Sunshine Act Meetings

Federal Register
Vol. 48, No. 215
Friday, November 4, 1983

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

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1

CIVIL AERONAUTICS BOARD

TIME AND DATE: 10 a.m., November 8, 1983.

PLACE: Room 1027 (Open), Room 1012 (Closed), 1825 Connecticut Avenue, NW., Washington, D.C. 20428.

SUBJECT:

1. Ratification of Items Adopted by Notation.
2. Dockets 41499, 41349, 41350, *Buffalo Airways, Inc., Fitness Investigation, Applications of Buffalo Airways, Inc.*, Order Declining Review. (OGC)
3. Exemption from section 404(b) (non-discrimination) and clarification of the exemption from section 408(a) (acquisition and control) for domestic cargo transportation. (OGC)
4. Exemption from section 404(b) (non-discrimination) for intra-Alaska and intra-Hawaii cargo transportation and for indirect cargo air transportation. (OGC)
5. Docket 41510, Elimination of tariff filing for interstate cargo transportation between points within Hawaii or Alaska. (OGC, BIA, BDA)
6. Docket 41542, Notice of terms of contracts of carriage for domestic travel sold at ticket locations outside of the United States, or for air taxi operations. (OGC, BDA, BIA, OCCCA)
7. Docket 41219, Tariff filing requirements for credit terms. (Memo 1654-A, OGC)
8. Comments on a bill to prohibit smoking aboard aircraft. (Memo 2080, OGC)
9. Docket 41443, Domestic Baggage Liability: Final rules. (OGC, BDA, OCCCA)
10. Commuter carrier fitness determination of Gulf stream Airlines, Inc. (memo 2076, BDA)
11. Commuter carrier fitness determination of Las Vegas Airlines, Inc. (BDA)
12. Docket 38623, Agreement C.A.B. 29080, IATA agreement establishing a new South Pacific fare structure through March, 1985. (Memo 2083, BIA)
13. Discussion on Thailand Negotiations. (BIA)
14. Report on Peru. (BIA)
15. Report on Malaysia. (BIA)
16. Discussion on Trinidad & Tobago. (BIA)
17. Discussion on Switzerland. (BIA)
18. Discussion on Spain. (BIA)
19. Report on Jamaica. (BIA)
20. Discussion on Ireland. (BIA)
21. Discussion on Canada. (BIA)
22. Undocketed—Application of Air Canada for a statement of authorization to conduct a series of Fifth Freedom cargo charters between the United States and Scotland. (BIA, OGC)
23. Discussion on el Salvador. (BIA)

STATUS: 1–12 (Open), 13–23 (Closed).

PERSON TO CONTACT: Phyllis T. Kaylor, The Secretary, (202) 673–5068.

[FR Doc. S-1549-83 Filed 11-2-83; 3:43 pm]

BILLING CODE 6320-01-M

2

FEDERAL DEPOSIT INSURANCE CORPORATION

Pursuant to the provisions of the "Government in the Sunshine Act" (5 U.S.C. 552b), notice is hereby given that at 11:33 a.m. on Tuesday, November 1, 1983, the Board of Directors of the Federal Deposit Insurance Corporation met in closed session by telephone conference call to consider a recommendation with respect to the initiation and conduct of a cease-and-desist proceeding against an insured bank (name and located of bank authorized to be exempt from disclosure pursuant to the provisions of subsections (c)(6), (c)(8), and (c)(9)(A)(ii) of the "Government in the Sunshine Act" (5 U.S.C. 552b(c)(6), (c)(8), and (c)(9)(A)(ii)).

In calling the meeting, the Board determined, on motion of Chairman William M. Isaac, seconded by Director Irvine H. Sprague (Appointive), concurred in by Director C. T. Conover (Comptroller of the Currency), that Corporation business required its consideration of the matter on less than seven days' notice to the public; that no earlier notice of the meeting was practicable; that the public interest did not require consideration of the matter in a meeting open to public observation; and that the matter could be considered in a closed meeting pursuant to subsections (c)(6), (c)(8), and (c)(9)(A)(ii) of the "Government in the Sunshine Act" (5 U.S.C. 552b(c)(6), (c)(8), and (c)(9)(A)(ii).

Dated: November 1, 1983.

Federal Deposit Insurance Corporation.

Hoyle L. Robinson,

Executive Secretary.

[S-1547-83 Filed 11-2-83; 12:23 pm]

BILLING CODE 6714-01-M

3

NUCLEAR REGULATORY COMMISSION

DATE: Week of November 7, 1983 (revised).

PLACE: Commissioners' Conference Room, 1717 H Street, NW., Washington, D.C.

STATUS: Open and Closed.

MATTERS TO BE DISCUSSED:

Tuesday, November 8:

10 a.m.
Discussion/Vote on Hearing Requests and Whether to Lift Suspension at Diablo Canyon (public meeting) (As Announced)

2 p.m.
Consideration of Options for Dealing with Management Issues (TMI-1 Restart Proceeding) (closed—Ex. 5 and 10) (Title Revised)

Wednesday, November 9:

9:30 a.m.
Briefing on BWR Pipe Crack Issues (public meeting) (As Announced)

2 p.m.
Discussion of Hydrogen Ignition System and Final Rule (public meeting) (As Announced)

Thursday, November 10:

9:30 a.m.
Discussion of Treatment of Management Issues in TMI-1 Restart Proceeding (public meeting) (Title Revised)

11:30 a.m.
Affirmation/Discussion and Vote (public meeting) (As Announced)
a. Amendments to 10 CFR 50 Related to Hydrogen Control

b. Proposed Final Rule—Deletion of Exception Filing Requirements for Appeal from Initial Decisions

ADDITIONAL INFORMATION: Meeting on Classified, Export-Related Matters (closed—Ex. 1), added to schedule on 11:30 a.m., November 3, 1983.

Affirmation of "Revision to 10 CFR 51 and Related Conforming Amendments—Implementation of CEQ NEPA Regulations" scheduled for November 3, 1983, *postponed*.

TO VERIFY THE STATUS OF MEETINGS CALL: (Recording)—(202) 634–1498.

CONTACT PERSON FOR MORE INFORMATION: Walter Magee (202) 634–1410.

Walter Magee,

Office of the Secretary.

[S-5-1548-83 Filed 11-2-83; 3:13 pm]

BILLING CODE 7590-01-M

federal register

Friday
November 4, 1983

Part II

Department of Labor

Employment Standards Administration, Wage and Hour Division

Minimum Wages for Federal and Federally Assisted Construction; General Wage Determination Decisions

DEPARTMENT OF LABOR

Employment Standards Administration, Wage and Hour Division

Minimum Wages for Federal and Federally Assisted Construction; General Wage Determination Decisions

General wage determination decisions of the Secretary of Labor specify, in accordance with applicable law and on the basis of information available to the Department of Labor from its study of local wage conditions and from other sources, the basic hourly wage rates and fringe benefit payments which are determined to be prevailing for the described classes of laborers and mechanics employed on construction projects of the character and in the localities specified therein.

The determinations in these decisions of such prevailing rates and fringe benefits have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24–70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of part 1 of subtitle A of title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's Orders 12–71 and 15–71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

Good cause is hereby found for not utilizing notice and public procedure thereon prior to the issuance of these determinations as prescribed in 5 U.S.C. 553 and not providing for delay in effective date as prescribed in that section, because the necessity to issue construction industry wage determination frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General wage determination decisions are effective from their date of publication in the **Federal Register** without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision together with any modifications issued subsequent to its publication date shall be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable Federal prevailing wage law and 29 CFR, Part 5. The wage rates contained therein shall be the minimum paid under such contract by contractors and subcontractors on the work.

Modifications and Supersedeas Decisions to General Wage Determination Decisions

Modifications and supersedeas decisions to general wage determination decisions are based upon information obtained concerning changes in prevailing hourly wage rates and fringe benefit payments since the decisions were issued.

The determinations of prevailing rates and fringe benefits made in the modifications and supersedeas decisions have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24–70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of part 1 of subtitle A of title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's orders 13–71 and 15–71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in foregoing general wage determination decisions, as hereby modified, and/or superseded shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged in contract work of the character and in the localities described therein.

Modifications and supersedeas decisions are effective from their date of publication in the **Federal Register** without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5.

Any person, organization, or governmental agency having an interest in the wages determined as prevailing is encouraged to submit wage rate information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be obtained by writing to the U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division, Office of Government Contract Wage Standards, Division of Government Contract Wage Determinations, Washington, D.C. 20210. The cause for not utilizing the rulemaking procedures prescribed in 5 U.S.C. 553 has been set forth in the original General Determination Decision.

Modifications to General wage Determination Decisions

The numbers of the decisions being modified and their dates of publication to the **Federal Register** are listed with each State.

Arkansas:	
AR83-4038	May 13, 1983.
AR83-4039	May 13, 1983.
AR83-4049	July 15, 1983.
AR83-4069	Sept. 16, 1983.
Florida: FL83-1056	Aug. 19, 1983
Michigan: MI83-2008	Feb. 11, 1983.
New York: NY83-3018	May 20, 1983.
Oklahoma:	
OK83-4067	Sept. 16, 1983.
OK83-4068	Sept. 16, 1983.
Pennsylvania:	
PA81-3043	July 17, 1981.
PA81-3090	Dec. 18, 1981.
Texas:	
TX83-4007	Jan. 1, 1983.
TX83-4042	June 3, 1983.
TX83-4077	Oct. 21, 1983.
TX83-4078	Oct. 21, 1983.
TX83-4082	Oct. 21, 1983.
Virginia: VA83-3039	Sept. 30, 1983.
Indiana: IN83-2031	May 13, 1983.

Supersedeas Decisions to General Wage Determination Decisions

The numbers of the decisions being superseded and their dates of publication in the **Federal Register** are listed with each State. Supersedeas decision numbers are in parentheses following the numbers of the decisions being superseded.

Ney York: NY81-3065 (NY83-3050)	Sept. 11 1981

Signed at Washington, D.C. this 28th day of October 1983.

James L. Valin,

Assistant Administrator.

