Coast Guard on Form CG 2692, in accordance with part 4 of this chapter, the owner, agent, operator, master, or individual in charge of a vessel involved in a casualty must submit a report in accordance with paragraph (c) of this section, as soon as possible after the casualty, to the underwriter of primary insurance for the vessel or to an organization listed in paragraph (d) of this section whenever the casualty involves any of the following:

- (1) Loss of life.
- (2) An injury to an individual that causes that individual to remain incapacitated for a period in excess of 72 hours.

(3) Loss of a vessel.
 (4) Damage to or by a vessel, its cargo, apparel or gear, except for fishing gear while not on board a vessel, that impairs the seaworthiness of the vessel, or that is initially estimated at \$2,500.00 or more.

(b) Each underwriter of primary insurance for a commercial fishing industry vessel must submit a report of each casualty involving that vessel within 90 days of receiving notice of the casualty and whenever it pays a claim resulting from the casualty. Each report must be submitted to an organization listed in paragraph (d) of this section. Initial reports must be in accordance with paragraph (c) of this section. Subsequent reports must contain sufficient information to identify the casualty and any new or corrected casualty data.

(c) Each report of casualty must include the following information:

- (1) The name and address of the vessel owner and vessel operator, if different than the vessel owner.
- (2) The name and address of the underwriter of primary insurance for the vessel.
- (3) The name, registry number, call sign, federal and state fishery license numbers, gross tonnage, year of build, length, hull material, and fishing gear of the vessel.
- (4) The date, time, location, primary cause, and nature of the casualty.
- (5) The specific fishery, intended catch, and length of fishery opening when applicable.
- (6) The date that the casualty was reported to the underwriter of primary insurance for the vessel, or to an organization acceptable to the Commandant.

(7) The activity of the vessel and the weather conditions at the time of the casualty.

(8) The damages to or by the vessel, its apparel, gear, or cargo.

(9) The monetary amounts paid for damages.

(10) The seaworthiness of the vessel after the casualty.

(11) The 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.

(12) The name, registry number, and call sign of every other vessel involved in the casualty.

(13) The monetary amount paid for an injury or a death.

(d) A casualty to a commercial fishing industry vessel must be reported to an organization that has knowledge and experience in the collection and processing of statistical insurance data and that has been accepted by the Commandant to receive and process casualty data under this part. The following organizations have been accepted by the Commandant for this purpose:

(1) Marine Index Bureau, Inc., P. O. Box 1964, New York, NY 10158-0612.

Note: Information collected under this section from underwriters of primary insurance is exempt from disclosure under the Freedom of Information Act because it is commercial and financial information which, if disclosed, would be likely to cause substantial harm to the competitive position of the underwriter.

§ 28.090 Report of injury.

Each individual employed on a commercial fishing industry vessel must notify the master, individual in charge of

the vessel, or other agent of the employer of each illness, disability, or injury suffered when in service to the vessel not later than seven days after the date on which the illness, disability, or injury arose.

§ 28.095 Flight of appeal.

Any individual directly affected by a decision or action taken under this part, by or on behalf of the Coast Guard, may appeal therefrom in accordance with subpart 1.03 of this chapter.

Subpart E—Requirements For All Vessels

§ 28.100 Applicability.

Each commercial fishing industry vessel must meet the requirements of this subpart.

§ 28.105 Lifesaving equipment—general requirements.

(a) In addition to the requirements of this subpart, each commercial fishing industry vessel must comply with the requirements of subpart 25.25 of this chapter.

(b) Except as provided in § 28.125(c), each item of lifesaving equipment carried on board a vessel to meet the requirements of this part, must be approved by the Commandant.

§ 28.110 Life preservers or other personal flotation devices.

(a) Each vessel must be equipped with an immersion suit, exposure suit, or wearable personal flotation device for each individual on board as specified in Table 28.110 and subpart 25.25 of this chapter. Notwithstanding the provisions of § 25.25-1(c) of this chapter, this requirement also applies to a commercial fishing industry vessel propelled by sail.

TABLE 28.110.— PERSONAL FLOTATION DEVICES AND IMMERSION SUITS

| Area | Vessel length | Devices required | Regulation |
|---|-------------------------|--|---|
| Ocean, beyond Boundary Line and North of 32° N or south of 32° S; or Great Lakes. | All..... | Immersion suit or exposure suit; each with PFD light and retroreflective material. | 25.25-9(a), 25.25-13, 25.25-15, 28.140. |
| Ocean, inside Boundary Line; | Less than 40 feet..... | Type I, Type II, Type III, Type V commercial hybrid, immersion suit, or exposure suit; each with PFD light and retroreflective material. | 25.25-5(b), (e), (f), 25.25-9(a), 25.25-13, 25.25-15, 28.110 & .140. |
| or | | | |
| Ocean, between 32° N and 32° S..... | 40 feet and longer..... | Type I, Type V commercial hybrid, immersion suit, or exposure suit; each with PFD light and retroreflective material. | 25.25-5(b), (e), (f), 25.25-9(a), 25.25-13, 25.25-15, 28.110, 28.140. |
| Lakes, bays sounds, or rivers..... | Less than 40 feet..... | Type I, Type II, Type III, Type V commercial hybrid, immersion suit, or exposure suit; each with retroreflective material ¹ . | 25.25-5(b), (e), (f), 25.25-9(a), 25.25-15, 28.125(a), 28.140. |
| Do..... | 40 feet and longer..... | Type I, Type V commercial hybrid, immersion suit, or exposure suit; each with retroreflective material ¹ . | 25.25-5(b), (e), (f), 25.25-9(a), 25.25-15, 28.110, 28.140. |

¹ Certain Type V Personal Flotation Devices are approved for substitution for Type I, II, or III Personal Flotation Devices, when used in accordance with the conditions stated in the Coast Guard approval label.

§ 28.115 Ring lifebuoys.

Each vessel must be equipped with a throwable flotation device or a ring lifebuoy as specified in Table 28.115. If the vessel is equipped with a ring lifebuoy, at least one ring lifebuoy must be equipped with a line which is at least 90 feet in length.

TABLE 28.115—THROWABLE FLOTATION DEVICES

| Vessel length | Devices required |
|---|---|
| Under 16 feet..... | None. |
| 16 feet or more, but less than 26 feet. | 1 Buoyant Cushion, or Ring Life Buoy (Type IV PFD). |
| Over 26 feet but less than 65 feet. | 1 Ring Life Buoy approval number starting with 160.009 or 160.050; orange; at least 24" size. |
| Over 65 feet..... | 3 Ring Life Buoys, approval number 160.050; orange; at least 24" size. |

Note: Certain Type V Personal Flotation Devices are approved for use in substitution for Type IV Personal Flotation Devices, when used in accordance with the conditions stated in the Coast Guard approval label.

§ 28.125 Survival craft.

(e) Except as provided in paragraphs (b) through (e) of this section, each vessel must carry the survival craft specified in Table 28.125 in an aggregate capacity to accommodate the total number of persons on board, in accordance with the provisions of paragraph (b) of this section.

(b) Compliance dates. Except as provided by § 28.305 of this chapter, compliance dates for the requirements for the number and type of survival craft in Table 28.125 are—

(1) For a documented vessel that operates in the North Pacific Area, as defined by the National Marine Fisheries Service at 50 CFR 210.1, [Insert date 1 year after effective date of these regulations];

(2) For a documented vessel that operates in the Great Lakes or in the Atlantic Ocean, north and east of a line drawn at a bearing 150 degrees true from Watch Hill Light, Rhode Island, [Insert date 2 years after effective date of these regulations];

(3) For each documented vessel, [Insert date 3 years after effective date of these regulations]; and

(4) For each vessel, [Insert date 4 years after effective date of these regulations];

(c) Each survival craft installed on board a vessel before [Insert effective date of these regulations] may continue to be used to meet the requirements this section provided the survival craft is—

(1) Of the same type as required in Table 28.125; and

(2) Maintained in good and serviceable condition.

(d) An approved lifeboat may be substituted for any survival craft required by this section, provided it is arranged and equipped in accordance with subchapter W of this chapter.

(e) The capacity of a small boat carried on board a vessel may be counted toward the capacity of a required buoyant apparatus, life float, or inflatable buoyant apparatus provided the boat meets the applicable requirements for safe loading and flotation in 33 CFR part 183. The capacity of such a boat may not be counted toward the capacity required for an inflatable liferaft.

TABLE 28.125—SURVIVAL CRAFT

| Area | Vessel type | Survival craft required |
|--|---|--|
| Ocean, beyond 50 miles from coastline..... | Documented or more than 16 persons on board..... | Inflatable liferaft with SOLAS A Pack. |
| Do..... | Not documented and not more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus. |
| Ocean, high seas, between 20-50 miles of coastline, cold waters. | Documented or more than 16 persons on board..... | Inflatable liferaft with SOLAS A or SOLAS B Pack. |
| Do..... | Not documented and not more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus. |
| Ocean, high seas, between 20-50 miles of coastline, warm waters. | Documented or more than 16 persons on board..... | Inflatable liferaft. |
| Do..... | Not documented and not more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus. |
| Ocean, high seas, within 20 miles of coastline, cold waters. | Documented or more than 16 persons on board..... | Inflatable liferaft. |
| Do..... | Not documented and not more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus. |
| Ocean, high seas, within 20 miles of coastline, warm waters. | All..... | Inflatable liferaft, or life float, or inflatable buoyant apparatus. |
| Ocean, not on high seas, but beyond Boundary Line, cold waters. | 36 feet or more in length and Documented; or 36 feet or more in length and more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus. |
| Do..... | 36 feet or more in length and not Documented and not more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus, or life float, or buoyant apparatus. |
| Do..... | Less than 36 feet in length..... | Inflatable liferaft, or inflatable buoyant apparatus, or life float, or buoyant apparatus. |
| Ocean, not on high seas, but beyond Boundary Line, warm waters. | 36 feet or more in length and Documented; or 36 feet or more in length and more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus, or life float, or buoyant apparatus. |
| Do..... | 36 feet or more in length and not Documented and not more than 16 persons on board. | None. |
| Do..... | Less than 36 feet in length..... | None. |
| Ocean, inside Boundary Line cold waters; or Great Lakes, cold waters; or Lakes, bays, sounds or rivers, cold waters. | 36 feet or more in length and documented; or 36 feet or more in length and more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus. |
| Do..... | 36 feet or more in length and not documented and not more than 16 persons on board. | Inflatable liferaft, or inflatable buoyant apparatus, or life float, or buoyant apparatus. |
| Do..... | Less than 36 feet in length..... | Inflatable liferaft, or inflatable buoyant apparatus, or life float, or buoyant apparatus. |
| Great Lakes, warm waters beyond 3 miles of coastline. | All..... | Inflatable liferaft, or inflatable buoyant apparatus, or life float, or buoyant apparatus. |

TABLE 28.125—SURVIVAL CRAFT—Continued

| Area | Vessel type | Survival craft required |
|--|-------------|-------------------------|
| Ocean, inside Boundary Line, warm waters; or Great Lakes, warm waters within 3 miles of coastline; or Lakes, bays sounds or rivers, warm waters. | All | None. |

§ 28.130 Stowage of survival craft.