BILLING CODE 4510-27-M

DECISION #AR83-4038-MOD#3 (48 FR 21775-May 13, 1983) Garland, Clark and Hot Springs, Arkansas	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Cement Masons	$12.75	$ .63
Boilermakers	16.40	2.645
Carpenters:		
Carpenters	12.50	1.44
Millwrights, Pile-drivermen	13.00	1.46
Ironworkers	13.65	2.21
Laborers:		
Group 1	8.80	1.45
Group 2	9.05	1.45
Group 3	9.20	1.45
Group 4	9.30	1.45
Group 5	9.45	1.45
Group 6	9.70	1.45
Group 7	9.60	1.45
Painters:		
Brush and Roller	9.50	
Paperhanger	10.00	
Sheet Rock (tape & float only)	10.00	
Stage and Steel	11.50	
Spray and Sandblasting	12.75	
Painters operating any kind of taping or floating machine	13.25	
Power Equipment		
Operators:		
Group 1	14.09	1.40
Group 2	12.76	1.40
Group 3	12.16	1.40
Group 4	9.99	1.40
Sheet Metal Workers	14.08	3%+2.01
Sprinkler Fitters	14.57	3.23

DECISION NO. FL83-1058-MOD. #1 (48 FR 37799-AUGUST 19, 1983) DUVAL COUNTY, FLORIDA		
CHANGE:		
POWER EQUIPMENT OPERATORS:		
GROUP I	$13.34	2.45
GROUP II	11.96	2.45
GROUP III	9.56	2.45

DECISION #AR83-4039-MOD#4 (48 FR 21774-May 13, 1983) Union and Ouachita Counties, Arkansas	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Boilermakers	$16.40	$2.645
Carpenters:		
Carpenters	12.50	1.44
Millwrights-Pile-drivermen	13.00	1.46
Cement Masons	12.75	.63
Ironworkers:		
Ouachita County-excluding the Southeastern portion	13.65	2.21
Union County and Southeastern portion of Ouachita County	14.55	2.21
Laborers:		
Group 1	8.80	1.45
Group 2	9.05	1.45
Group 3	9.20	1.45
Group 4	9.30	1.45
Group 5	9.45	1.45
Group 6	9.70	1.45
Group 7	9.60	1.45
Power Equipment		
Operators:		
Group 1	14.09	1.40
Group 2	12.76	1.40
Group 3	12.16	1.40
Group 4	9.99	1.40
Sheet Metal Workers	14.08	3%+2.01

DECISION #AR83-4049-MOD#5 (48 FR 42350-July 15,1983) Sebastain,Crawford, Washington Counties, Arkansas	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Sebastain and Crawford Counties, Arkansas		
Boilermakers	$16.40	$2.645
Carpenters:		
Carpenters	11.54	1.54
Millwrights-Pile-drivermen	12.29	1.54
Cement Masons	12.75	.63
Laborers:		
Group 1	8.80	1.45
Group 2	9.05	1.45
Group 3	9.20	1.45
Group 4	9.30	1.45
Group 5	9.45	1.45
Group 6	9.70	1.45
Group 7	9.60	1.45
Power Equipment		
Operators:		
Group 1	14.09	1.40
Group 2	12.76	1.40
Group 3	12.16	1.40
Group 4	9.99	1.40
Sheet Metal Worker	14.08	3%+2.01
ADD:		
Marble Masons, Tile Layers and Terrazzo Workers	12.00	

DECISION #AR83-4069-MOD#6 (48 FR 41695-September 16, 1983) Pulaski and Jefferson Counties, Arkansas	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Boilermakers	$16.40	$2.645
Bricklayers,Stone-masons	12.00	1.89
Carpenters:		
Carpenters	12.50	1.44
Millwrights-Pile-drivermen	13.00	1.46
Cement Masons	12.75	.63
Ironworkers	13.65	2.21
Laborers:		
Group 1	8.80	1.45
Group 2	9.05	1.45
Group 3	9.20	1.45
Group 4	9.30	1.45
Group 5	9.45	1.45
Group 6	9.70	1.45
Group 7	9.60	1.45
Power Equipment		
Operators:		
Group 1	14.09	1.40
Group 2	12.76	1.40
Group 3	12.16	1.40
Group 4	9.99	1.40
Sheet Metal Workers	14.08	3%+2.01

DECISION NO. MI83-2008 - Mod. #2
(48 FR 6456 - February 11, 1983)
Alger, Baraga, Chippewa, Dickinson, Delta, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, and Schoolcraft Counties, Michigan

	Basic Hourly Rates	Fringe Benefits
Change:		
Asbestos Workers: Chippewa, Luce and Mackinac Counties	$16.38	$4.55
Boilermakers	19.19	3.45
Bricklayers; Stonemasons; Plasterers, Terrazzo Workers, and Tile Setters	14.24	2.12
Laborers: General Construction Laborers	11.27	1.69
Mortar Mixer, Material Mixer, Vibrator Operator, Concrete Mixer, Motor Driven Buggy, Chipping Hammer, Tamping Machine, Green Cutting (by air, electric or gas), Sand Mixer to pour, including pour from Trucks	11.37	1.69
Cement Gun Nozzleman, Blaster, Miner, Driller, Buster Operator	11.67	1.69
Caisson Work	11.82	1.69

DECISION NO. NY83-3018 - MOD. #2
(48 FR 22870 - May 20, 1983)
DUTCHESS, ORANGE, SULLIVAN & ULSTER COUNTIES, NEW YORK

	Basic Hourly Rates	Fringe Benefits
CHANGE:		
PAINTERS		
DUTCHESS; ULSTER; SULLIVAN: Brush	15.14	2.33+k
Structural Steel, Bridges, Towers, Fire Escapes, Smoke Stacks, Flagpoles, and other exposed areas 15' or more in height, Swing Stage, Window Jacks, Boatswain Chairs, Safety Belts and Spray Gun	16.14	2.33+k
ORANGE: Commercial Spray, Sandblasting, Taping & Paperhanging, Epoxy & other toxic materials	13.37	2.05
Elevated work: Structural steel, Power plants, Towers	14.37	2.05
Smoke stacks, Bridges	15.05	2.05

DECISION #OK83-4067-Mod.#2
(48 FR 41710-September 16, 1983)
Adair, Atoka, Bryan, Coal, Cherokee, Craig, Creek, Delaware, Haskell, Hughes, Leflore, Latimer, McIntosh, Mayes, Muskogee, Nowata, Okfuskee, Okmulgee, Osage, Ottawa, Pawnee, Pittsburg, Pushmataha, Rogers, Tulsa, Sequoyah, Wagoner, and Washington Cos., Oklahoma

	Basic Hourly Rates	Fringe Benefits
ADD:		
Carpenters: Area 3 Millwrights	$14.38	$1.25
CHANGE:		
Carpenters: Area 3 Carpenters	11.95	1.25
Piledrivermen	12.775	1.25
Carpenters: Area 8 Carpenters	12.22	1.34
Millwrights, Piledrivermen	12.47	1.34

DECISION #OK83-4068-Mod. #2
(48 FR 41714-September 16, 1983)
Alfalfa, Beckham, Blaine, Caddo, Canadian, Carter, Cleveland, Comanche, Cotton, Custer, Dewey, Ellis, Garfield, Garvin, Grady, Grant, Greer, Harmon, Harper, Jackson, Jefferson, Johnston, Kay, Kingfisher, Kiowa, Lincoln, Logan, Love, McClain, Major, Marshall, Murray, Noble, Oklahoma, Payne, Pontotoc, Roger Mills, Pottawatomie, Seminole, Stephens, Tillman, Washita, Woods, & Woodward Cos., Oklahoma

	Basic Hourly Rates	Fringe Benefits
OMIT:		
Carpenters: Area 5 (McClain & Cleveland Cos.)		

DECISION #OK83-4069
Mod. #2 (cont'd)

	Basic Hourly Rates	Fringe Benefits
ADD:		
Carpenters: Area 1 (McClain and Cleveland Counties)		
Carpenters: Area 6 Millwrights	$14.38	$ 1.25
CHANGE:		
Carpenters: Area 6 Carpenters	$11.95	$ 1.25
Piledrivermen	12.775	1.25

DECISION NO. VA83-3039-MOD. # 1
(48 FR 45003-September 30, 1983)
BLAND, BUCHANAN, DICKENSON, GRAYSON, LEE, RUSSELL, SCOTT, SMYTH, TAZEWELL, WASHINGTON, WISE, & WYTHE COUNTIES, VA

	Basic Hourly Rates	Fringe Benefits
ADD:		
TRANSIT MIX TRUCK DRIVER	$5.00	

DECISION NO. PA81-3043	Basic Hourly Rates	Fringe Benefits
MOD. #12		
(46 FR 37212 - July 17, 1981) Armstrong, Allegheny, Butler, Beaver, Fayette, Indiana, Washington & Westmoreland Counties, Pennsylvania		
CHANGE:		
Asbestos Workers	$15.88	5.29
Carpenters		
Zone 1	15.00	29%
Zone 2	14.00	30%
Cement masons		
Zone 1	15.94	3.98
Electricians		
Zone 3	17.50	1.50 +8-4%
Elevator Constructors	17.375	3.00+ a+b
Elevator Constructors Helpers	12.16	3.00+ a+b
Elevator Constructors Helpers (Prob.)	8.69	
Landscaping:		
Landscape Laborers	10.30	22%
Landscape Tractor op.	10.72	22%
Line Construction:		
Zone 1		
Lineman	18.06	.80+ 3%
Winch truck op.	12.59	.80+ 3%
Groundman	10.76	.80+ 3%
Marble Setters		
Zone 1	14.92	3.77
Plasterers		
Zone 1	14.19	3.42
Plumbers		
Zone 3	16.40	4.34
Piledrivermen	16.14	28%
Soft floor layers		
Zone 2	14.00	30%
Steamfitters:		
Zone 1	17.40	3.39
Sprinkler Fitters		
Zone 1	17.60	3.19
Sheet metal workers	16.59	4.38
Stonemasons:		
Zone 1	14.48	3.93
Tile setters		
Zone 1	14.00	4.86

DECISION NO. PA81-3090	Basic Hourly Rates	Fringe Benefits
MOD. #8		
(46 FR 61813 - December 18, 1981) Lycoming County, Pa.		
CHANGE:		
Bricklayers & Stonemasons	$12.25	2.56
Electricians	12.61	3.56
LABORERS::		
General Laborers	9.20	1.40
Operator of jackhammer, paving and other pneumatic electrical and mechanical tools, laying of all clay, terra cotta ironstone, vitrified concrete or nonmetallic pile and the making of joints for same, wagon drill op. cofferdam (below 10'), tunnel free air, handling and using cutting or burning torches in the wrecking of buildings, blasters, plasterers tenders, mason tenders, scaffold builders and removal of power boggies	9.35	1.40
Plumbers & Steamfitters	16.76	2.44

DECISION #TX83-4007-MOD.#7 (48 FR 932-January 1,1983) Wichita County, Texas	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Carpenters:		
Carpenters	$13.45	$2.18
Millwrights	13.95	2.18

DECISION #TX83-4042-MOD.#4 (48 FR 25106-June 3,1983) Collin,Dallas,Denton, Ellis,Grayson,Hood,Hunt, Johnson,Kaufman,Palo Pinto,Rockwall,Tarrant and Wise Counties	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Carpenters:		
Zone 2		
Carpenters & Piledrivermen	16.45	2.63
Millwrights	16.08	3.73
Ironworkers:		
Zone 1	16.19	2.92
Laborers	10.24	1.10
Lathers	16.46	2.54
Line Construction:		
Zone 1 - Collin,Dallas, Ellis,Grayson,Hunt, Kaufman and Rockwall Counties		
Linemen	17.10	.80+ 8-1/2%
Cable Splicers	18.81	.80+ 8-1/2%
Operators	17.955	.80+ 8-1/2%
Groundmen	11.97	.80+ 8-1/2%
Zone 2 - Denton,Hood, Johnson,Palo Pinto, Tarrant & Wise Counties		
Linemen	15.90	.80+8½%
Cable Splicers	17.49	.80+8½%
Operators	16.695	.80+8½%
Groundmen	11.13	.80+8½%
Plumbers & Pipefitters:		
Zone 1	17.50	2.19
Sheet Metal Workers:		
Zone 1	17.515	2.065