(a) Each inflatable liferaft required to be equipped with a SOLAS A or a SOLAS B equipment pack must be stowed so as to float free and automatically inflate in the event the vessel sinks.

(b) Each inflatable liferaft, inflatable buoyant apparatus, and any boat used in their place, must be kept readily accessible for launching or be stowed so as to float free in the event the vessel sinks.

(c) Each hydrostatic release unit used in a float-free arrangement must be approved under subpart 160.062 of this chapter.

(d) Each float free link used with a buoyant apparatus or life float must be certified to meet subpart 160.073 of this chapter.

§ 28.135 Survival craft equipment.

(a) General. Each item of survival craft equipment must be of good quality, efficient for the purpose it is intended to serve, and secured to the craft.

(b) Inflatable liferafts. Each inflatable liferaft must have one of the following equipment packs as shown by the markings on its container:

- (1) Coastal Service;
- (2) SOLAS B Pack (formerly "Limited Service"); or
- (3) SOLAS A Pack (formerly "Ocean Service").

(c) Each life float, inflatable buoyant apparatus, and buoyant apparatus must be fitted with a lifeline, pendants, a painter, and a light.

(d) Other survival craft. A vessel must not carry survival craft other than inflatable liferafts, life floats, inflatable buoyant apparatus, or buoyant apparatus, such as lifeboats or rigid

liferafts, unless the survival craft and launching equipment comply with the requirements for installation, arrangement, equipment, and maintenance contained in Subchapter W of this chapter.

§ 28.140 Lifesaving equipment markings.

(a) After [Insert date 1 year after effective date of these regulations] lifesaving equipment carried aboard a vessel pursuant to the requirements of this subpart or subpart 25.25 of this chapter must be marked as specified in Table 28.140.

(b) Lettering must be in block capital letters.

(c) Retroreflective markings required by this section must be with material approved under Subpart 164.018 of this chapter. The arrangement of the retroreflective material must meet IMO MSC/Circ. 513.

TABLE 28.140—LIFESAVING EQUIPMENT MARKINGS

| ITEM | Markings required | | |
|---|-------------------|--|---------------------------|
| | Name of vessel | Either name of vessel or individual to whom assigned | Retro-reflective material |
| Wearable Personal Flotation Device (Type I, II, III, or wearable Type V); Immersion suit or exposure suit | | X | Type I or Type II. |
| Ring Life Buoy | X | | Type II. |
| Inflatable liferaft | None required | | |
| Inflatable buoyant apparatus | None required | | |
| Life Float | X | | Type II. |
| Buoyant Apparatus | X | | Type II. |
| EPIRB | X | | Type II. |

§ 28.145 Operational readiness, maintenance, and inspection of lifesaving equipment.

(a) Each item of lifesaving equipment must be 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.

(b) Except for an inflatable liferaft or an inflatable buoyant apparatus less than two years of age, each item of lifesaving equipment must be maintained and inspected in accordance with—

- (1) Table 26.145;

(2) The servicing procedure under the subpart of this chapter applicable to the item's approval; and

(3) The manufacturer's guidelines.

(c) An inflatable liferaft or inflatable buoyant apparatus, must be serviced at a facility specifically approved by the Commandant.

TABLE 28.145—SCHEDULED MAINTENANCE AND INSPECTION OF LIFESAVING EQUIPMENT

| Item | Interval | | Expiration date | Regulation |
|--|----------|---|-----------------|------------|
| | Monthly | Annually | | |
| Inflatable Wearable Personal Flotation Device (Type V commercial hybrid) | | Servicing | | 28.145 |
| Personal Flotation Devices, exposure suits and immersion suits | | Inspect, clean and repair as necessary. | | 28.145 |

TABLE 28.145—SCHEDULED MAINTENANCE AND INSPECTION OF LIFESAVING EQUIPMENT—Continued

| Item | Interval | | Expiration date | Regulation |
|--|----------|---|-----------------|------------|
| | Monthly | Annually | | |
| Buoyant apparatus and life floats | | Inspect, clean and repair as necessary. | | 28.145 |
| Inflatable liferaft | | Servicing | | 28.145 |
| Inflatable buoyant apparatus | | Servicing | | 28.145 |
| Hydrostatic Release | | Servicing | | 28.145 |
| Disposable Hydrostatic Release | | | Replace | 28.145 |
| EPIRB | Test | | | 25.26-5(b) |
| Dated batteries ¹ and other items | | | Replace | 25.26-5(b) |
| Updated batteries | | Replace | | 28.145 |

¹ Water activated batteries must be replaced whenever they are used.

§ 28.150 Distress signals.

Each vessel must be equipped with the distress signals specified in Table 28.150.

TABLE 28.150—DISTRESS SIGNALS

| Area | Devices required |
|---|--|
| Ocean, more than 50 miles from coastline | 3 parachute flares, approval series 46 CFR 160.136, plus 6 hand flares, approval series 46 CFR 160.121, plus 3 smoke signals, approval series 46 CFR 160.122. |
| Ocean, beyond Boundary Line, 3-50 miles from coastline; or more than 3 miles from coastline on the Great Lakes. | 3 parachute flares, approval series 46 CFR 160.136, or 160.036; plus 6 hand flares, approval series 46 CFR 160.021 or 160.021; plus 3 smoke signals, approval series 46 CFR 160.122, 160.022, or 160.037 |
| Coastal waters; or within 3 miles of coastline on the Great Lakes | Night visual distress signals consisting of one electric distress light or 3 approved flares plus Day visual distress signals consisting of one distress flag, or 3 approved flares, or 3 approved smoke signals. ¹ |

¹ If flares are carried, the same 3 flares may be counted toward meeting both the day and night requirement.

§ 28.155 Emergency Position Indicating Radiobeacons (EPIRBs).

(a) Each vessel that operates on the high seas after May 17, 1990, or beyond three nautical miles from the coastline of the Great Lakes after [insert date 1 year after the effective date of these

regulations], must carry an EPIRB as specified in Table 28.155 and Subpart 25.26 of this chapter.

(b) Until August 17, 1994, a Coast Guard approved 121.5/243 MHz EPIRB will satisfy the requirement of paragraph (a) of this section and may be

on board a vessel that operates on the high seas under § 25.26-1(a)(2) of this chapter, if the EPIRB is operable and was installed on the vessel on or before October 3, 1988.

TABLE 28.155

[Emergency Position Indicating Radiobeacons (EPIRBs)]

| Area | Vessel type | Device required | Regulation |
|---|------------------------------------|--|------------------------------|
| Ocean, high seas | All vessels without accommodations | Category 1 or Category 2 satellite EPIRB (Certain Class A EPIRBs allowed). | 28.155(a); 28.155(b); 25.26. |
| | All other vessels | Category 1 satellite EPIRB (Certain Class A EPIRBs allowed). | 28.155; 25.26. |
| Great Lakes, beyond 3 miles from coastline. | All vessels without accommodations | Category 1 or Category 2 satellite EPIRB (Certain Class A EPIRBs allowed until [insert date 6 years after effective date of these regulations]). | 28.155; 28.155; 25.26. |
| | All other vessels | Category 1 satellite EPIRB (Certain Class A EPIRBs allowed until [insert date 6 years after effective date of these regulations]). | 28.155; 25.26. |

(c) Under rules published by the Federal Communications Commission at 47 CFR 80.1053, Class A EPIRBs manufactured prior to October 1, 1988 do not meet signal coherency and stability standards, and may not be used to meet the requirements of this section after August 1, 1991.

§ 28.160 Excess fire detection and protection equipment.

Installation of fire detection and protection equipment in excess of that required by the regulations in this subchapter is permitted provided that the excess equipment does not endanger the vessel or individuals on board in any

way. The excess equipment must, at a minimum, be listed and labeled by a nationally recognized testing laboratory.

§ 28.165 Portable fire extinguishers.

(a) In addition to the requirements of this section, each vessel must meet th

requirements of subpart 25.30 of this chapter.

(b) Each vessel more than 65 feet in length must be equipped with the minimum number, location, and type of portable fire extinguishers specified in Table 28.165.

TABLE 28.165

[Portable Fire Extinguishers for Vessels More Than 65 Feet in Length]

| Space | Classification | Quantity and location |
|--|--------------------|---|
| Safety areas | | |
| Communicating corridors. | A-II | 1 in each main corridor not more than 150 feet apart. (May be located in stairways.) |
| Pilothouse..... | C-I | 2 in vicinity of exit. |
| Service spaces | | |
| Galleys..... | B-II or C-II | 1 for each 2,500 square feet or fraction thereof suitable for hazards involved. |
| Paint lockers..... | B-II | 1 outside space in vicinity of exit. |
| Accessible baggage and storerooms. | A-II | 1 for each 2,500 square feet or fraction thereof located in the vicinity of exits, either inside or outside the spaces. |
| Work shops and similar spaces. | A-II | 1 outside the space in vicinity of exit. |
| Machinery spaces | | |
| Internal combustion propelling machinery space. | E-II | 1 for each 1,000 brake horsepower, but not less than 2 nor more than 6. |
| Electric propulsion motors or generators of open type. | C-II | 1 for each propulsion motor or generator unit. |
| Auxiliary spaces | | |
| Internal combustion. | E-II | 1 outside the space in vicinity of exit. |
| Electric emergency motors or generators. | C-II | 1 outside the space in vicinity of exit. |

§ 28.170 Injury placard.

Each vessel must have posted in a prominent place accessible to the crew a placard measuring at least 8½ inches by 11 inches which reads:

Report All Injuries

United States law, 46 United States Code 10805, 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.

Subpart C—Requirements for Documented Vessels That Operate Beyond the Boundary Line or With More Than 16 Individuals on Board

§ 28.200 Applicability.

Each documented commercial fishing industry vessel that operates beyond the Boundary Line or that operates with more than 16 individuals on board must, in addition to the requirements of subparts A and B of this part, meet the requirements of this subpart.

§ 28.205 Fireman's outfit.

(a) Each vessel that operates with more than 49 individuals on board must be equipped with at least one fireman's outfit.

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

(c) Each self-contained breathing apparatus must be approved in accordance with subpart 169.011 of this chapter.

§ 28.210 First aid equipment and training.

(a) Each vessel must have a complete first aid manual and medicine chest of a size suitable for the number of individuals on board, stowed in a location accessible to all individuals on board.