DECISION #TX83-4077-MOD#1 (48 FR 48908-October 21, 1983) Galveston and Harris Counties, Texas	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Painters:		
Galveston County -		
Group 1	$14.945	$3.20
Group 2	15.195	3.20
Group 3	14.19	3.20

DECISION #TX83-4078-MOD#1 (48 FR 48909-October 21, 1983)- Armstrong,Carson, Castro,Childress, Collingsworth,Dallam, Deaf Smith,Donley,Gray, Hansford,Hartley, Hemphill,Hutchinson, Lipscomb,Moore,Ochiltree,Oldham,Potter, Randall,Roberts,Sherman,Swisher & Wheeler Counties, Texas	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Carpenters:		
Zone 1		
Carpenters	14.85	.81
Millwrights	15.20	.81
Zone 2		
Carpenters	13.45	2.18
Millwrights	13.95	2.18
Ironworkers:		
Zone 1	14.30	3.00
Laborers:		
Group 1	8.49	1.41
Group 2	8.64	1.41

DECISION NO.TX83-4082 - MOD. #1 (48 FR 48913 - 10/21/83) Jefferson & Orange Cos., Texas	Basic Hourly Rates	Fringe Benefits
CHANGE:		
Carpenters:		
Carpenters-Commercial	16.52	3.065
Millwrights	16.875	1.95
Piledrivermen	16.76	2.90

MODIFICATION P. 7

DECISION NO. IN83-2031 - Mod. #3
(48 FR 21771 - May 13, 1983)
Statewide, except Lake, LaPorte, Porter and St. Joseph Counties, Indiana

	Basic Hourly Rates	Fringe Benefits
Add:		
Linemen:		
Electrical Underground Construction shall include excavation of earth, laying of conduits, ducts, cable and basis for street lights, tranformers and excavation of manholes: Statewide, except Gibson, Pike, DuBoise, Crawford, Posey, Vanderburg, Warrick, Spencer, Perry Counties, and the Remainder of Lake County (exclusive of Calument Area):		
Lineman and Equipment Operator	$15.89	5.65+ 8-1/2%
Powderman and Equipment Mechanics	12.04	.65+ 8-1/2%
Groundmen and Truck Driver	10.25	.65+ 8-1/2%

	Basic Hourly Rates	Fringe Benefits

SUPERSEDEAS DECISION

STATE: NEW YORK
DECISION NO. NY83-3050
COUNTY: CHEMUNG
Date: Date of Publication
Supersedes Decision No. NY81-3065, dated September 11, 1981 in 46 FR 45520
DESCRIPTION OF WORK: Building Construction (does not include single family homes and apartments up to and including 4 stories), Heavy & Highway Construction Projects

	Basic Hourly Rates	Fringe Benefits
ASBESTOS WORKERS	$18.28	3.09
BOILERMAKERS	17.85	3.77
BRICKLAYERS, CEMENT MASONS, MARBLE SETTERS, PLASTERERS, STONE MASONS, TERRAZZO WORKERS, & TILE SETTERS	12.45	1.35
CARPENTERS:		
All the area west of a straight line from the intersection of Southport Twp. line and Clark Hallow Road to Route 17E to Winter Street, Big Flats, then in a straight line north to the Schuyler County line:		
Carpenters	10.81	2.27
Millwrights & Piledrivers	11.06	2.27
Heavy & Highway	13.46	2.535 +a
Remainder of County:		
Carpenters	12.82	1.83
Millwrights & Piledrivers	13.17	1.83
Heavy & Highway	14.20	1.795 +a
CEMENT MASONS (Heavy & Highway)	13.71	1.85
ELECTRICIANS	16.60	3.15 + 3%
ELEVATOR CONSTRUCTORS	14.48	2.69+ b+c
HELPERS	10.14	2.69+ b+c
HELPERS (PROB.)	7.24	
GLAZIERS	10.92	1.69
IRONWORKERS	14.40	2.85
LABORERS:		
Building	9.97	1.85
Heavy and Highway:		
Class A	12.39	1.39+d
Class B	12.59	1.35+d
Class C	12.79	1.35+d
Class D	12.59	1.35+d
PAINTERS:		
Brush	10.05	1.45
Toothpick Staging over 25'; Structural Scaffold over 39'	10.30	1.45
Paperhangers; Vinyl Hangers	10.40	1.45
Swing Chair, Swing Scaffold; Power Grinder with Respirator	10.55	1.45
Epoxy - Brush and Roll	10.60	1.45
Stilts	10.80	1.45
Spray	10.90	1.45
Structural Steel; Steeplejack (over 100'); Sandblasting; Steamcleaning (acid or hi-pressure water)	11.05	1.45
Spray - Epoxy	11.30	1.45
PLUMBERS & STEAMFITTERS	15.80	2.55
POWER EQUIPMENT OPERATORS:		
BUILDING CONSTRUCTION		
GROUP I:		
I-A	16.36	3.40+e
I-B	16.69	3.40+e
I-C	17.01	3.40+e
I-D	17.34	3.40+e
I-E	17.99	3.40+e
I-F	18.64	3.40+e
I-G	19.28	3.40+e
I-H	19.93	3.40+e
GROUP II	16.04	3.40+e
GROUP III	16.12	3.40+e
GROUP IV	14.71	3.40+e
GROUP V	12.13	3.40+e
GROUP VI	16.92	3.40+e
POWER EQUIPMENT OPERATORS:		
HEAVY & HIGHWAY CONSTRUCTION		
GROUP I	15.24	3.55+d
GROUP II	14.74	3.55+d
GROUP III	13.31	3.55+d
GROUP IV	12.05	3.55+d
ROOFERS	11.00	2.18
SHEET METAL WORKERS	14.95	2.19+3%
SPRINKLER FITTERS	16.92	3.13

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	Basic Hourly Rates	Fringe Benefits
TRUCK DRIVERS:		
(HEAVY & HIGHWAY):		
Class 1	12.39	2.40+d
Class 2	12.44	2.40+d
Class 3	12.49	2.40+d
Class 4	12.64	2.40+d
Class 5	12.79	2.40+d
Welders-receive rate prescribed for craft to which welding is incidential.		

Basic Hourly Rates	Fringe Benefits

PAID HOLIDAYS: A-New Year's Day; M--Memorial Day; C-Independence Day; D-Labor Day; E-Thanksgiving; F-Christmas Day.

a. Paid Holidays: C & D, provided employee works his scheduled work day before and his scheduled work day after the holiday and is on the payroll in the payroll week in which the holiday falls.

b. Paid Holiday: A through F, and the Friday after Thanksgiving.

c. Employer contributes 8% basic hourly rate for 5 years or more of service or 6% basic hourly rate for 6 months to 5 years of service as vacation pay credit.

d. Paid Holidays: A through F, provided the employee works the working day before and the working day after the holiday.

e. Paid Holidays: A through F, provided the employee works either the work day immediately preceding the holiday or the scheduled work day immediately following the holiday.

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CLASSIFICATION DESCRIPTIONS

LABORERS (HEAVY AND HIGHWAY CONSTRUCTION):

CLASS A: Laborers, drill tenders, outboard and hand boats.

CLASS B: Bull float, chain saw, concrete aggregate, bin concrete bootman, gin buggy, hand or machine vibrator, jackhammer, mason tender, mortar mixer, pavement breaker, handlers of all steel mesh, small generators for laborers' tools, installation of bridge drainage pipe, pipelayers, vibrator type rollers, tamper, drill doctor, tail or crew op. on asphalt paver, water pump op. (1½" and single diaphram), nozzle (asphalt, gunnite, seeding, and sandblasting), laborers on chain link fence erection, rock splitter and power unit, pusher type concrete saw and all other gas, electric, oil and air tool operators, wrecking laborer.

CLASS C: All rock or drill machine operators (except quarry master and similar type), acetylene torch op., asphalt raker, powderman.

CLASS D: Blasters, form setter, stone or granite curb setters.

POWER EQUIPMENT OPERATORS (BUILDING CONSTRUCTION):

GROUP I: Cranes (cable and hydraulic climbing and tower)
I-A: 121 ft. and under
I-B: Between 121 ft. and 151 ft.
I-C: Between 151 ft. and 201 ft.
I-D: Between 201 ft. and 251 ft.
I-E: Between 251 ft. and 301 ft.
I-F: Between 301 ft. and 351 ft.
I-G: Between 351 ft. and 401 ft.
I-H: Between 401 ft. and 451 ft.

GROUP II: Air tugger; derrick; dredge; big generator plant; cableway, backhoe, clamshell, dragline, shovel and similar machines over 3/8 cubic yards capacity (factory rating); bridge crane (all types); caisson auger and similar type machine; forklift (with factory rating of 15 ft. or more of lift); hoist (on steel erection); mucking machines; Boss carrier (and similar types); three drum hoist (when all three drums are in use).

GROUP III: A-frame truck; backfilling machine; hoist (1 or 2 drums); Barber Green and similar type machines; maintenance engineer (mechanic); mechanical slurry machines (all kinds); belt crete and similar type machine; bituminous spreading machines; post hole digger; bulldozer; carry-all type scraper; core drill; pumps (regardless of motive power) no more than (4) in number not to exceed 20 inches in total capacity); fine grade and finish rollers, side boom tractor; stone crusher; compressors (4 not to exceed 200 CFM combined capacity, or 3 or less with more than 1200 CFM, but not to exceed 2000 CFM); concrete mixer; concrete pumps, Tournadozer and similar types; crane hoe shovel 3/8 yds. capacity or less (factory rating); Tournapull and similar types; dinky locomitives (all types), tower-mobile and similar types; elevating grader; elevator; trenching machines; fine grade macines (all kinds); welder; front end loader; forklift, with factory rating of less than 15 feet of lift; well drill; well point system; high pressure boiler.

CLASSIFICATION DESCRIPTIONS (CONT'D)

POWER EQUIPMENT OPERATORS (BUILDING CONSTRUCTION): (CONT'D)

GROUP III (CONT'D): concrete pumps, Tournadozer and similar types: crane hoe shovel 3/8 yds. capacity or less (factory rating); tournapull and similar types; dinky locomotives (all types), tower-mobile and similar types; elevating grader; elevator; trenching machines; fine grade machines (all kinds); welder; front end loader; forklift, with factory rating of less than 15 feet of lift; well drill; well point system; high pressure boiler.

GROUP IV: Any combination (not to exceed 3 pieces of equipment); welding; machine or mechanical conveyor (over 12 ft. in length); fireman; belt crete generator; mechanical heater; roller (fill & grade); pumps (regardless of motive power), no more than (3) in number, not to exceed twelve inches total capacity); rubber tired tractor; compressor 3 or less, not to exceed 1200 CFM combined capacity; longitudinal float.

GROUP V: Truck Crane.

GROUP VI: Master Mechanic.

POWER EQUIPMENT OPERATORS (HEAVY AND HIGHWAY CONSTRUCTION):

GROUP I: Automated concrete spreader (CMI); automatic fine grade; backhoe (except tractor mounted, rubber tired); belt placer (CMI type); blacktop plant (automated); cableway, caisson auger, central mix concrete plant (automated), cherry picker (over 5 tons capacity); concrete pump (8" or over); crane, cranes & derricks (steel erection); dragline; dredge; dual drum paver; excavator (all purpose-hydraulically operated) (gradall or similar); fork lift (factory rated 15 ft. and over); front end loader 4 c.y. and over); head tower (sauerman or equal); hoist (2 or 3 drum), mine hoist, mucking machine or mole, over head crane (gantry or straddle type); piledriver; power grader; quad 9; quarry master (or equivalent); scraper; shovel; sideboom; slip form paver; tractor drawn belt type loader; truck cranes; truck or trailer mounted log chipper (self-feeder); tug operator (except manned rented equipment); tunnel shovel.

GROUP II: Backhoe (tractor mounted, rubber tired); bituminous spreader and mixer; blacktop plant (non-automated), blast or rotary drill (truck or tractor mounted); boring machine; cage-hoist; central mix plant (non-automated and all concrete batching plants; cherry picker (5 tons capacity and under); compressors (4 or less) exceeding 2000 C.F.M. combined capacity; concrete paver (over 16S); concrete pump (under 8"); crusher; diesel power unit; drill rigs (tractor mounted); front end loader (under 4 c.y.); hi-pressure boiler (15 lbs. and over); hoist (one drum); Kolman plant loader and similar type loaders; L.C.M. work boat operator; locomotive; maintenance/engineer/greaseman/welder; mixer (for stabilized base self-propelled); monorail machine; plant engineer; pump crete; ready mix concrete plant; refrigeration equipment (for soil stabilization); road widener; roller (all above sub-grade); sea mule; tractor with dozer and/or pusher; trencher; tugger-hoist; winch; winch cat.

CLASSIFICATION DESCRIPTIONS (CONT'D)

POWER EQUIPMENT OPERATORS (HEAVY AND HIGHWAY CONSTRUCTION): CONT'D)

GROUP III: A-frame truck; compressors, dust collectors, generators, pumps, welding machines; light plants (4 of any type of conbination); concrete pavement spreaders and finishers; conveyor; drill-core; drill-well; electric pumps used in conjunction with well point system; farm tractor with accessories; fine grade machine; fork lift (under 15 feet); grout pump; gunnite machine; hammers (hydraulic-self-propelled); hydra-spiker (ride-on); hydro blaster (water); post hole digger and post driver; power sweeper; roller (grade and fill); submersible electric pump (when used in lieu of well point system); tractor with towed accessories; vibratory compactor; vibro tamp; well point.

GROUP IV: Aggregate plant; boiler (used in conjunction with production; cement and bin operator; compressors, dust collectors, generator pumps, welding machines, light plants (3 or less of any type or combination; concrete paver or mixer (16S and under), concrete saw (self-propelled); fireman; form tamper; hydraulic pump (jacking system); mulching machine; oiler; papapet concrete or pavement grinder; power broom (towed), power beaterman; Ravinua widener; shell winder; steam cleaner; tractor.

TRUCK DRIVERS (HEAVY & HIGHWAY CONSTRUCTION):

CLASS 1: Warehouseman, yardmen, pickups, panel trucks, flatboy material trucks (straight jobs), single axle dump trucks, dumpsters, material checkers and receivers, greasers, truck tiremen, mechanic helpers and parts chaser.

CLASS 2: Tandems, batch trucks, mechanics and dispatcher.

CLASS 3: Semi-trailers, low-boy trucks asphalt distributor trucks, agitator,

CLASS 4: Specialized earth moving equipment - Euclid type or similar off-highway equipment where not self-loaded, straddle (Ross) carrier and self-contained concrete mobile unit.

CLASS 5: Off-highway tandem back-dump, twin engine equipment and double hitched equipment where not self loaded.

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LINE CONSTRUCTION:	Basic Hourly Rates	Fringe Benefits
Electrical Overhead & Underground Distribution Work & Signal Work for RR and for R.E.A. where no other trade is or has been involved:		
Journeyman Lineman & Technician	14.20	3.95+ 5%+a
Cable Splicer	18.92	3.95+ 5%+a
Groundman Digging Machine Operator, Groundman Dynamite Man	12.78	3.95+ 5%+a
Groundman Mobile Equipment Operator, Mechanic First Class, Ground Truck Driver	11.36	3.95+ 5%+a
Groundman Truck Driver (Tractor Trailer)	12.07	3.95+ 5%+a
Driver Mechanic, Groundman - Experienced	10.65	3.95+ 5%+a
All Overhead Transmission Line Work and Lighting for Athletic Fields		
Journeyman Lineman & Technician	16.32	3.95+ 5%+a
Groundman Digging Machine Operator, Groundman Dynamite Man	14.688	3.95+ 5%+a
Groundman Mobile Equipment Operator, Mechanic First Class Groundman Truck Driver	13.056	3.95+ 5%+a
Groundman Truck Driver (Tractor Trailer Unit)	13.872	3.95+ 5%+a
Driver Mechanic Groundman	12.24	3.95+ 5%+a
Sub-Station Switching Substructures (When not part of the line), Electrical, Telephone or CATV Commercial Work, Street Lighting & Signal Systems where other trades are or have been involved		
Journeyman Lineman & Technician	17.20	3.95+ 5%+a
Cable Splicer	18.92	3.95+ 5%+a
Groundman Digging Machine Operator, Groundman Dynamite Man	15.48	3.95+ 5%+a
Groundman Mobile Equipment Operator, Mechanic First Class, Groundman Truck Driver	13.76	3.95+ 5%+a
Groundman Truck Driver (Tractor Trailer Unit)	14.62	3.95+ 5%+a
Driver Mechanic, Groundman	12.90	3.95+ 5%+a
All Pipe-type Cable Installations Maintenance Jobs or Projects		
Journeyman Lineman	17.20	3.95+ 5%+a
Certified Lineman Welder	18.06	3.95+ 5%+a
Cable Splicer	18.92	3.95+ 5%+a
Groundman Equipment Operator	17.20	3.95+ 5%+a
Groundman Truck Driver (Tractor Trailer Unit)	14.62	3.95+ 5%+a
Groundman Truck Drivers	13.76	3.95+ 5%+a
Groundman	12.90	3.95+ 5%+a

FOOTNOTE:

a. Paid Holidays: New Year's Day, Washington's Birthday, Good Friday, Decoration Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works the day before or the day after the holiday.

[FR Doc. 83-29759 Filed 11-3-83; 8:45 am]

BILLING CODE 4510-27-C

federal register

Friday
November 4, 1983

Part III

Department of Transportation

Coast Guard

Subdivision and Stability Regulations; Final Rules

DEPARTMENT OF TRANSPORTATION

Coast Guard

46 CFR Parts 2, 31, 32, 35, 37, 42, 46, 56, 71, 72, 73, 74, 75, 78, 79, 91, 93, 97, 99, 106, 107, 108, 109, 111, 151, 153, 154, 163, 167, 168, 170, 171, 172, 173, 174, 177, 178, 179, 185, 189, 190, 191 and 196

[CGD 79-023]

Subdivision and Stability Regulations

AGENCY: Coast Guard, DOT.

ACTION: Final rules.

SUMMARY: The Coast Guard is transferring the subdivision and stability regulations for merchant vessels to a new Subchapter S. The old regulations were scattered in various places throughout Title 46 and Title 33, Code of Federal Regulations, and included several redundent and poorly stated requirements. Rewriting the regulations and placing them in one subchapter will promote a uniform set of standards that can be more easily understood and will reduce the time and costs involved to comply with the various requirements. The new subchapter also includes requirements that have been previously issued as policy statements or interpretations but that have not yet been published in the Code of Federal Regulations.

DATES:

1. Effective Date: These regulations become effective on December 5, 1983.

2. Closing date for comments: As explained in paragraph 7 of the Discussion of Comments, comments may be submitted on or before December 19, 1983.

3. The incorporation by reference of the publications listed under **ADDRESSES** have been approved by the Director of the Federal Register December 5, 1983.

ADDRESSES:

1. Standards that have been incorporated by reference into this document may be obtained from the following addresses:

MIL-P-21929B: Military Specifications, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120;

International Maritime Organization (IMO) Resolution A.265(VIII), National Technical Information Service, Springfield, Virginia 22151.

(Under the title—"Regulations on Subdivision and Stability of Passenger Ships as Equivalent to Part B of Chapter II of the International Convention for the Safety of Life at Sea, 1960" (Volume IV of the U.S. Coast Guard's "Commandant's International Technical Series", USCG CITS-74-1-1.))

2. The materials listed above are also available for inspection at the Office of the Federal Register, Information Center, Room 8301, 1100 L Street, N.W., Washington, D.C. 20408.

3. Comments should be mailed to Commandant (G-CMC/44) (CGD 79-023), U.S. Coast Guard, Washington, D.C. 20593. The comments, final evaluation, and materials referenced in this document 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 (G-CMC/44), Room 4402, Coast Guard Headquarters, 2100 Second Street, SW., Washington, D.C. 20593.

FOR FURTHER INFORMATION CONTACT: LCDR Kevin V. Feeney, Office of Merchant Marine Safety (G-MTH-5/13), Room 1308, U.S. Coast Guard Headquarters, Washington, D.C. 20593, (202) 426-2187.

SUPPLEMENTARY INFORMATION:

1. A Notice of Proposed Rulemaking was published in the **Federal Register** of August 12, 1982 (45 FR 35090). The closing date for submitting comments was November 10, 1982. Eighteen comments were received. The commenters included ship builders, ship operators, trade organizations, independent naval architects, and agencies of the federal government. The comments are discussed below.

2. As stated in the NPRM, there were four other sets of stability regulations being prepared and which were not included in the NPRM. As each project is completed, its final rules are to be transferred to Subchapter S. The status of each project is described below.

(a) *CGD 82-004 Offshore Supply Vessels.* Stability requirements for new offshore supply vessels have been published in the **Federal Register** of February 14, 1983 at page 6636. As stated in that notice, an opportunity is being afforded to submit comments on its provisions. The comment period closes on June 14, 1983.

(b) *CGD 76-053 Subdivision and Damage Stability for Certain Passenger Vessels.* Regulations for passenger vessels were published as final rules on August 26, 1982 (47 FR 37551). They have been renumbered and are included in §§ 170.015, 170.135, 171.060, 171.075, and 171.082 in these final regulations.