(b) First aid and cardiopulmonary resuscitation (CPR) course certification. Certification in first aid and cardiopulmonary resuscitation (CPR) must be as described in this paragraph.

(1) First aid—a certificate indicating completion of a first aid course from:

(i) The American National Red Cross "Standard First Aid and Emergency Care" or "Multi-media Standard First Aid" course; or

(ii) A course approved by the Coast Guard under § 10.205(h)(1)(ii) of this chapter.

(2) CPR—A certificate indicating completion of a course from:

(i) The American National Red Cross; or

(ii) The American Heart Association; or

(iii) A course approved by the Coast Guard under § 10.205(h)(2)(iii) of this chapter.

(c) After [Insert date two years after the effective date of these regulations], each vessel that operates with more than 2 individuals on board must have at least 1 individual certified in first aid and at least 1 individual certified in

cardiopulmonary resuscitation (CPR). An individual certified in both first aid and cardiopulmonary resuscitation (CPR) will satisfy both of these requirements.

(d) After [Insert date two years after the effective date of these regulations], each vessel that operates with more than 16 individuals on board must have at least 2 individuals certified in first aid and at least 2 individuals certified in cardiopulmonary resuscitation (CPR). An individual certified in both first aid and cardiopulmonary resuscitation (CPR) may be counted against both requirements.

(e) After [Insert date two years after the effective date of these regulations], each vessel that operates with more than 49 individuals on board must have at least 4 individuals certified in first aid and at least 4 individuals certified in cardiopulmonary resuscitation (CPR). An individual certified in both first aid and cardiopulmonary resuscitation (CPR) may be counted against both requirements.

§ 28.215 Guards for exposed hazards.

(a) Suitable hand covers, guards, or railing must be installed 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.

(b) All hot exhaust pipes within reach of personnel must be insulated or otherwise guarded to prevent burns.

§ 28.225 Nautical charts and inland rules.

(a) Each vessel must have on board adequate and up-to-date marine charts of large enough scale to make safe navigation possible and must have on board any other navigation information appropriate for the intended voyage.

(b) Each vessel of 39.4 feet (12 meters) or more in length that operates on the U.S. inland waters or the Great Lakes must carry on board and maintain for ready reference a copy of the Inland Navigation Rules as set forth in 33 CFR chapter I, subchapter E.

§ 28.230 Compasses.

Each vessel must have an operable magnetic steering compass and a compass deviation tables at the operating station.

§ 28.235 Anchors.

Each vessel must be fitted with anchors and chains, cable, or rope appropriate for the waters of the intended voyage.

§ 28.240 Radar reflectors.

Except for a vessel rigged with gear that provides a radar signature from a distance of 6 nautical miles, each nonmetallic hull vessel must have a radar reflector.

§ 28.245 Communication equipment.

(a) Except as provided in paragraphs (b) through (d) of this section, each vessel must be equipped as follows:

(1) Each vessel must be equipped with a VHF radiotelephone capable of transmitting and receiving on the frequency or frequencies within the 156-162 MHz band necessary to communicate with a public coast station or U.S. Coast Guard station serving the area in which the vessel is operating.

(2) Each vessel that operates more than 20 nautical miles from the coastline, in addition to the VHF radiotelephone required by paragraph (a)(1) of this section, must be equipped with a radio transceiver capable of transmitting and receiving on the frequency or frequencies in the 2-4 MHz band necessary to communicate with a public coast station or U.S. Coast Guard station serving the area in which the vessel is operating.

(3) Each vessel operating more than 100 nautical miles from the coastline, in addition to the communication equipment required by paragraphs (a)(1) and (a)(2) of this section, must be equipped with a radio transceiver capable of transmitting and receiving on the frequency or frequencies in the 4-27.5 MHz band necessary to communicate with a Public coast station or U.S. Coast Guard station serving the area in which the vessel is operating.

(4) Each vessel that operates in waters contiguous to Alaska where no public or U.S. Coast Guard VHF coast stations are within communications range of a VHF radio transceiver operating on the 156-162 MHz band or the 2-4 MHz band, in addition to the VHF radio communication equipment required by paragraph (a)(1) of this section, must be equipped with a radio transceiver capable of transmitting and receiving on the frequency or frequencies in the 2-27.5 MHz band necessary to communicate with a public coast station or a U.S. Coast Guard station serving the area in which the vessel is operating.

(b) A single radio transceiver capable of meeting the requirements of paragraphs (a)(2) and (a)(3), or paragraphs (a)(2), (a)(3), and (a)(4) of this section, is acceptable.

(c) Satellite communication capability with a system servicing the area in which the vessel is operating is acceptable as an alternative to the

requirements of paragraphs (a)(2), (a)(3), and (a)(4) of this section.

(d) A cellular telephone capable of communicating with a public coast station or a U.S. Coast Guard station serving the area in which the vessel is operating is acceptable as an alternative to the requirements of paragraphs (a)(2), (a)(3), and (a)(4) of this section.

(e) The principle operating position of the communication equipment must be at the operating station.

(f) Communication equipment must be installed to ensure safe operation of the equipment and to facilitate repair. It must be protected against vibration, moisture, extreme temperatures, and excessive currents and voltages.

(g) Communication equipment must comply with the technical standards and operating requirements issued by the Federal Communications Commission, as set forth in 47 CFR part 80.

(h) Each vessel which uses radio equipment to meet the communication requirements of this section must have a Ship Radio Station License issued by the Federal Communications Commission, as set forth in 47 CFR part 80.

(i) All communication equipment must be provided with an emergency source of power that complies with § 28.260.

§ 28.250 Bilge alarms.

On a vessel greater than 36 feet in length, a visual and audible alarm must be provided at the operating station to indicate high water level in each of the following normally unmanned spaces:

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

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

(c) A space with a non-watertight closure (such as a hatch) on the main deck.

§ 28.255 Bilge pumps and piping.

(a) Each vessel must be equipped with a bilge pump capable of draining any watertight compartment (other than small buoyancy compartments) under all service conditions.

(b) Except as provided by paragraph (e) of this section, each vessel of more than 79 feet in length must be equipped with a fixed, self-priming, powered, bilge pump connected to a bilge manifold.

(c) If a bilge pump required by paragraph (a) of this section is portable, it must be provided with suitable suction and discharge hoses capable of reaching the bilges of each watertight compartment, other than a small buoyancy compartment.

(d) Except for a fire pump required by § 28.315, a bilge pump may be used for other purposes.

(e) Except where individual pumps are provided for separate spaces, individual bilge suction lines must be led to a manifold. Each bilge suction line must be provided with a stop valve at the manifold and a check valve at some accessible point in the bilge line to prevent unintended flooding of a space.

(f) Each vessel must comply with the oil pollution prevention requirements of parts 151 and 155, title 33, Code of Federal Regulations.

§ 28.260 Electronic position fixing devices.

Each vessel of more than 79 feet in length must be equipped with an electronic position fixing device capable of providing accurate fixes for the area in which the vessel operates.

§ 28.265 Emergency instructions.

(a) Each vessel that operates with more than 16 individuals on board must have posted emergency instructions in conspicuous locations accessible to the individuals on board.

(b) The emergency instructions required by this section must identify:

(1) The survival craft embarkation stations aboard the vessel.

(2) The survival craft to which each individual is assigned.

(3) Essential action that must be taken in an emergency by each individual, such as closing hatches, launching survival craft, mustering crew, and actions necessary in extinguishing a fire.

(4) The fire and emergency signal and the abandon ship signal.

(5) If immersion suits are provided, the location of the suits and illustrated instructions on the method for donning the suits.

§ 28.270 Instruction, drills, and safety orientation.

(a) The master or individual in charge of each vessel must ensure drills are conducted and instruction is given to each individual on board at least once each month and that each individual is familiar with their duties and the proper methods to be used during the following evolutions:

(1) Abandoning ship.

(2) Fighting a fire.

(3) Recovering an individual from the water.

(4) Minimizing the effects of unintentional flooding.

(5) Launching survival craft and recovering lifeboats and rescue boats.

(6) Donning immersion suits and other wearable personal flotation devices.

(b) After [Insert the date 3 years after the effective date of these regulations], no individual may conduct the drills or instructions required by this section unless that individual has been trained in the proper procedures for conducting the activity.

(c) The master or individual in charge of a vessel must give a safety orientation to any individual on board that has not received the instruction and drills required by paragraph (a) of this section before the vessel may be operated.

(d) The safety orientation must explain the emergency instructions required by § 28.265 and cover the specific evolutions listed in paragraph (a) of this section.

Subpart D—Requirements for Vessels Which Are Built After or Which Undergo a Major Conversion Completed After [Insert the effective date of these regulations] and That Operate With More Than 16 Individuals On Board

§ 28.330 Applicability.

Each commercial fishing industry vessel which is built after or which undergoes a major conversion completed after [Insert the effective date of these regulations] and that operates with more than 16 individuals on board must comply with the requirements of this subpart in addition to the requirements of subparts A, B, and C of this part.

§ 28.305 Compliance date for survival craft on new or converted vessels.

Section 28.125(b) does not apply to a vessel to which this subpart applies. Each vessel to which this subpart applies must meet the requirements for survival craft in § 28.125 on the date that its construction or major conversion is completed.

§ 28.310 Launching of survival craft

A gate or other opening must be provided in the deck rails, lifelines, or bulwarks adjacent to the stowage location of each survival craft which weighs more than 110 pounds, to allow the survival craft to be pushed overboard.

§ 28.315 Fire pumps, fire mains, fire hydrants, and fire hoses.

(a) Each vessel of more than 36 feet in length must be equipped with a self-priming, powered fire pump connected to a fixed piping system.

(1) A fire pump on a vessel of more than 79 feet in length must be capable of delivering water simultaneously from the two highest hydrants, or from both branches of the fitting if the highest

hydrant has a siamese fitting, at a pitot tube pressure of at least 50 psi and a flow rate of at least 80 gpm.

(2) Each vessel with a power driven fire pump must be equipped to permit energizing the fire main from the operating station and from the pump.

(b) Fire main, hydrants, hoses and nozzles.

(1) A vessel required to have a fixed firemain system must have a sufficient number of fire hydrants to reach any part of the vessel using a single length of fire hose.

(2) A fire hose must be connected to each fire hydrant at all times that the vessel is operating.

(3) A fire hose on a vessel of not more than 79 feet in length must be at least 5/8 inch nominal diameter, be of good commercial grade and be fitted with a nozzle of corrosion resistant material and capable of providing a solid stream and a spray pattern.

(4) A fire hose on a vessel of more than 79 feet in length must be lined commercial fire hose and be fitted with a nozzle made of corrosion resistant material and capable of providing a solid stream and a spray pattern.