(c) *CGD 76-080 Stability Standards for Hopper Dredges.* A notice of proposed rulemaking was published in the **Federal Register** on December 10, 1979 (44 FR 70791) and a supplemental notice was published on January 24, 1980 (45 FR 5780). Persons were given an opportunity to comment on those proposals after they were published. The proposal is being reanalyzed based upon comments received and further action is to be determined upon completion of this analysis.

(d) *CGD 77-027 Damage Stability Standards for Ocean-Going Chemical Barges.* A notice of proposed rulemaking has not yet been published for public comment. Final rules are not expected for some time and, accordingly, the old damage stability regulations for ocean-going chemical barges are included in Subchapter S at §§ 172.103-172.110.

In addition to these projects, an advance notice of proposed rulemaking concerning damage stability requirements for Great Lakes cargo vessels was recently published in the **Federal Register** of February 28, 1983 (40 FR 8312). An opportunity is being afforded to submit comments on its provisions and the comment period closes on August 31, 1983.

3. The principal goals of this rulemaking have been to consolidate existing stability regulations into one subchapter, redraft the regulations in clearer format and style, and publish various policy statements relating to vessel stability that have not yet been published in regulatory form. As explained in the NPRM, minor substantive changes have been made but only to the extent that they would not interfere with the goals in the rulemaking. Several commenters suggested that additional substantive changes be made to the final regulations. These changes are summarized in paragraph 4. They will be analyzed to determine whether there is a demonstrated need for making them and, if so, subsequent rulemaking projects will be started to incorporate them into Subchapter S.

As stated in the NPRM, publication of these regulations will also facilitate Coast Guard plans concerning future transfers of functions associated with the regulations to the American Bureau of Shipping (ABS). Discussions with the ABS have been started and it is anticipated that in the near future the Coast Guard will begin to accept the ABS's review of particular vessels in determining compliance with requirements in subchapter S.

4. Commenters recommended changes to the following regulations:

(a) The stability requirements in Subpart 93.20 for vessels that carry grain in bulk. (A determination to revise these regulations has already been made and a rulemaking project will be started in the near future.)

(b) The weather criterion set out in Subpart E of Part 170 and certain other intact stability standards in Parts 170, 173, and 174.

(c) Damage stability standards in Part 172 relating to subdivision and watertight integrity.

(d) Requirements in Part 171 concerning collision and aft peak bulkheads.

(e) Minor changes in Subchapters E (Load Lines) and IA (Mobile Offshore Drilling Units) to clarify their applicability to Subchapter S.

5. These regulations include, in addition to the new Subchapter S, several editorial amendments that are necessary to transfer the old regulations to their new placement in Subchapter S. These amendments also update cross references throughout Title 46 to regulations that are now in new Subchapter S. Tables I through IV below show how the old regulations relate to those in the new subchapter.

Drafting Information

The principal drafter of this document was LCDR K. V. Feeney, Office of Merchant Marine Safety. Mr. W. R. Register, Office of the Chief Counsel, provided assistance.

Evaluations

These regulations have been evaluated under Executive Order 12291 and have been determined not to be major regulations. These regulations have also been evaluated under the Department of Transportation's Policies and Procedures for Simplification, Analysis, and Review of Regulations (DOT Order 2100.5 of May 22, 1980) and have been determined to be nonsignificant. As explained in the final evaluation, the regulations will provide a cost savings both to the marine industry and to Federal, State, and local governments that operate vessels. The annual savings is estimated to be in the range of $146,000 to $292,000. The savings will result principally from the reduced time and personnel involved to understand and comply with the regulations.

The regulations should also produce an annual cost savings for the Coast Guard estimated to be in the range of $21,600 to $43,200. Better quality vessel plan submittals can be expected and should result in less time and personnel costs involved for the Coast Guard to review the plans for compliance with the regulations.

Regulatory Flexibility Act Certification

Small businesses and other small entities will be affected by these regulations. These include certain independent naval architects, vessel owners, shipyards, and local governments. The impact is in terms of a cost savings which is estimated to be $520 for each ship ($64 per barge) for which stability plans are submitted for approval. This cost savings will in many cases be up to 5% greater than the savings expected to result for larger entities. Based upon this data and supporting explanation in the final evaluation, it is certified pursuant to section 605 of the Regulatory Flexibility Act (94 Stat. 1164, Pub. L. 96-354) that the regulations will not have a significant economic impact on a substantial number of small entities.

OMB Control Numbers

Subparts C and D of Part 170 of these regulations contain reporting and recordkeeping requirements. These are existing requirements most of which have been previously approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (Pub. L. 96-511). The reporting and recordkeeping requirements for small passenger vessels (46 CFR Subchapter T), vessels carrying dangerous cargoes (46 CFR Subchapter O), cargo and miscellaneous vessels (46 CFR Subchapter I), tank vessels (46 CFR Subchapter D), tank vessels carrying oil in bulk (33 CFR Part 157), and mobile offshore drilling units (46 CFR Subchapter IA) have been approved by OMB and assigned control numbers 2115-0095, 2115-0114, 2115-0130, 2115-0131, 2130-0186, and 2130-0188 respectively. The reporting and recordkeeping requirements for passenger vessels (46 CFR Subchapter H), nautical school ships (46 CFR Subchapter R), and oceanographic vessels (46 CFR Subchapter U) had not been previously approved by OMB because there are currently fewer than 10 respondents for each vessel type. Since the regulations have general applicability to the class of vessels, they will be submitted to OMB for approval in accordance with OMB regulations in 5 CFR 1320.14 before December 31, 1983.

Discussion of Comments and Changes Made

General Comments

1. Most commenters supported consolidation of subdivision and stability regulations into one subchapter. However, two commenters disagreed and recommended that individual standards be retained in existing vessel subchapters. The determination to consolidate the regulations into one subchapter was made to assist vessel designers, who are the primary users of the regulations, in performing stability analyses for numerous types of vessels. A vessel operator is not as concerned with design standards as with requirements for loading and operating the vessel in compliance with those standards. This guidance is given to the operator in the form of a stability letter or a stability booklet developed by the designer. Requirements concerning stability letters are being retained in the various vessel subchapters as noted in Table III below.

2. Some commenters expressed difficulty in determining what regulations apply to a particular class of vessel. This determination can be made by looking at the titles to the various parts and their applicability statements. The format of the Stability Subchapter is basically as follows:

Part 170—General Provisions—contains rules that apply to all vessel types.

Part 171—Special Rules Pertaining to Vessels Carrying Passengers—contains rules that apply to each vessel that carries passengers.

Part 172—Special Rules Pertaining to Bulk Cargoes—contains rules that apply to each vessel that carries in bulk a cargo regulated under 46 CFR Subchapter D or O or 33 CFR Part 157, Subpart B.

Part 173—Special Rules Pertaining to Vessel Use—contains rules that apply to each vessel that performs a specific function such as lifting, training, research, or towing.

Part 174—Special Rules Pertaining to Specific Vessel Types—contains rules for specific classes of vessels such as deck cargo barges, mobile offshore drilling units, nuclear vessels, tugs and OTEC facilities.

To determine the applicability of specific regulations to a particular vessel type, it is necessary only to know its intended operation. A barge, for example, must meet—

(a) Part 170;

(b) Part 171 if it carries passengers;

(c) Part 172 if it is a tank barge;

(d) Part 173 if it has a crane on board; and

(e) Part 174 if it carries deck cargo.

3. Five commenters objected to presentation of standards and formulas in metric units only. They said that use of metric units would be a substantial burden for those who are not familiar with the metric system and whose computer programs are in English units. The formulas, tables, and graphs in the final regulations are given in both English and metric units. Also, in

preparing the NPRM minor errors were made in converting from English to metric units. These errors have been corrected in the final rules.

4. One commenter expressed confusion over the NPRM preamble explanation of the status of standards for tugboats and towboats. The standards published in the NPRM were those that have been applied by the Coast Guard since 1974. In 1976 the Coast Guard published an advance NPRM announcing that new standards were being considered to replace the 1974 standards. The advance NPRM was later cancelled since the need for upgraded standards could not be demonstrated.

5. One commenter indicated that the old regulations in 46 CFR Part 93 did not apply to a Great Lakes bulk carrier unless it was to engage in an international voyage. The various applicability statements in old Part 93 were conflicting regarding the applicability of the standards to vessels on international, coastwise, and Great Lakes voyages. It has been the Coast Guard's practice to consider the standards in old Part 93 applicable to vessels on each of these stated routes. However, regarding Great Lakes bulk carriers, the Coast Guard has not required a stability test for every vessel and has permitted the designer to estimate the vessel's vertical center of gravity. Additionally, the Coast Guard has applied a modified intact stability criterion to these vessels in lieu of the Weather Criterion in Subpart E of Part 170. The Coast Guard has no intent to change these practices. Accordingly, § 170.175(d) has been modified to indicate that the Coast Guard may dispense with the requirement for a stability test on a particular vessel. Additionally, in lieu of the Weather Criterion, the Coast Guard will continue to apply the modified intact stability criterion to Great Lakes bulk carriers under the equivalency provisions of § 170.010. In a future rulemaking project, these practices will be considered for incorporation into Subchapter S.

6. One commenter concluded that the NPRM contained a requirement for offshore supply vessels (OSV's), especially those with anchor handling capability, to meet a damage stability standard. As noted in paragraph 2(a) under **SUPPLEMENTARY INFORMATION**, and in the NPRM preamble, Subchapter S does not include requirements for OSV's.

7. Minor revisions have been made to the regulations to correct errors and improve clarity but without changing their substance. These revisions were made based upon comments received and upon Coast Guard review of the proposed regulations. The changes made in §§ 170.255(c), 170.285, and 170.290 were extensive and, accordingly, an opportunity to comment on the accuracy of the changes is being provided. Comments may be submitted to the address listed above. Persons desiring acknowledgment of their comments should enclose a self-addressed post card or envelope. All comments received before the comment period closes will be considered. These sections may be further changed based upon comments received.

Specific Comments

PART 170—STABILITY REQUIREMENTS FOR ALL INSPECTED VESSELS

§ 170.010 One commenter suggested that the Coast Guard should not be so rigid in its requirements and that alternate stability assessment methods should be accepted for unique vessels or vessels operating in unique environments. Section 170.010 does provide the opportunity for designers, owners, and builders to propose alternatives to the Coast Guard where equivalent levels of safety can be demonstrated. The regulations themselves provide various specific alternatives. As examples, § 171.060 provides an option between two different subdivision standards for certain passenger vessels and § 173.095 provides an option between two different stability criteria for vessels that tow.

§ 170.050 Two commenters suggested that a definition of "International voyage" be included in this section. A definition is included in § 171.010(g) of Part 171 and the term is used only in that part.