§ 28.320 Fixed gas fire extinguishing systems.

(a) *Requirements for vessels of more than 79 feet in length.* A vessel of more than 79 feet in length must be fitted with a fixed gas fire extinguishing system in the following enclosed spaces:

(1) A space containing an internal combustion engine of more than 50 hp.

(2) A space containing an oil fired boiler.

(3) A space containing a gasoline storage tank.

(b) *System types and alternatives* (1)

A pre-engineered fixed gas fire extinguishing system may only be installed in a normally unoccupied machinery space, a paint locker, or a space containing flammable liquid stores, which has a gross volume of not more than 2000 cubic feet.

(2) A fixed gas fire extinguishing system, which is capable of automatic discharge upon heat detection, may only be installed in a normally unoccupied space with a gross volume of not more than 6000 cubic feet.

(3) A space with a gross volume exceeding 6000 cubic feet must be fitted with a manually actuated and alarmed, fixed gas, fire extinguishing system.

(c) *General requirements.* (1) A fixed gas fire extinguishing system aboard a vessel must be approved by the Commandant and be custom engineered, unless the system meets the requirements for a pre-engineered fixed

gas fire extinguishing system in paragraph (d) of this section.

(2) System components must be listed and labeled by an independent laboratory for the system being installed.

(3) System design, and installation must be in accordance with the Manufacturer's Marine Design, Installation, Operation, and Maintenance Manual approved for the system by the Commandant.

(4) A fixed gas fire extinguishing system may protect more than one space. The quantity of extinguishing agent must be at least sufficient for the space requiring the greatest quantity.

(d) *Pre-engineered fixed gas fire extinguishing system.* (1) A pre-engineered fixed gas fire extinguishing system must:

(i) Be approved by the Commandant.

(ii) Be capable of manual actuation from outside the space in addition to any automatic actuation devices.

(iii) Automatically shut down all power ventilation systems serving the protected space and all engines that draw intake air from within the protected space.

(2) A vessel on which a pre-engineered fixed gas fire extinguishing system is installed must have the following equipment at the operating station:

(i) A light to indicate discharge of the extinguishing agent.

(ii) An audible alarm to sound upon discharge of the extinguishing agent.

(iii) A means to reset devices used to automatically shut down ventilation systems and engines as required by paragraph (d)(1)(iii) of this section.

§ 28.325 Fire detection systems.

(a) Each accommodation space on a vessel that operates with more than 49 individuals on board must be equipped with an independent modular smoke detector or a smoke actuated fire detecting unit installed in accordance with § 76.33 of this chapter.

(b) An independent modular smoke detector must meet UL Standard 217 and be listed as a "Single Station Smoke Detector—Also suitable for use in Recreational Vehicles."

§ 28.330 Galley hood and other fire protection equipment.

(a) Each vessel that operates with more than 49 individuals on board must be fitted with a grease extraction hood complying with UL 710 above each grill, broiler, and deep fat fryer.

(b) Each grease extraction hood must be equipped with a pre-engineered dry or wet chemical fire extinguishing

system meeting the applicable sections of NFPA Standard 17 or 17A, and must be listed by an independent laboratory.

(c) A vessel of more than 79 feet in length must have at least one fire axe located in or adjacent to the operating station.

§ 28.335 Fuel systems.

(a) *Applicability.* Except for the components of an outboard engine, each vessel must meet the requirements of this section.

(b) *Portable fuel systems.* Portable fuel systems including portable tanks and related fuel lines and accessories are prohibited except where used for outboard engines. The design, construction, and stowage of portable tanks and related fuel lines and accessories must meet the requirements of ABYC Project H-25—Portable Fuel Systems and Portable Containers for Flammable Liquids.

(c) *Fuel restrictions.* Except for outboard engines, the use of fuel other than bunker C or diesel is prohibited. An installation using bunker C must comply with the requirements of subchapter F of this chapter.

(d) *Vent pipes for integral fuel tanks.* Each integral fuel tank must meet the requirements of this paragraph.

(1) Each fuel tank must be fitted with a vent pipe connected to the highest point of the tank terminating in a 180 degree bend on a weather deck and fitted with a flame screen or flame arrestor.

(2) Except where provision is made to fill a tank under pressure, the net cross-sectional area of the vent pipe for a fuel tank must not be less than 0.022 square inches.

(3) Where provision is made to fill a tank under pressure, the net cross-sectional area of the vent pipe must not be less than that of the fill pipe.

(e) *Fuel piping.* Fuel lines must be seamless and must be of steel, annealed copper, nickel-copper, or copper-nickel. The fuel lines must have a wall thickness of not less than 0.035 inches except that:

(1) Aluminum piping is acceptable on aluminum hull vessel provided it is installed outside a machinery space and is at least Schedule 80 in thickness.

(2) Nonmetallic flexible hose must—

(i) Not be used in lengths of more than 30 inches;

(ii) Be visible, easily accessible, and must not penetrate a watertight bulkhead; and

(iii) Be fabricated with an inner tube and a cover of synthetic rubber or other suitable material reinforced with wire braid.

(f) Piping subject to internal head pressure from fuel in the tank must be fitted with positive shutoff valve located at the tank operable from a safe location outside the space in which the valve is located.

(g) A vessel of not more than 79 feet in length may comply with paragraphs (g)(1), (g)(2), or (g)(3) of this section in lieu of the requirements of paragraphs (e) and (f) of this section.

(1) ABYC Project H-33.

(2) Chapter 5 of NFPA Standard 302.

(3) 33 CFR, subchapter S (Boating Safety).

§ 28.340 Ventilation of enclosed engine and fuel tank spaces.

(a) *Applicability.* Each vessel with a gasoline outboard engine or gasoline storage tank must comply with the requirements of this section.

(b) *Ventilation of spaces containing gasoline.* Each space that contains a gasoline engine, a gasoline storage tank, or gasoline piping connected to an integral gasoline tank must be so open to the atmosphere and so arranged as to prevent the entrapment of vapors or be ventilated by a mechanical exhaust system with a nonsparking fan.

(c) *Alternative standards.* A vessel of not more than 65 feet in length with ventilation installations in accordance with NFPA Standard 302, chapter 2, section 2-2, or ABYC Project H-32 and 33 CFR part 183, subpart K, will be considered as meeting the requirements of this section.

§ 28.345 Electrical standards for vessels of not more than 79 feet in length.

A vessel of not more than 79 feet in length may comply with the requirements of paragraph (a) of this section and either paragraph (b) or (c) of this section in lieu of meeting the requirements of §§ 28.350 through 28.375.

(a) The following ABYC Projects as applicable—

(1) For a vessel with an alternating current system, E-8—AC Electrical Systems on Boats; or

(2) For a vessel with a direct current system, E-1—Bonding of Direct Current Systems and E-9—DC Electrical Systems on Boats.

(b) The following chapters of NFPA Standard 302:

(1) Chapter 7—Electrical Systems Under 50 Volts.

(2) Chapter 8—Alternating Current (AC) Electrical Systems on Boats.

(c) 33 CFR part 183, subpart I and § 28.395 of this part.

§ 28.350 General requirements for electrical systems.

(a) Electrical equipment in the weather or in a location exposed to seas must be waterproof, watertight, or enclosed in a watertight housing.

(b) Aluminum must not be used for current carrying parts of electrical equipment or wiring.

(c) As far as practicable, electrical equipment must not be installed in lockers used to store paint, oil, turpentine, or other flammable or combustible liquid. If electrical equipment, such as lighting, is necessary in these spaces, it must be explosionproof or intrinsically safe.

(d) Explosionproof and intrinsically safe equipment must meet the requirements of subpart 111.105 of this chapter.

(e) Metallic enclosures and frames of electrical equipment must be grounded.

(f) Each vessel with a nonmetallic hull, e.g. wood and fiber reinforced plastic, must have a continuous, non-current carrying grounding conductor which connects together the enclosures and frames of electrical equipment and which connects metallic items such as engines, fuel tanks, and equipment enclosures to a common ground point.

(g) The equipment grounding conductor required by paragraph (f) of this section, must be sized in accordance with NFPA Standard 70, section 250-95.

§ 28.355 Main source of electrical power.

(a) *Applicability.* Each vessel that relies on electricity to power any of the following essential loads must have at least two sources of electrical power to supply these loads—

(1) The propulsion system and its necessary auxiliaries and controls;

(2) Interior lighting;

(3) Steering systems;

(4) Communication systems;

(5) Navigation equipment and navigation lights;

(6) Fire protection equipment; or

(7) Bilge pumps.

(b) Each generator must be attached to an independent prime mover.

§ 28.360 Emergency source of electrical power.

(a) Except as provided in paragraph (c) of this section, each vessel must have an emergency source of power which is independent of the main sources of electrical power and which is located outside the main machinery space.

(b) The emergency source of power must be capable of supplying all connected loads continuously for at least 3 hours.

(c) Except as required by § 28.245(h), a vessel of not more than 36 feet in length need not have an emergency source of power if flashlights are provided.

(d) A vessel of not more than 79 feet in length which is not dependent upon electrical power for propulsion or steering, need only supply emergency power to emergency lighting, navigation equipment, and communication systems.

(e) Where the emergency source of power is a generator, the generator prime mover must have a fuel supply which is independent of other prime movers.

§ 28.365 Distribution systems.

(a) Each distribution system which has a neutral bus or conductor must have the neutral bus or conductor grounded.

(b) A grounded distribution system must have only one connection to ground. This ground connection must be at the switchboard or, on a nonmetallic vessel, at the common ground point.

§ 28.370 Overcurrent protection and switched circuits.

(a) Each power source must be protected against overcurrent. Overcurrent devices for generators must be set at a value not exceeding 115 percent of the generator full load rating.

(b) Except for a steering circuit, each circuit must be protected against both overload and short circuit. Each overcurrent device in a steering system power and control circuit must provide short circuit protection only.

(c) Each ungrounded current carrying conductor must be protected in accordance with its current carrying capacity by a circuit breaker or fuse at the connection to the switchboard or distribution panel bus.

(d) Each circuit breaker and each switch must simultaneously open all ungrounded conductors.

(e) The grounded conductor of a circuit must not be disconnected by a switch or an overcurrent device unless all ungrounded conductors of the circuit are simultaneously disconnected.

(f) Navigation light circuits must be separate, switched circuits having fused disconnect switches or circuit breakers so that only the appropriate navigation lights can be switched on.

(g) A separate circuit, with overcurrent protection at the main distribution panel or switchboard, must be provided for each radio installation.

§ 28.375 Wiring methods and materials.

(a) All cable and wire must have insulated, stranded copper conductors of the appropriate size and voltage rating for the circuit.