§ 170.050(a) One commenter suggested that the term "Field" be deleted from the title "Commander, Merchant Marine Technical Field Office" since there is no longer a merchant marine technical office in Coast Guard Headquarters. The word "Field" has been deleted in the final rules.

§ 170.050(f) One commenter suggested that the definition of "ocean" be expanded to include "seas, bays, and inlets" so as to cover specific bodies of inland waters that are fairly large in size. The requirements for vessels on ocean voyages are more rigorous than requirements for vessels on inland voyages. The more rigorous requirements are not needed on many "seas, bays, and inlets" and, accordingly, are not included in the definition of "ocean". The definition provides, however, that the Commandant can designate as an "ocean" any specific body of water that is not listed in the definition.

§ 170.050(h) One commenter suggested that the definition of "oil" be expanded to include all liquid hydrocarbons including liquid gas. The definition is extremely broad and includes oil of any kind or in any form without limitation. Also, the final regulations include specific requirements in Part 172 for vessels that carry liquefied gases.

§§ 170.070, 170.105, and 170.160 One commenter thought that the reference to passenger vessels in the applicability statement for plan review requirements in § 170.070 was confusing and did not exempt certain barges which were exempt from plan review under the old requirements. Section 170.070 has been modified in the final rules to restate its terms more clearly and to incorporate the barge exemption from the old regulations. Similar revisions have been made in §§ 170.105 and 170.160.

§ 170.075(a)(3) One commenter suggested that, in lieu of curves of form, tables of those values should be allowed. This comment has not been adopted. Plotting curves is a more effective way to verify the accuracy of calculations of hydrostatic data. Use of curves rather than tables is the preferred practice of naval architects in vessel design.

§ 170.100 This section has been revised to include the current addresses of the 8th and 12th District Merchant Marine Technical Offices. Additionally, the address for the 9th District technical office has been deleted since it is being closed. Responsibility for the geographical area covered by the 9th Coast Guard District has recently been transferred to the 3rd District technical office.

§ 170.110 Thirteen comments were received concerning the requirement to prepare a vessel stability booklet, and concerning the information that must be included in the booklet.

Several commenters suggested that certain additional items of information be included in the booklet. The purpose of the regulation is to provide guidance as to the type if information needed to operate a vessel in compliance with stability regulations applicable to that vessel. Because the specific stability requirements to be applied vary depending on vessel type and operation, the information needed in a stability booklet will likewise vary according to vessel type and operation. For some vessel types, only minimal information is needed and preparation of a stability

booklet is unnecessary. Section 170.110 has been modified to take these differences into account and to include commenters' suggestions.

One commenter asked whether § 170.110 would require loading calculations for tank vessels of 300 feet or less in length. The requirements for loading calculations are in 46 CFR 31.10–32(b) and are not being incorporated into Subchapter S. Section 31.10–32(b) does not require loading calculations for tank vessels of 300 feet or less in length.

One commenter asked whether the stability booklet should be in English or metric units. The owner will have the option to select the system most suitable for the vessel's personnel.

One commenter suggested that provisions be added to recognize the use of on board computers in lieu of a stability booklet. Although the final regulations require a stability booklet, they do not preclude use of computers as long as the booklet is also available. The booklet is reviewed and approved as a part of the plan review process. Its information provides guidance to the master in a readily usable form and serves as a reliable source of information in the event of computer malfunction which could easily occur in an emergency or casualty situation. A master could be severely hampered in assessing a vessel's stability in such a situation if no backup to the computer were available.

§ 170.120 One commenter suggested adding a requirement to post the stability letter on the vessel. This is an operations requirement and is being placed in the operations sections of each vessel subchapter. This requirement is listed in Table III below.

§ 170.160 One commenter asked why Mobile Offshore Drilling Units (MODU's) were exempt for the Weather Criterion. The reason for this is that a separate wind heel criterion is applied to MODU's in § 174.045.

§ 170.173 One commenter objected to applying the criterion in this section to offshore supply vessels (OSV's) and the other vessels of unusual proportion and form. As noted previously, Subchapter S does not include requirements for OSV's and § 170.173 excludes tugs and tows from its applicability. Other vessels of unusual proportion and form, i.e. certain small passenger vessels, will have to meet § 170.173 unless equivalent treatment is allowed under § 170.010. The basis of the commenter's objection was that § 170.173 requires righting arms to be calculated by the "trimming free" method rather than by the "constant trim" method. The requirement to use the trimming free method with the criterion in § 170.173 is derived from IMO Resolution A.469(XII). It is the preferred method since it reflects the actual response of the vessel to heel.

170.175 Two commenters requested clarification of the stability test requirements applicable to sister vessels. As stated in paragraph (c) of this section, the Coast Guard may either accept a deadweight survey on a vessel in lieu of the stability test, or not require the test at all, if provided with approved results of a stability test of a sister vessel. Guidelines for dispensing with a stability test are contained in Coast Guard Navigation and Vessel Inspection Circular (NVC) 14–81. Since these guidelines are only voluntary, they are not being incorporated into Subchapter S. They are available for inspection and copying at the address listed in paragraph 3 under **ADDRESSES.**

§ 170.185 One commenter suggested that paragraph (c) of this section be modified to allow certain items to be on board during a stability test, if noted. The accuracy of a stability test is improved if none of those items are on board. However, §170.190 does permit the Coast Guard representative to allow deviations from this requirement if the items can be accounted for and the accuracy of the test will not be affected.

§175. 235 One commenter thought that the wording of this section precluded the use of heavy liquids as permanent ballast. To avoid confusion, "solid ballast" has been relabelled "fixed ballast" in the final rules.

Part 170, Subpart H One commenter recommended that standards for port lights be included in this subpart. These requirements are included in Subpart F of Part 171. The load line regulations also include requirements in § 42.15–65 and § 45.139 of Title 46, CFR.

Eight comments were received concerning the watertight door requirements. Many of the comments indicate a misunderstanding of the applicability of Subpart H. The watertight door requirements apply only to vessels with watertight doors in bulkheads that have been made watertight to comply with the flooding or damage stability regulations in Subchapter S. If a bulkhead is not required to be watertight, any class door, or no door at all, may be installed in it. As an example, the requirements in § 170.275 apply only to a door between cargo spaces and only if that door is in a bulkhead which is required to be watertight to comply with the regulations in Subchapter S.

§ 170.250(b)(1) One commenter suggested that plate doors secured by bolts be allowed as watertight doors. This suggestion has not been adopted. This subsection prohibits these doors because they cannot maintain the watertight integrity of the bulkhead in the event of damage.

§ 170.255(b) This paragraph permits the installation of Class 1 watertight doors on vessels of less than 150 gross tons on inland routes and routes that do not exceed 20 miles from shore. The requirement in the NPRM, which was derived from the old regulation in § 73.35–5(b), only permitted the installation of these doors on vessels of between 100 and 150 gross tons. There is no good reason however, to prohibit vessels of less than 100 gross tons from having Class 1 watertight doors when on these routes, and there was no such prohibition in the old stability regulations for passenger vessels under 100 gross tons. Accordingly, § 170.255(b) has been changed in the final rules to apply to all vessels of less than 150 gross tons.

§ 170.255(c) Four commenters pointed out that the Coast Guard has, by policy, permitted Class 1 doors in certain locations on crew boats operating in the offshore oil industry. This policy statement was inadvertently omitted from the NPRM and is included in the final rule.

§ 170.270 One commenter asked if a "quick action closing device" was different from "catches workable from either side". The words "Catches workable from either side" were included in the old regulation (§ 73.35–20(a)) to provide an example of a "quick action closing device." The example was considered to be unnecessary and has been deleted from the NPRM and the final rules.

§ 170.285 and § 170.290 Six comments were received concerning these two sections. The commenters expressed confusion over the way free surface should be handled for intact and damage stability calculations. In order to clarify the proposed requirements, the two sections have been rewritten and retitled accordingly.

PART 171—SPECIAL RULES PERTAINING TO VESSELS CARRYING PASSENGERS

§ 171.015(b) This paragraph requires a margin line adjustment for vessels with insufficient sheer. One commenter expressed the opinion that the adjustment was not necessary and that § 171.015(b) should be deleted. The commenter's suggestion has not been adopted. The purpose of the regulation is to provide reserve buoyancy for vessels that are designed with no sheer or only minimal sheer. Reserve buoyancy is needed to aid vessels in

surviving after sustaining collision or grounding damage.

§ 171.035 (d) and (e) Two commenters thought that the requirement for small sailing vessels to remain afloat when flooded or capsized was overly restrictive. Part 171 does not include a similar requirement for mechanically propelled vessels in the same service and, accordingly, § 171.035(d) and the companion requirement in § 171.035(e) for hand holds have been deleted from the final rules. Analysis of these requirements failed to demonstrate a need for retaining them. The remaining requirements in § 171.035 set out sufficient intact stability standards for sailing vessels that must comply with that section.

§ 171.070 and § 170.055 One commenter thought that the wording of §171.070 would prohibit the addition of transverse watertight bulkheads that did not meet the spacing requirements for main transverse watertight bulkheads. This prohibition was not intended. A definition of "main transverse watertight bulkhead" has been added in § 170.055. The purpose of the definition is to make it clear that transverse watertight bulkheads are allowed as long as the main transverse watertight bulkheads required by § 171.070 are also provided.

PART 172—SPECIAL RULES PERTAINING TO BULK CARGOES

Part 172, Subpart B—Bulk Grain The National Cargo Bureau (NCB) made numerous recommendations for revisions to this subpart to reflect current practice. In evaluating these recommendations, several conflicts were noted between the existing regulations, as written, and the actual application of these regulations. In lieu of attempting to resolve these discrepancies as part of this rulemaking, the portions of the proposal relating to the carriage of grain have been removed and the existing regulations left in place. The existing regulations will be revised and transferred to Subchapter S in a separate rulemaking. In preparing those regulations, NCB's comments will be taken into consideration.

PART 173—SPECIAL RULES PERTAINING TO VESSEL USE

§ 173.025 One commenter asked for more explanation on how to develop the heeling moment curves due to hook load and counterballasting. A paragraph has been added to define the shapes of these curves. As noted in Table I below, the additicnal information is also included in Coast Guard Merchant Marine Technical (MMT) Note 3–69.

Part 173, Subpart E—Two commenters questioned why the standards for tugboats and towboats in Part 174 were not included in this subpart. The reason is that Part 173 includes standards which apply dependent upon the vessel's use, in this case towing. Any vessel that tows must comply with the requirements in Subpart E of Part 173. The standards in Subpart E of Part 174 apply only to tugboats and towboats. Other vessels that tow will not have to comply with Subpart E of Part 174.

§ 173.095 One commenter expressed an opinion that it is excessive to require that downflooding be assumed to occur through any opening that does not close automatically. The purpose of this section is to minimize a vessel's potential for capsizing when maneuvering to maintain control of its tow. During this maneuvering, the vessel could heel over suddenly resulting in downflooding through openings such as watertight doors, which may be latched open by the vessel's crew. Accordingly, these openings are considered to be points of downflooding.