(b) Each conductor must be No. 22 AWG or larger. Conductors in power and lighting circuits must be No. 14 AWG or larger. Conductors must be sized so that the voltage drop at the load terminals is not more than 10 percent.

(c) Cable and wiring not serving equipment in a high fire risk area such as a galley, laundry or machinery space must be routed as far as practicable from these spaces. As far as practicable, cables serving duplicated essential equipment must be separated so that a casualty that affects one cable does not affect the other.

(d) Cable and wire for power and lighting circuits must:

(1) For circuits of less than 50 volts, meet 33 CFR 183.425 and 183.430; and

(2) For circuits of 50 volts or greater:

(i) Meet §§ 310.13 and 310.15 of NFPA Standard 70—National Electrical Code, except that asbestos insulated cable and dry location cables must not be used;

(ii) Be listed by Underwriters Laboratories Inc. as UL Boat or UL Marine Shipboard cable; or

(iii) Meet subpart 111.60 of this chapter.

(e) All metallic cable armor must be electrically continuous and grounded to the metal hull or the common ground point at each end of the cable run, except that final sub-circuits (those supplying loads) may be grounded at the supply end only.

(f) A wiring termination and connection must be made in a fire retardant enclosure such as a junction box, fixture enclosure or panel enclosure. A fire retardant plastic enclosure is acceptable.

§ 28.380 General structural fire protection.

(a) *Fire hazards to be minimized.* Each vessel must be constructed so as to minimize fire hazards insofar as is reasonable and practicable.

(b) *Combustibles insulated from heated surfaces.* An internal combustion engine exhaust, galley uptake, and similar source of ignition must be kept clear of and suitably insulated from combustible material. A dry exhaust system for an internal combustion engine on a wooden or fiber reinforced plastic vessel must be installed in accordance with ABYC Project P-1—Installation of Exhaust Systems for Propulsion and Auxiliary Engines.

(c) *Separation of machinery and fuel tanks spaces from accommodation spaces.* (1) Each accommodation space must be separated from each machinery and fuel tank space by a fire resistant boundary which will prevent the passage of vapors.

(2) Each pipe and cable penetration between an accommodation space and a

machinery or a fuel tank storage space must be sealed.

(d) *Paint and flammable liquid lockers.* Each vessel carrying paint and flammable liquids must be equipped with a steel or a steel lined storage locker.

(e) *Insulation.* Except as provided in paragraphs (e)(1) and (e)(2) of this section, insulation must be noncombustible.

(1) In machinery spaces combustible insulation may be used for pipe and machinery lagging.

(2) In cargo spaces and refrigerated compartments of service spaces, insulation need not be noncombustible.

(f) *Vapor barrier.* Where insulation of any type is used in spaces where flammable and combustible liquids or vapors are present, e.g., machinery spaces and paint lockers, a vapor barrier which covers the insulation must be provided.

(g) *Paint.* Nitrocellulose or other highly flammable or noxious fume producing paints or lacquers must not be used.

(h) *Mattresses.* Each mattress must comply with 16 CFR part 1632, subpart A, the U.S. Department of Commerce Standard for Mattress Flammability (FF4-72.16). Polyurethane foam mattresses are prohibited.

(i) *Fire alarm system.* Each vessel must have a fire alarm system.

(j) *Fiber reinforced plastic.* When the hull, a deck, deckhouse, or superstructure of a vessel is partially or completely constructed of fiber reinforced plastic, the resin used must be fire retardant resin.

(k) *Cooking areas.* Vertical or horizontal surfaces within three feet of cooking appliances must be composed of noncombustible material or sheathed in metal. Curtains, draperies, or free hanging fabrics are not permitted within three feet of cooking appliances.

§ 28.385 Structural fire protection for vessels that operate with more than 49 individuals on board.

(a) *Applicability.* Each vessel that operates with more than 49 individuals on board must comply with the requirements of this section in addition to the requirements of § 28.380.

(b) *Construction of bulkheads, decks, and deckhouses.* The hull, structural bulkheads, columns and stanchions must be composed of steel. Superstructures and deckhouses must be constructed of noncombustible material.

(c) *Protection of accommodation spaces.* A bulkhead or deck separating an accommodation space from a control station, machinery space, cargo space,

or service space must be constructed of noncombustible material.

§ 28.390 Means of escape.

(a) Each space which is used by an individual on a regular basis or which is generally accessible to an individual must have at least two widely separated means of escape. At least one of the means of escape must be independent of watertight doors. Subject to the restrictions of this section, means of escape include normal exits and emergency exits, passageways, stairways, ladders, deck scuttles, and windows.

(b) At least one of the means of escape from each space must provide a satisfactory route to weather.

(c) Each door, hatch or scuttle used as a means of escape must be capable of being opened by one person, from either side, in both light and dark conditions and must open towards the expected direction of escape from the space served.

(d) Each a deck scuttle which serves as a means of escape, must be fitted with a quick-acting release and a holdback to hold the scuttle in an open position.

(e) Each foothold, handhold, ladder, etc., provided to aid escape, must be suitable for use in emergency conditions and must be of rigid construction.

(f) A window or windshield of sufficient size and proper accessibility may be used as one of the required means of escape from an enclosed space.

§ 28.395 Embarkation stations.

Each vessel must have at least one designated survival craft embarkation station and any additional embarkation stations necessary so that an embarkation station is readily accessible from each accommodation space and work space. Each embarkation station must be arranged to allow the safe boarding of survival craft.

§ 28.400 Navigation equipment.

(a) Each vessel must be fitted with a general marine radar system for surface navigation with a radar screen mounted at the operating station.

(b) Each vessel must be fitted with a suitable echo depth sounding device.

§ 28.405 Hydraulic equipment.

(a) Each hydraulic system must be so designed and installed that proper operation of the system is not affected by back pressure in the system.

(b) Piping and piping components must be designed with a burst pressure of not less than four times the system maximum operating pressure.

(c) Each hydraulic system must be equipped with at least one pressure relieving device set to relieve at the system's maximum operating pressure.

(d) All material in a hydraulic system must be suitable for use with the hydraulic fluid used and must be of such chemical and physical properties as to remain ductile at the lowest operating temperature likely to be encountered by the vessel.

(e) Except for hydraulic steering equipment, controls for hydraulic equipment must be located where the operator has an unobstructed view of the hydraulic equipment and the adjacent working area.

(f) Controls for hydraulic equipment must be so arranged that the operator is able to quickly disengage the equipment in an emergency.

(g) Hydraulically operated machinery must be equipped with a holding device to prevent uncontrolled movement due to loss of hydraulic system pressure.

(h) A nonmetallic flexible hose must only be used between two points of relative motion and must meet SAE Standard J 1942—Hose and Hose Assemblies for Marine Applications.

(i) Each nonmetallic flexible hose and hose assembly must be installed in accordance with the manufacturer's rating and guidelines and must be limited to a reasonable length, in an application not subject to torsional loading.

§ 28.410 Deck rails, lifelines, storm rails, and hand grabs.

(a) Except as otherwise provided in paragraph (d) of this section, deck rails, lifelines, grab rails, or equivalent protection must be installed near the periphery of all weather decks accessible to individuals. Where space limitations make deck rails impractical, such as at narrow catwalks in way of deckhouse sides, hand grabs may be substituted.

(b) The height of deck rails, lifelines, or bulwarks must be at least 39½ inches from the deck, except where this height would interfere with the normal operation of the vessel, a lesser height may be substituted.

(c) All deck rails or lifelines must be permanently supported by stanchions at intervals of not more than 7 feet. Stanchions must be through bolted or welded to the deck.

(d) Portable stanchions and lifelines may be installed in locations where permanently installed deck rails would impede normal fishing operations or emergency recovery operations.

(e) Deck rails or lifelines must consist of evenly spaced courses. The spacing between courses must not be greater

than 15 inches. The opening below the lowest course must not be more than 9 inches. Lower courses are not required where all or part of the space below the upper rail is fitted with a bulwark, chain link fencing, wire mesh, or an equivalent.

(f) A suitable storm rail or hand grab must be installed where necessary in a passageway, at a deckhouse side, at a ladder, and a hatch where an individual might have normal access.

(g) A stern trawler must have doors, gates, or other protective arrangements at the top of the stern ramp as high as adjacent bulwarks.

Subpart E—Stability

§ 28.500 Applicability.

This subpart applies to each commercial fishing industry vessel that is not issued a load line under subchapter E of this chapter and that—

(a) Is built after *[Insert the effective date of these regulations]*; or

(b) Has the physical characteristics substantially altered after *[Insert the effective date of these regulations]* in a manner that affects the vessel's operating stability.

§ 28.505 Owner's responsibility.

(a) Where a test or calculations are necessary to evaluate stability, it is the owner's responsibility to select a suitably qualified individual to perform the test or calculations.

(b) Test results and calculations developed in evaluating stability must be maintained by the owner.

§ 28.510 Definitions.

Definitions of stability terms used in this subpart are found in §§ 170.050 and 171.010 of this chapter. Definitions of stability terms used in specific sections of this subpart are provided in those regulations.

§ 28.515 Submergence test as an alternative to stability calculations.

(a) A vessel may comply with this section in lieu of the requirements of §§ 28.530 through 28.580. A certification plate installed under 33 CFR part 183, subpart B is acceptable evidence of compliance with this section.

(b) A vessel which is fitted with inboard engines and loaded as described in paragraph (e) of this section must float in calm water, after being submerged for 18 hours, so that—

(1) For an open vessel, any portion of the vessel's gunwale is above the water's surface; or

(2) For a decked vessel, any portion of the main deck is above the water's surface.

(c) A vessel which is fitted with an outboard engine must be loaded as described in paragraph (e) of this section and must float in calm water after being submerged for 18 hours so that—

- (1) The vessel has an equilibrium heel angle of less than 10 degrees;
- (2) Any portion of the vessel's hull is above the water's surface; and
- (3) Any portion of the lowest 3 feet of the vessel's hull is not more than 6 inches below the water's surface as measured at the lowest point on—
 - (i) The gunwale, for an open boat; or
 - (ii) The main deck, for a decked vessel.

(d) A vessel which is fitted with an outboard engine must be loaded as described in paragraph (f) of this section and must survive the submergence described in paragraph (c) of this section, except that the equilibrium heel angle must not exceed 30 degrees and the vessel must float with the lower end of the vessel not more than 12 inches below the water's surface in calm water.

(e) For the tests described in paragraphs (b) and (c) of this section, a vessel must be complete in all respects, except that machinery which would be damaged by water may be replaced with equivalent fixed weight in the same location as the machinery it replaces. The vessel must be loaded with weight to represent the most adverse loading condition. (The most adverse loading condition normally includes the maximum weight of fish in its highest possible location. Weights must be substituted for operating personnel and may be substituted for fishing gear. The substitute weights may be located transversely so that the vessel floats level prior to being submerged. The two largest air chambers, or compartments of a decked vessel, not used as fuel tanks, that contribute buoyancy to the vessel must be flooded.)