One commenter thought that this section should not be applied to a vessel that does not have rigid means of fixing the tow rope to the vessel. This comment has not been adopted. As stated above, the purpose of this section is to minimize a vessel's potential for capsizing when maneuvering to maintain control of its tow. It it could be proven that a particular vessel was not susceptible to this danger, special consideration could be requested under the equivalency provisions in § 170.010.

PART 174—SPECIAL RULES PERTAINING TO SPECIFIC VESSEL TYPES

Subpart F, Part 174 Specific rules have been added for Ocean Thermal Energy Conversion plantships and floating facilities. These rules were published in the **Federal Register** of April 11, 1983 (48 FR 15469). They have been renumbered and transferred to Subpart F of Part 174 in these final regulations.

Tables

The tables below include certain abbreviations of referenced materials:

NVC—Navigation and Vessel Inspection Circular
MSM—Marine Safety Manual
MMTN—Merchant Marine Technical Note
IMO Res.—International Maritime Organization Resolution

The following table shows how these regulations relate to regulations previously in the CFR. References are to regulations in Title 46 unless otherwise noted.

TABLE I

New regulation	Old regulation	Other old regulations containing the same or similar requirement
170.001		31.10-30(a), 73.01-1, 74.01, 107.01, 107.111, 93.01-1, 167.20-5 167.20-20, 168.05-5, 176.01, 179.01, 191.01, 153.806(a), 153.15, 153.16, 154.1, 73.90, 74.90 93.07-90 33 CFR 157.01.
170.005	30.01-10	179.15-1, 91.45.
170.010	108.105	30.15-1, 175.15, 90.15, 70.15, 188.15, 108.335(c); 153.10, 154.8 33 CFR 157.07.
170.015	New	
170.050:		
(a)	New	
(b)		30.10-17, 70.10-9, 90.10-7, 151.03-15, 153.1, 175.10-5, 107.111, 167.05-10, 188.10-19.
(c)	178.05-15	
(d)	90.05-10(b)	30.10-33, 30.10-6(b), 151.03-29, 70.05-10(b), 70.10-17 175.10-11, 188.10-31, 93.20-1.
(e)	90.10-19	30.10-41, 70.10-23, 151.03-33 175.10-17, 188.10-39.
(f)	175.10-25	30.10-45, 70.10-31, 151.03-39, 90.10-25, 188.10-51.
(g)	90.10-27	30.10-47, 70.10-33, 151.03-41, 175.10-26, 188.10-55.
(h)	33 CFR 157.03	
(i)	178.05-17	
(j)	178.05-19	
(k)	175.10-33	70.10-39, 90.10-33, 151.03-45, 188.10-61, 30.10-61.
170.055:		
(a)	175.10-38	
(b)	90.10-2	30.10-65, 70.10-2, 151.03-7, 175.10-23, 188.10-5.
(c)	33CFR 157.03	73.05-4, 153.4, 191.05-4.
(d)	178.05-1	73.05-5, 191.05-5.
(e)	108.301(c)	
(f)	108.301(d)	
(g)	73.05-7	191.05-7.
(h)		42.13-5, 73.05-3, 153.2, 154.3, 175.10-19, 191.05-3, 33 CFR 157.03.
(i)	33 CFR 157.03	30.10-38, 31.10-30(h)(1).
(j)	New	
(k)	73.05-8	33 CFR 157.03, 154.3, 153.30(a), 191.05-8.
(l)	175.10-36	70.10-42.
(m)	New	
(n)	30.10-69	
(o)	30.10.65	
(p)	30.10-67	
(q)		70.10-45, 90.10-37, 151.03-55.
(r)	(New)	
170.070	107.301	31.10-5(a), 71.65-1, 189.55-1, 91.55-1, 167.20-25, 168.05-5, 179.01-1.

TABLE I—Continued

New regulation	Old regulation	Other old regulations containing the same or similar requirement
170.075:		
(a)(1)	107.305(b)	71.65–5(a)(2), 167.20–25(a)(1) and (c), 177.05–1(a)(4), 189.55–5(a), 91.55–5(a)(2), 166.05–5, 31.10–5(a) 33 CFR 157.24(b), 154.4, 153.8.
(a)(2)	107.305(q)	71.65–5(c)(1), 167.20–25(a)(3) and (c), 177.05–3(a)(1), 189.55–5(c)(1), 91.55–5(c)(1), 168.05–5, 31.10–5(a) 33 CFR 157.24(b), 154.4, 153.8.
(a)(3)	107.305(r)	71.65–5(c)(2), 167.20–25(a)(4) and (c), 177.05–3(a)(2), 189.55–5(c)(2), 91.55–5(c)(2), 168.05–5, 31.10–5(a) 33 CFR 157.24(b), 154.4, 153.8.
(a)(4)	107.305(s)	71.65–5(c)(5), 167.20–25(b) and (c), 177.05–3(a)(3), 189.55–5(c)(3), 91.55–5(c)(3), 168.05–5, 31.10–5(a) 33 CFR 157.24(b), 154.4, 153.8.
(a)(5)	107.305(t)	71.65–5(c)(6), 167.20–25(b) and (c), 189.55–5(c)(4), 91.55–5(c)(4), 168.05–5, 31.10–5(a), 33 CFR 157.24(b), 154.4, 153.8.
(a)(6)	107.305(u)	71.65–5(c)(7), 167.20–25(b) and (c), 189.55–5(c)(5), 91.55–5(c)(5), 168.05–5, 31.10–5(a), 33 CFR 157.24(b), 154.4, 153.8.
(b)	177.05–1	
170.080	107.305(k)	177.05–3(b), 191.30–1(b), 168.05–5, 31.10–5(b), 74.20–1(b), 93.10–1(a).
170.085	108.337	93.05–5(a) and (b), 74.05–5(a) and (b), 191.15–5(a), 153.806, 154.205(a), 167.20–25(b), 168.05–5, 31.10–30(b)(2).
170.090		177.05–3(b), (d), and (e), 71.65–5(c)(3) and (4), 167.20–25(b), 168.05–5, 31.10–5(a), 107.305(u–1), 191.20–15(b)(8), 108.329, 108.313, 91.55–5(c), 33 CFR 157.24(b).
170.093	New	
170.095	MMTN 3–69	
170.100	107.317	71.65–15, 177.05–1(a), 177.05–3(a) 189.55–15, 91.55–20, 167.20–25(c), 168.05–5.
170.105	179.01–1	

TABLE I—Continued

New regulation	Old regulation	Other old regulations containing the same or similar requirement
170.110:		
(a)	109.121(a)	74.20–1(a), 74.20–15(a) and (b), 93.10–1(a), 154.1809(a), 153.806(b), 191.30–1(a), 154.205(a), 153.806(a), 168.05–5, 31.10–30(b)(4), 167.20–20, 191.30–15.
(b)	109.121(b)	74.20–1(b), 93.10–1(a), 191.30–1(b), 154.205(a), 31.10–30(b)(4), 168.05–5, 167.20–20, 153.806(a).
(c) and (d)	109.121(d)	74.20–1(a), 74.20–15(a), 154.1809(b), 191.30–15(a), 154.205(a), 168.05–5, 31.10–30(b)(4), 167.20–20, 153.806(a), 74.20–5, 93.10–1(a) and (b), 154.1809(c), 191.30–1(a), 153.806(b), 74.20–10, 191.30–10.
(e)	New	
170.120:		
(a)	74.25–1	31.10–30(b)(5), 179.20(a) and (b), 191.35–1, 191.35–5, 154.205(a), 31.10–30(b)(4), 168.05–5, 153.806(a), 167.20–20, 93.15–1, 93.15–5.
(b)	New	
170.125	MMTN 3–69	
170.135:		
(a)	109.121(d)(6)	
(b)	109.121(d)(6)	
170.130:		
(a)	74.12–11	
(b)	74.12–7	
(c)	74.12–3	
170.160		31.10–30(a)(1), 74.01–1, 179.01–1, 93.01–1, 93.07–1, 153.806, 154.205(a), 167.20–20, 168.05–5, 191.20–5, MMTN 3–69.
170.170:		
(a)	74.10–5	31.10–30(b)(3), 93.07–10, 153.806(a), 154.205(a), 167.20–20, 168.05–5, 179.10–5, 191.20–5.
(b)	74.10–5	31.10–30(b)(3), 93.07–10, 153.806(a) 154.205(a), 167.20–20, 168.05–5, 179.10–5, 191.20–5.
(c)	MMTN 3–68	
(d)	74.10–11	31.10–30(b)(3), 93.07–15, 153.806(a), 167.20–20, 168.05–5, 179.10–5, 191.20–10.
170.173	New	NVC 3–73, IMO Res. A469(XII).
170.174		93.05–1(a), 74.05–1(a), 167.20–20, 31.10–30(b)(1), 168.05–5, 179.05–1, 191.15–1, 154.205(a), 153.806, 93.01–1, 108.335.

TABLE I—Continued

New regulation	Old regulation	Other old regulations containing the same or similar requirement
170.175:		
(a)	108.335(a)	93.05–1(a), 74.05–1(a), 191.15–1(a), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(1), 179.10–3.
(b)	108.335(b)	93.05–1(a), 74.05–1(a), 191.15–1(a), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(1), 179.10–3.
(c)	108.338(c)	93.05–1(b), 74.05–1(b), 191.15–1(b), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(1), 179.10–3.
(d)	93.05–1	
170.180	74.05–(a)&(b)	93.05–5(a) and (b), 108.337, 153.806, 191.15–5(a), 154.205(a), 168.05–5, 167.20–25(a), 31.10–30(b)(1), 179.10–3, 179.10–5, 189.55–5(c).
170.185:		
(a)	108.339(a)	93.05–5(c)(3), 74.05–5(c)(3), 191.15–5(b)(3), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(2), 179.10–3, 179.10–5.
(b)	108.339(b)	93.05–5(c)(2), 74.05–5(c)(2), 191.15–5(b)(2), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(2), 179.10–3, 179.10–5.
(c)	108.339(c)	93.05–5(c)(4), 74.05–5(c)(4), 191.15(b)(4), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(2), 179.10–3, 179.10–5.
(d)	108.339(d)	93.05–5(c)(5), 74.05–5(c)(5), 191.15–5(b)(5), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(2), 179.10–3.
(e)	108.339(e)	93.05–5(c)(5), 74.05–5(c)(5), 191.15–5(b)(5), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(2), 179.10–3.
(f)	108.339(f)	
(g)	108.339(g)	
170.190	108.341	93.05–5(c)(1), 74.05–5(c)(1), 191.15–5(b)(1), 153.806, 154.205(a), 167.20–20, 168.05–5, 31.10–30(b)(2), 179.10–3, 179.10–5.
170.200		31.10–30(c) through (f).
170.235	74.15–5	168.05–5, 191.25–5, 93.13–5, 109.561 153.806(a) 154.205(a), 167.20–30.
170.245	MMTN 4–67	178.10–1
170.248	New	