(f) For the test described in paragraph (d) of this section, a vessel must be complete and loaded as described in paragraph (e) of this section, except that the center of gravity of the equivalent maximum fish load must be located to one side of the vessel's centerline by a distance equal to one-fifth of the maximum transverse dimension of the fish storage space.

§ 28.520. Alternate simplified stability test for small vessels.

(a) A vessel of less than 79 feet in length which has a downflooding angle of not less than 40 degrees in all loading conditions may comply with this section in lieu of the requirements of §§ 28.535 through 28.545 and §§ 28.565 through 28.575.

(b) Each vessel must be in the following condition when the test in paragraph (c) of this section is performed:

- (1) Construction of the vessel must be complete in all respects.
- (2) Permanent ballast, if to be installed on the vessel, must be solid and on board in its final position.
- (3) Each fuel and water tank must be approximately ¾ full.
- (4) Each fish hold must be approximately ¾ full of water. A fish hold that will only carry fish or a fish product that can not shift when operating, may be fitted with solid weight equal to that of water when the hold is ¾ full.
- (5) The weight of personnel, fishing equipment, and the maximum load of fish to be carried on deck must be on board and distributed so as to provide normal operating trim and to simulate the vertical center of gravity causing the least stable condition that is likely to occur in service.
- (6) Each non-return closure on a weather deck drain must be kept open during the test.

(c) Each vessel must not exceed the limitations in paragraph (d) of this section, when subject to the following heeling moment:

- $M = (P)(A)(H)$, where—
- M=wind heel moment, in foot-lbs;
- P=wind pressure equal to—
 - 15.0 lbs/square foot except for operation on protected waters;
 - 7.5 lbs/square foot for operation on protected waters;
- A=Area, in square feet, of the projected lateral surface of the vessel above the waterline; and
- H=Height, in feet, of the center of area (A) above the waterline.

(d) A vessel must not exceed the following limits of heel after the heeling moment of paragraph (c) of this section is imposed:

- (1) On a flush deck or well deck vessel, no more than ½ the freeboard measured to the top of the weather deck at the side of the vessel may be immersed, except that on a well deck vessel with scuppers operating on protected waters, the full freeboard may be immersed if the full freeboard is not more than ¼ of the distance from the waterline to the gunwale.
- (2) On an open boat, no more than ¼ of the freeboard may be immersed.
- (3) The angle of heel must not exceed 14 degrees, in any case.

(e) The heel must be measured at—

- (1) The point of minimum freeboard; or
- (2) At a point ¼ of the vessel's length from the bow if the point of minimum freeboard is aft of this point.

§ 28.525. Alternative subdivision.

(a) A vessel of less than 79 feet in length may comply with this section in lieu of meeting the requirements of § 28.580.

(b) The maximum distances between adjacent main transverse bulkheads must not be greater than the smaller of—

(1) One third of the length of the vessel; or

(2) A distance equal to—

$d = (F)(f)(L)/D$, where—
d=the maximum distance between adjacent main transverse watertight bulkheads, in feet.

F=the nondimensional floodable length factor from Table 28.525.

f=the effective freeboard calculated for each pair of adjacent bulkheads in accordance with paragraph (c) of this section, in feet.

L=length of the vessel, in feet.

D=the distance from the inside of the shell plating or planking measured from the vessel's centerline at a point that is ¼ of the maximum beam amidships, vertically upward to the horizontal plane that intersects the point where the side shell intersects the bulkhead deck at amidships, in feet.

(c) The effective freeboard for each compartment is calculated by the following equation:

$f = (a + b)/2$, where—

f=the effective freeboard, in feet.

a=the freeboard, in feet, measured—

- (1) at the forward main transverse watertight bulkhead; and
- (2) from the deepest load line to the lowest of—

- (i) the top of the bulkhead deck on a flush deck vessel; or
- (ii) the lower edge of a step in the bulkhead deck; or

(iii) the horizontal plane located three inches below the lowest opening porthole in the vessel's side that is below the bulkhead deck and serves the compartment.

b=the freeboard, in feet, measured—

- (1) at the aft main transverse watertight bulkhead; and
- (2) from the deepest load line to the lowest point as described for a.

TABLE 28.525

Table of Floodable Length Factors

| (s/L) × 100 | Floodable length factor ¹ |
|-------------|--------------------------------------|
| 0-15 | 0.33 |
| 20 | 0.34 |
| 25 | 0.35 |
| 30 | 0.38 |
| 35 | 0.43 |
| 40 | 0.48 |
| 45 | 0.54 |
| 50 | 0.61 |
| 55 | 0.63 |
| 60 | 0.59 |

TABLE 28.525—Continued
Table of Floodable Length Factors

| (s/L) × 100 | Floodable length factor ¹ |
|-------------|--------------------------------------|
| 65..... | 0.53 |
| 70..... | 0.48 |
| 75..... | 0.44 |
| 80..... | 0.40 |
| 85..... | 0.37 |
| 90-100..... | 0.34 |

s=distance from the midpoint of the compartment to the forwardmost point on the bulkhead deck excluding sheer, in feet; and

L=length of the vessel, in feet.

¹ Intermediate values of the floodable length factor can be determined by interpolation.

§ 28.530 Stability instructions for operating personnel.

(a) Each vessel must be provided with sufficient information in a readily usable form to allow the master or individual in charge of the vessel to determine the conditions of loading and operation that meet the intact and damage stability requirements of this subpart. Units of measure and the language used must be consistent with the ability of the master or individual in charge of the vessel.

(b) In developing the stability instructions, consideration must be given to including the following information:

(1) A general description of the vessel, including lightweight data.

(2) Instructions on the use of the information.

(3) General arrangement plans showing watertight compartments, closures, vents, downflooding angles, and allowable weights.

(4) Capacity plan or tank sounding tables showing tank and hold capacities, centers of gravity, and free surface effects.

(5) Loading restrictions, such as diagrams, tables, descriptions and maximum KG curves.

(6) Sample loading conditions.

(7) A rapid and simple means for evaluating any specific loading condition.

(8) General precautions for preventing unintentional flooding.

(9) General precautions for limiting the adverse affects of vessel icing.

(10) The amount and location of fixed ballast.

(11) Any other necessary guidance for maintaining adequate stability under normal and emergency conditions.

(12) A general description of the stability criteria that are used in developing the instructions.

(13) Guidance on the use of roll limitation devices such as stabilizers.

§ 28.535 Inclining test.

(a) Except as provided in paragraphs (b) and (c) of this section, each vessel for which the lightweight displacement and centers of gravity must be determined in order to do the calculations required in this subpart must have an inclining test performed.

(b) A deadweight survey may be substituted for the inclining test if there is a record of a inclining test of a sister vessel. A vessel qualifies as a sister vessel if it is built to the same basic drawings and the undocumented weight difference between the two vessels is less than 3 percent of the lightweight displacement of the original vessel and the location of the longitudinal center of gravity differs less than 1 percent of the vessel's length.

(c) A deadweight survey may be substituted for the inclining test, or the inclining test may be dispensed with if an accurate estimate of the vessel's lightweight characteristics can be made and the precise location of the position of the vessel's vertical center of gravity is not necessary to ensure that the vessel has adequate stability in all probable loading conditions.

(d) Each inclining test conducted under this section must be in accordance with § 170.165 of this chapter.

§ 28.540 Free surface.

(a) When doing the stability calculations required by this subpart, the virtual increase in the vessel's vertical center of gravity due to liquids in tanks must be determined by calculating—

(1) For each type of consumable liquid, the maximum free surface effect of the transverse pair of tanks, or single centerline tank, that have the greatest free surface effect; and

(2) The free surface effect of each partially filled tank and hold containing liquids that are not consumables or containing fish or fish products that can shift as the vessel heels.

(b) The free surface effect of tanks fitted with cross connection piping must be calculated assuming the tanks are one common tank, unless valves that will be kept closed to prevent the transfer of liquids as the vessel heels are installed in the piping.

(c) The moment of transference method may be used in lieu of the inertia method when calculating free surface effects.

§ 28.545 Intact stability when using lifting gear.

(a) Each vessel which lifts fish or fish products, or that uses fishing gear that can impose an overturning moment on

the vessel, such as trawls and seines, must meet the requirements of this section if that maximum heeling moment exceeds—

$0.67(W)(GM)(F/B)$, in foot-long tons, where—

W=displacement of the vessel with the lifted weight or the force on the fishing gear included, in long tons.

GM=metacentric height with the lifted weight or force on the fishing gear included, in feet.

F=freeboard to the lowest weather deck, measured at amidships in feet.

B=maximum beam, in feet.

(b) Except as provided in paragraph (f) of this section, each vessel must meet the requirements of § 28.570 or have at least 15 foot-degrees of area under the righting arm curve, after correcting the righting arms for the heeling arm caused by lifting or fishing gear, from the angle of equilibrium to the least of—

(1) The angle corresponding to the maximum righting arm;

(2) The angle of downflooding; or

(3) 40 degrees.

(c) The angle of intersection of the heeling arm curve resulting from the lifting moment or the moment of fishing gear and the righting arm curve must not be at an angle of more than 10 degrees.

(d) The heeling arm curve resulting from the lifting moment or the moment of fishing gear must be calculated as the resultant of the upright heeling moment divided by the vessel's displacement multiplied by the cosine of the angle of heel.

(e) For the purposes of this section, the weight of suspended loads must be assumed to act at the tip of the boom.

(f) A vessel that operates on protected waters, as defined in § 170.050 of this chapter, must comply with the requirements of this section, except that the area described in paragraph (b) of this section must be at least 10 foot-degrees.

§ 28.550 Icing.

(a) *Applicability.* Each vessel that operates north of 42 degrees North latitude between November 15 and April 15 or south of 42 degrees South latitude between April 15 and November 15 must meet the requirements of this section.

(b) Except as provided in paragraphs (c) and (d) of this section, the weight of ice on each surface above the waterline must be assumed to be at least—

(1) 6.14 pounds per square foot of horizontal projected area; and

(2) 3.07 pounds per square foot of vertical projected area.

(c) The weight of assumed ice on a vessel that operates south of 66-30 North latitude or north of 66-00 South latitude

may be calculated by assuming values one half of the values required by paragraphs (b)(1) and (b)(2) of this section.

(d) In calculating the weight of assumed ice in accordance with paragraphs (b) and (c) of this section, the horizontal and vertical projected areas of discontinuous surfaces of rigging, spars, booms, and rails must be increased by 15 percent.

(e) The weight and location of ice specified in paragraphs (d) and (b) or (c) of this section must be included in the vessel's weight and centers of gravity in each condition of loading when performing the stability calculations required by this subpart.

§ 28.555 Freeing ports.

(a) Except as provided in paragraph (i) of this section, each decked vessel fitted with bulwarks must be fitted with freeing ports.

(b) Freeing ports must be located to allow the rapid clearing of water in all probable conditions of list and trim.

(c) Except as provided by paragraphs (d) through (h) of this section, the aggregate clear area of freeing ports on each side of the vessel, in square feet, must not be less than 7.6 plus 0.115 times the length of the bulwark, measured in feet, on that side.

(d) Except as provided in paragraphs (e) through (h) of this section, for bulwarks which exceed 66 feet in length, the aggregate clear area of freeing ports on each side of the vessel, in square feet, must not be less than 0.23 times the length of the bulwark, measured in feet, on that side of the vessel.

(e) For a bulwark more than 48 inches in height, the required freeing port area required by paragraph (c) or (d) of this section must be increased in accordance with the following formula:

$$i = (h - 48)0.04m, \text{ where—}$$

i = increase in freeing port area, in square feet;

h = bulwark height, in inches; and

m = length of bulwark exceeding 48 inches in height.

(f) For a bulwark less than 36 inches in height, the required freeing port area, required by paragraph (c) or (d) of this section, may be decreased in accordance with the following formula:

$$r = (36 - h)0.04m, \text{ where:}$$

r = permitted reduction in freeing port area, in square feet.

h = bulwark height, in inches;

m = length of bulwark which is less than 36 inches in height.

(g) For a vessel without sheer, the freeing port area must be increased by 50 percent.

(h) The area of the freeing ports on a vessel that operates on protected waters need only be 50 percent of the area required by paragraph (b) or (c) of this section.

(i) Freeing port covers are permitted provided that the freeing port area required by this section is not diminished and the covers are constructed and fitted so that water will readily flow outboard but not inboard.

§ 28.560 Watertight integrity above the main deck.

(a) Each opening in a deck or a bulkhead that is exposed to weather must be fitted with a weathertight or a watertight closure device.

(b) Except as provided in paragraphs (c) through (f) of this section, each opening in a deck or a bulkhead that is exposed to weather must be fitted with a watertight coaming as follows:

(1) For a vessel of more than 79 feet in length, the coaming must be at least 12 inches in height.

(2) For a vessel of not more than 79 feet in length, the coaming must be at least 24 inches in height.

(c) A coaming to a fish hold that is under constant attention when the closure is not in place, need only be 6 inches in height.

(d) The coaming of an opening fitted with a quick-acting watertight closure device need only be of sufficient height to accommodate the device.

(e) Except on an exposed forecastle deck, a coaming is not required on a deck above the lowest weather deck.

(f) A permanently installed deadlight cover must be provided for each window and each portlight located below the first deck above the lowest weather deck.

§ 28.565 Water on deck.

(a) Each vessel with bulwarks must comply with the requirements of this section.

(b) Except for a vessel that operates on protected waters, the residual righting energy, "b" in figure § 28.565, must not be less than the water on deck heeling energy, "a" in figure § 28.565.

(c) The water on deck heeling energy must be determined assuming—

(1) Water fills the well area created by the deck, the bulwarks, and superstructure to the height of the bulwarks;

(2) Water does not run off through the freeing ports;

(3) Vessel trim and displacement are constant and equal to the values for the vessel without the water on deck; and

(4) Water in the well is free to run off over the top of the bulwark.

(d) The residual righting energy is the righting energy from the value where the righting arm equals the water on deck heeling arm up to the lesser of the values of 40 degrees of heel or the downflooding angle.

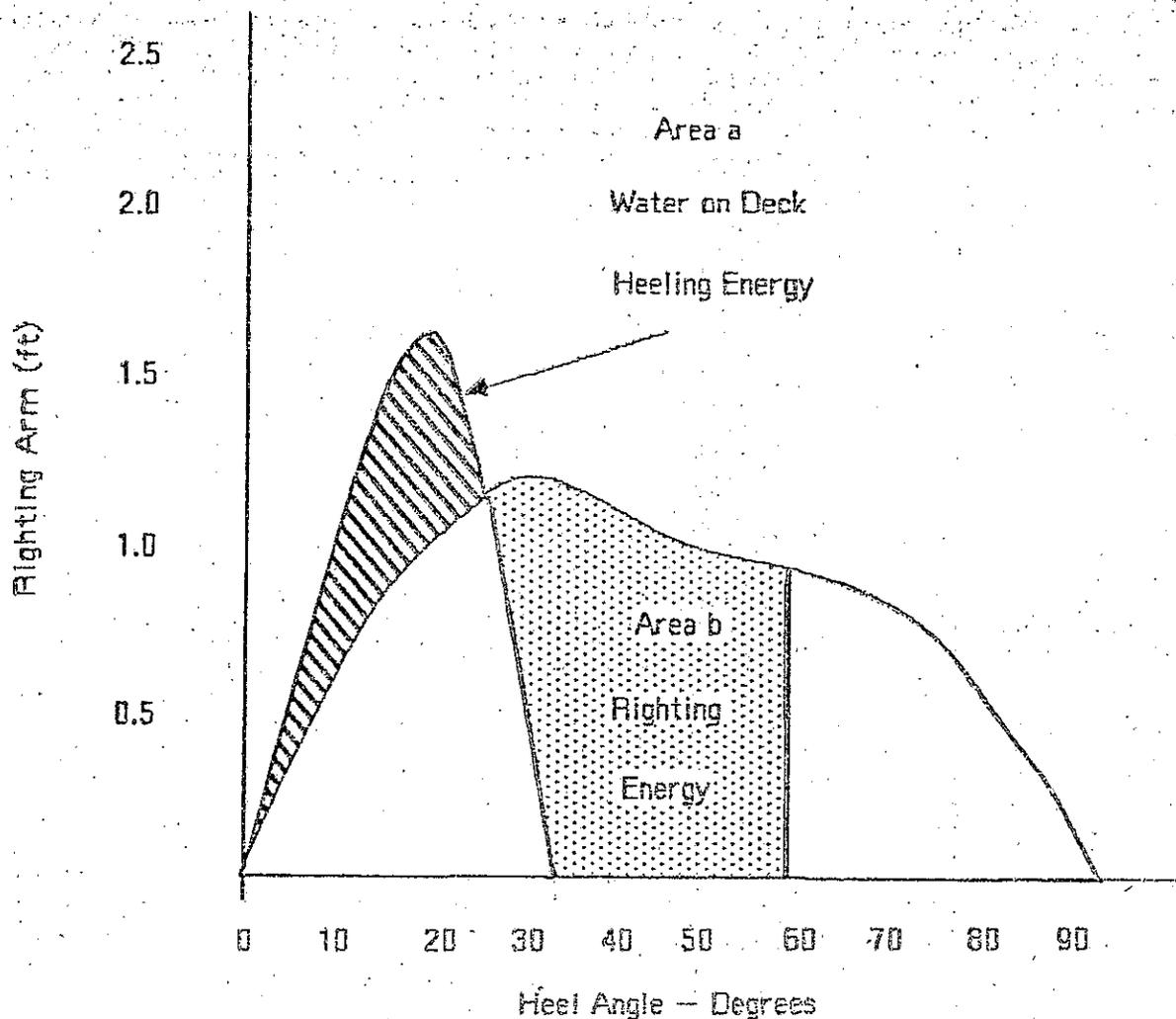


Figure 28.565

§ 28.570 Intact righting energy.

(a) Except as provided in paragraph (b) of this section, each vessel must have the following properties in each condition of loading—

(1) An initial metacentric height (GM) of at least 1.15 feet;

(2) A righting arm (GZ) of at least 0.66 feet at an angle of heel not less than 30 degrees;

(3) A maximum righting arm that occurs at an angle of heel not less than 25 degrees;

(4) An area under each righting arm curve of at least 18.9 foot-degrees up to the lesser of 40 degrees or the angle of downflooding;

(5) An area under each righting arm curve of at least 10.3 foot-degrees up to an angle of heel of 30 degrees;

(6) An area under each righting arm curve of at least 5.6 foot-degrees between 30 degrees and the lesser of 40 degrees or the angle of downflooding; and

(7) Positive righting arm through an angle of heel of 60 degrees

(b) A vessel may comply with the provisions of § 170.173(c) of this chapter, provided that righting arms are positive to an angle of heel of not less than 50 degrees, in lieu of meeting the requirements of paragraph (a) of this section.

§ 28.575 Severe wind and roll.

(a) Each vessel must meet paragraphs (f) and (g) of this section when subjected

to the gust wind heeling arm and the angle of roll to windward as specified in this section.

(b) The gust wind heeling arm, L_w in figure 28.575 of this chapter, must be calculated by the following formula:

$$0.00216E_n(V_n^2 A_n Z_n)/W, \text{ where—}$$

E_n = series summation notation where n varies from 1 to the number of elements in the series;

$V_n = S(0.124LN(0.3048h_n) + 0.772)$ and is the wind speed for profile element n on a vessel, in feet per second;

$S = 64$ for a vessel that operates on protected waters; or 85.3 for a vessel that operates on waters other than protected waters;

LN = natural logarithm;

h_n = the vertical distance from the centroid of area A_n to the waterline for profile element n , in feet;

A_n = projected lateral area for profile element n , in square feet;

Z_n = the vertical distance between the centroid of A_n and a point at the center of the underwater lateral area or a point

at approximately one-half of the draft, for profile element n , in feet;

W = displacement of the loaded vessel, in pounds.

(c) The angle of roll to windward, A_l , is measured from the equilibrium angle, A_{e1} , and is calculated by the formula .

A_l = Square root of $[109kXY(rs)]$, in degrees, where—

s, X, Y = factors from Table § 28.575;

$$r = 0.73 + 0.6Og/d;$$

Og = distance between the center of gravity and the waterline (+above, -below), in feet

$k = 1.0$ for round bilged vessels with no bilge keels or bar keels, 0.7 for vessels with sharp bilges, or the value from Table § 28.575 for vessels with a bar keel, bilge keels, or both;

B = molded breadth of the vessel, in feet;

d = mean molded draft of the vessel, in feet;

C_b = block coefficient

A_k = aggregate area of bilge keels, the area of the lateral projection of a bar

keel, or the sum of these areas, in square feet;

L = length, in feet;

$T = 1.108 BC/\text{square root of } GM$, in seconds;

GM = metacentric height corrected for free surface effects, as explained in § 28.540 of this chapter, in feet;

$$C = 0.373 + 0.023(B/d) - 0.00131L;$$

(d) The angle of equilibrium, A_{e1} in figure 28.575, is calculated by determining the lowest angle at which the gust wind heeling arm, L_w , is equal to the righting arm.

(e) The area "b" in figure 28.575 must be measured to the least of—

(1) The angle of downflooding, (Af) ;

(2) The angle of the second intercept, A_{e2} in figure 28.575, of the wind heeling arm curve, L_w in figure 28.575, and the righting arm curve; and

(3) A heel angle of 50 degrees.

(f) The angle of equilibrium, A_{e1} in figure 28.575, must not exceed 14 degrees.

(g) Area "b" in figure 28.575 must not be less than area "a" in figure 28.575.

TABLE 28.575

[Roll Factors]

| B/d | X | C _b | Y | 100A _k / (LB) | K | T | s |
|-----|------|----------------|------|--------------------------|------|----|-------|
| 2.4 | 1.0 | 0.45 | 0.75 | 0 | 1.0 | 6 | 0.100 |
| 2.5 | 0.99 | 0.50 | 0.82 | 1.0 | 0.98 | 7 | 0.099 |
| 2.6 | 0.96 | 0.55 | 0.89 | 1.5 | 0.95 | 8 | 0.093 |
| 2.7 | 0.95 | 0.60 | 0.95 | 2.0 | 0.88 | 12 | 0.065 |
| 2.8 | 0.93 | 0.65 | 0.97 | 2.5 | 0.79 | 14 | 0.053 |
| 2.9 | 0.91 | 0.70 | 1.0 | 3.0 | 0.74 | 16 | 0.044 |
| 3.0 | 0.90 | | | 3.5 | 0.72 | 18 | 0.038 |
| 3.1 | 0.88 | | | 4.0 | 0.70 | 20 | 0.035 |
| 3.2 | 0.86 | | | | | | |
| 3.3 | 0.84 | | | | | | |
| 3.4 | 0.82 | | | | | | |
| 3.5 | 0.80 | | | | | | |

Note. Intermediate values must be obtained by interpolation.

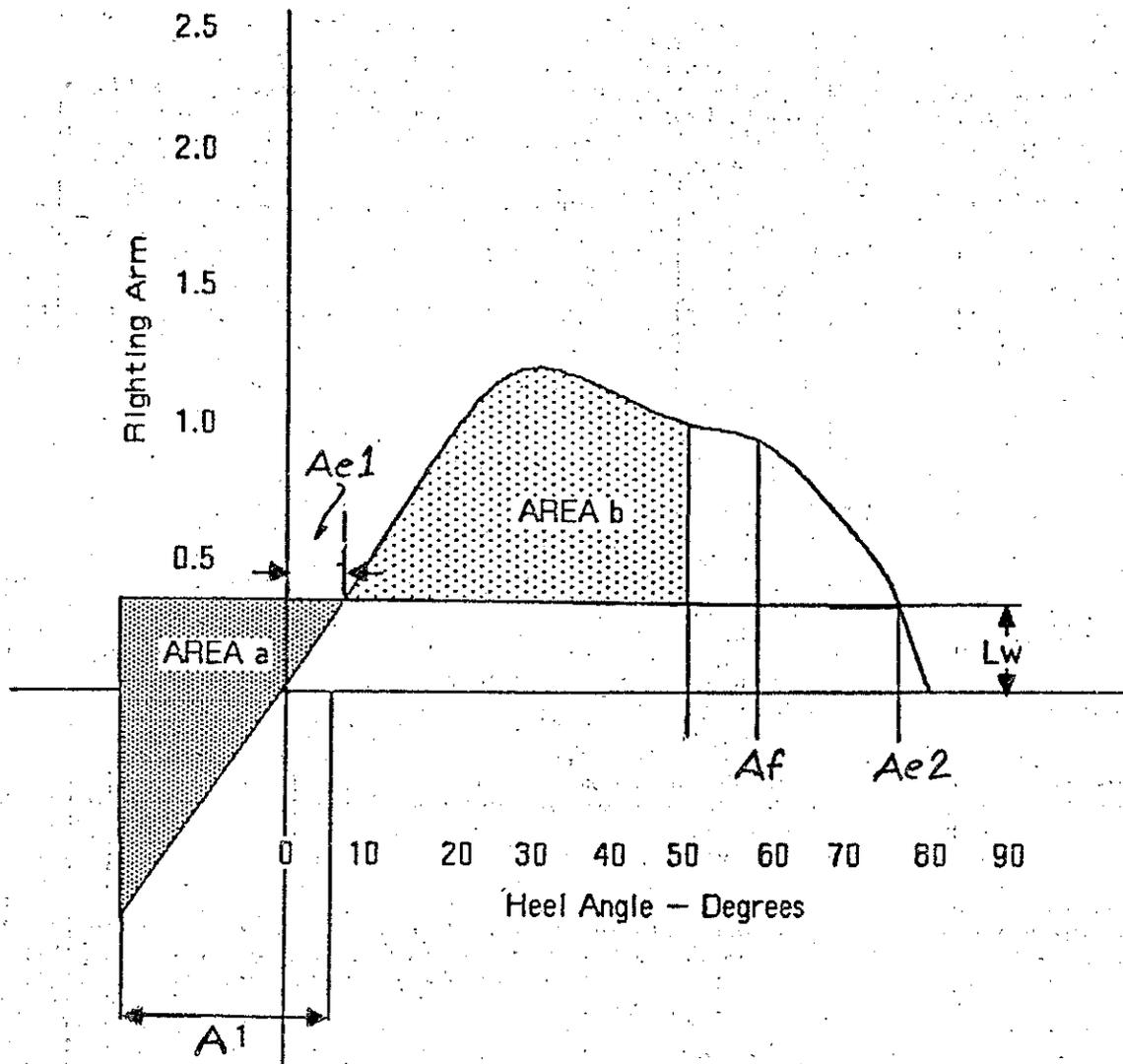


Figure 28.575

§ 28.560 Unintentional flooding.

(a) Applicability. Except for an open boat that operates on protected waters and as provided by paragraph (i) of this section, each vessel built after [Insert the effective date of these regulations] and which is more than 40 feet in length must comply with the requirements of this section.

(b) Collision bulkhead. A watertight collision bulkhead must be fitted and—

(1) Openings in the collision bulkhead must be kept to a minimum, and each must be fitted with a watertight closure device;

(2) A collision bulkhead must not be fitted with a door below the bulkhead deck;

(3) A penetration or opening in a collision bulkhead must be—

(i) Located as high and as far inboard as practicable; and

(ii) Fitted with a means to rapidly make it watertight which is operable from a location aft of the collision bulkhead;

(4) The collision bulkhead must be located at least 5 percent of the length from the forward perpendicular; and

(5) The collision bulkhead must not be stepped below the bulkhead deck.

(c) Each vessel must meet the survival conditions in paragraph (f) of this section in each condition of loading and operation with the extent and character of damage specified in paragraphs (d) and (e) of this section

(d) Extent and character of damage.

Except where a lesser extent of damage or a smaller penetration would be more disabling, in evaluating the damage stability of a vessel the following penetration must be assumed:

(1) Longitudinal extent— $L/10$, or 10 feet plus $0.03L$, whichever is less.

Transverse watertight bulkheads that are separated by at least this distance may be assumed to remain effective.

(2) Transverse extent—30 inches from the side measured at right angles to the centerline at the level of the deepest operating waterline.

(3) Vertical extent—from the baseline upward without limit.

(e) Each space containing a through hull fitting, such as the lazarette and the

engineroom, must be assumed to be flooded.

(f) Survival conditions. A vessel is presumed to survive the assumed damage and unintentional flooding described in paragraphs (d) and (e) of this section if—

(1) The angle of equilibrium after flooding does not exceed 25 degrees; and

(2) Through an angle of 20 degrees beyond the angle of equilibrium after flooding the following are met—

(i) The righting arm curve must be positive;

(ii) The maximum righting arm must be at least 4 inches;

(iii) Each submerged opening must be capable of being made weathertight; and

(iv) The heeling arm caused by deploying all fully loaded davit-launched survival craft on one side of a vessel does not exceed the righting arm at any angle of heel beyond the equilibrium angle when launching is assumed on the damaged side.

(g) Permeability. The permeability of each space must not be less than the following:

(1) For an accommodations space—95 percent.

(2) For a propulsion machinery space—85 percent.

(3) For a tightly packed storage space—60 percent.

(4) For a void or an auxiliary machinery space—95 percent.

(5) For an empty fish hold—95 percent.

(6) For a full fish hold—50 percent.

(7) For tanks—95 percent (less if a tank must be full to attain the draft under consideration).

(h) Buoyancy of superstructure. A deckhouse or a superstructure may be

included in the buoyant volume of a vessel provided it is—

(1) Sufficiently strong to withstand the impact of waves;

(2) Fitted with a weathertight or watertight closure device for each opening;

(3) Equipped with a deadlight cover for each window; and

(4) Fitted with interior access from the spaces below.

(i) A vessel may be examined annually in accordance with § 28.610 for fish processing vessels in lieu of meeting the requirements of paragraphs (c) through (h) of this section.

Subpart F—Fish Processing Vessels

§ 28.600 Applicability.

Each fish processing vessel which is not subject to inspection under the provisions of another subchapter of this chapter must meet the requirements of this subpart.

§ 28.610 Examination and certification of compliance.

(a) At least once in every two years each vessel must be examined for compliance with the regulations of this subchapter by the American Bureau of Shipping, a similarly qualified organization, or a surveyor of an accepted organization.

(b) Each individual performing an examination under paragraph (a) of this section, which finds the vessel to be in compliance with the requirements of this chapter, must provide a written certification of compliance to the owner or operator of the vessel.

(c) Each certification of compliance issued under paragraph (b) of this section must—

(1) Be signed by the individual that performed the examination;

(2) Include the name of the organization the individual performing the examination represents or the name of the accepted organization the individual belongs to; and

(3) State that the vessel has been examined and found to meet the specific requirements of this chapter.

(d) A certification of compliance issued under paragraph (b) of this section must be retained on board the vessel until superseded.

(e) A copy of the certification of compliance issued under paragraph (b) of this section must be forwarded by the organization under whose authority the examination was performed to the Coast Guard District Commander (attention: Fishing Vessel Safety Coordinator) in charge of the district in which the examination took place.

§ 28.620 Survey and classification.

(a) Each vessel which is built after or which undergoes a major conversion completed after July 27, 1990, must be classed by the American Bureau of Shipping, or a similarly qualified organization.

(b) Each vessel which is classed under paragraph (a) of this section must:

(1) Have on board a certificate of class issued by the organization that classed the vessel.

(2) Meet all survey and classification requirements prescribed by the organization that classed the vessel.

Dated: February 2, 1990.

P.A. Yost,

Admiral, U.S. Coast Guard, Commandant.

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