TABLE I—Continued

New regulation	Old regulation	Other old regulations containing the same or similar requirement
170.250:		
(a)	73.35-1(a)	167.20-5, 168.05-5, 191.10-25(b)
(b)	73.35-1(a)	167.20-5, 168.05-5, 191.10-25(b)
(c)	73.35-1(b)	167.20-5, 168.05-5.
(d)	73.35-17	
170.255:		
(a)	73.35-5(a)	167.20-5, 168.05-5, 191.10-25(c).
(b)	73.35-5(b)	167.20-5, 168.05-5.
(c)	New	
170.260:		
(a)	73.35-10(a)	167.20-5, 168.05-5, 191.10-25(d)(1).
(b)	73.35-10(b), 73.35-10(c).	167.20-5, 168.05-5, 191.10-25(d)(2).
(c)	73.35-10(b)	167.20-5, 168.05-5, 191.10-25(d)(2).
(d)	73.35-10(b)	167.20-5, 168.05-5, 191.10-25(d)(2).
170.265:		
(a)	73.35-15(a)	167.20-5, 168.05-5.
(b)	73.35-15(b)	167.20-5, 168.05-5, 191.10-25(e).
(c)	73.35-15(c)	167.20-5, 168.05-5, 191.10-25(e).
(d)	73.35-15(d)	167.20-5, 168.05-5.
170.270:		
(a)	73.35-20(a)	167.20-5, 168.05-5
(b)	73.35-30(b)	167.20-5, 168.05-5, 191.10-25(f)(2).
(c)	73.35-30(c)	167.20-5, 168.05-5, 191.10-25(f)(3).
(d)	73.35-25(a)	167.20-5, 168.05-5, 191.10-25(f)(3).
170.275:		
(a)	73.35-17(a)	167.20-5, 168.05-5.
(b)	73.35-17(b)	167.20-5, 168.05-5.
(c)	73.35-17(a)	167.20-5, 168.05-5.
170.285	154.225	31.10-30(b)(3), 151.10-15(b), 153.31, 74.10-1, 167.20-20, 168.05-5, 191.20-1, 93.07-5, 93.20-05(c).
170.290	154.225	31.10(b)(3), 151.10-15(b), 153.31, 74.10-1, 167.20-20, 168.05-5, 191.20-1, 93.07-5, 33 CFR 157, App. B, paragraphs 4 (d) & (e), 93.20-05(c).
170.295	MMTN 2-69	
170.001	New	
171.010:		
(a)	178.05-9	
(b)	73.05-2	191.05-2
(c)	New	
(d)		70.10-15, 175.10-9
(e)	73.05-12	
(f)	178.05-7	
(g)	70.05-10	
(h)	73.05-10	
(i)	178.05-13	
(j)	73.05-11	
(k)	New	
(l)	70.10-43	
(m)	New	
(n)	178.05-11	
171.015:		
(a)	73.05-6(a)	167.20-5, 168.05-5, 191.05-6(b).
(b)	73.05-6(b)	167.20-5, 168.05-5, 191.05-6(a).
(c)	73.05-6(a)	167.20-5, 168.05-5, 191.05-6(a).
(d)	73.05-6(a)	167.20-5, 168.05-5, 191.05-6(a).
171.017	178.10-1	
171.020		175.05-5(a), 178.01-1, 178.10-1, 178.10-5, 178.10-10, 179.01-1.
171.030:		
(a)		179.05, 179.10-3(a).
(b)		179.10-1(a), 179.10-1(b), 178.10-1(c).
(c)		179.10-1(d), 179.10-1(e).
(d)		179.10-1(f), 179.10-1(g).
(e)	179.10-1(f)-(g)	
(f)	179.10-1(f)	
(g)	179.10-1(h)	
(h)	179.10-1(f)	
171.035	MMTN 3-68	
171.040:		
(a)		178.10-1(a), 178.10-1(b), 178.20-1(b).
(b)		178.10-5(a), 178.10-5(b), 178.10-10.
(c)	178.25-1(b)	
(d)	178.15-5	
171.043:		
(a)	178.20-1(a)	
(b)	178.20-1(a)	
171.045		175.05-5(a) & (b), 178.01-1, 178.10-1, 178.20-5, 179.01-1, 70.05-1(a), 73.01-1, 74.01-1, 73.10-1
171.050	74.10-10	179.10-5.
171.055	MMTN 3-68	
171.057	MMTN 1-69	
171.060:		
(a)		73.10-1(a), 73.10-2, 73.12-1, 74.10-2.
(b)		178.20-5, 73.15 (title).
(c)		73.20-1(a), 178.10-1(a).
(d)	73.20-1(a)	178.15-15.
171.065:		
(a)		73.10-10, 73.10-15, 73.10-20.
(b)	73.10-23	73.10-15, 73.10-20.
(c)	73.10-30(a)	
(d)	73.10-35	
(e)	73.10-55	
(f)	73.10-60	
(g)	73.10-60	
(h)	73.10-60	
(i)	New	
(j)	New	
171.066:		
(a)		73.10-5(a), 73.10-5(b)(1), 73.10-5(c)(1), 73.10-30(b).
(b)	73.10-5(b)(2)	
(c)	73.10-5(d)	
(d)	73.10-5(e)	
171.067:		
(a)	New	
(b)	73.10-40	
(c)	73.10-45	
(d)	73.10-45	
(e)	73.10-55	
(f)	73.10-50	
171.068:		
(a)		73.10-65(a), 73.10-65(b)(1) and (2) 73.10-1(b).
(b)		73.10-65(b)(2)(i).
(c)		73.10-65(b)(2)(ii).
171.070:		
(a)	73.15-5(b)-(f)	
(b)	73.15-10(a)-(c)	
(c)	73.15-10(a)	
(d)	73.15-10(a)	
(e)	73.15-15, New	178.20-5(b)
(f)	73.15-15	178.20-5(b)
171.072	73.15-1	
171.073:		
(a)	73.15-20	
(b)		73.15-25(a) and (b).
(c)	73.15-30	
171.075:		
(a)	73.12-5	
(b)	73.12-7	
(c)	73.12-3	
171.080:		
(a)		74.10-15(a) and (b), 179.10-5.
(b)	74.10-15(c)(4)	179.10-5.
(c)	74.10-15(c)(3)	179.10-5.
(d)	74.10-15(c)(7)	179.10-5.
(e)	74.10-15(c)(5)	179.10-5.
171.082:		
(a)	74.10-2	74.12-1, 74.12-5.
(b)	74.12-7	
(c)	74.12-3	
(d)	74.12-9	
171.085:		
(a)	New	
(b)	73.20-1(a)	
(c)	73.20-1(a)	
(d)	73.20-1(a)	
(e)	73.20-1(b)	
(f)	73.20-1(b)	
(g)	73.20-1(c)	73.30-15(a)(1).
(h)	178.15-3	
(i)	178.15-3	
(j)	178.15-1	
171.090		73.20-10, 178.15-5
171.095	73.20-5	
171.100:		
(a)	73.20-15	
(b)	73.30-25(b)	
(c)	73.30-25(b)	
(d)	73.30-25(b)	
171.105:		
(a)	73.25-1	
(b)	73.25-5(b)	
(c)	73.25-5(c)	
(d)	73.25-5(d)	
(e)	73.25-5(e)	
(f)	73.25-5(e)	
(g)	73.25-5(f)	
(h)	73.25-5(g)	
171.106	73.25-10	
171.108	73.25-15	
171.109	73.25-20	
171.110	New	
171.111:		
(a)	73.30-1	
(b)	73.30-35	
(c)	73.30-1	
(d)	73.30-10	
(e)	73.30-5	
(f)	73.30-40	
(g)	73.30-40	
(h)	73.30-15(a)(2)	
171.112:		
(a)	73.30-25(a)	
(b)	73.30-25(b)	
171.113:		
(a)	New	
(b)	73.30-30(b)	
(c)	73.30-30(a)	
171.114:		
(a)	178.25-1(c)	
(b)	178.25-1(d)	
(c)	178.25-1(b)	
171.115	New	
171.116:		
(a)	73.40-5(a)	
(b)	73.40-5(b)(1)	
(c)	73.40-5(b)(1)	
(d)	73.40-5(b)(3)	
(e)	73.40-5(b)(4)	
(f)		73.40-5(b)(2), 73.40-5(b)(5).
171.117:		
(a)	73.40-5(c)(1)	
(b)	73.40-5(c)(1)	
(c)	73.40-5(c)(1)	
(d)	73.40-5(c)(2)	
171.118:		
(a)	73.40-10	
(b)	73.40-15	
(c)	73.40-15	
171.119:		
(a)		178.40-1(b) and (c).
(b)	178.40-1(d)	
(c)	178.40-1(e)	
(d)	178.40-1(e)	
(e)	178.40-1(d)	
(f)	178.40-1(d)	
171.120	New	
171.122:		
(a)	New	
(b)	73.45-5(a)	
(c)	73.45-1(a)	
(d)	73.45-1(b)	
(e)	73.45-1(b)	

TABLE I—Continued

New regulation	Old regulation	Other old regulations containing the same or similar requirement
(f)	73.45-5(b)	
(g)	73.45-10(b)	
171.124:		
(a)		178.35-1(a), (b), and (c).
(b)	178.35-1(d)	
(c)	178.35-1(e)	
(d)	178.35-1(f)	
(e)	178.35-1(f)(1)	
171.130	New	
171.135	73.45-5(c)	
171.140	178.30-1	
171.145:		
(a)	178.30-3(a)	
(b)	178.30-3(b)	
(c)	178.30-3(b)	
(d)	178.30-3(c)	
(e)	178.30-3(d)	
(f)	178.30-3(d)	
171.150:		
(a)	178.30-5(a)	
(b)		178.30-5(b), (c), and (d).
(c)	178.30-5(b)	
(d)	178.30-5(b)	
171.155	178.30-7	
172.005		93.20-01, 30.25-1-151.01-10(b), 153.5, 154.2, 153.806(a), 154.205(a); 33 CFR 157.08.
172.047	32.63-1	
172.050:		
(a)	32.63-5	
(b)	32.63-15(b)	
(c)	32.63-15(b)	
(d)	32.63-15(b)	
(e)	32.63-15, New	
(f)	New	
172.060		33 CFR 157.01, 157.08, 157.21
172.065:		
(a)	33 CFR 157.03(a)	
(b)	33 CFR 157.21	
(c)		33 CFR 157—Appendix B—para. (2).
(d)		33 CFR 157—Appendix B—para. (3)(a), para. (3)(c), and para. (3)(d).
(e)		33 CFR 157—Appendix B—para. (3)(b).
(f)		33 CFR 157—Appendix B—para. (4)(a)-(b).
(g)(1)	33 CFR 157.21(a)	
(g)(2)	33 CFR 157.21(b)	
(g)(3)	33 CFR 157.21(c)	
(g)(4)		33 CFR 157—Appendix B—para. (3)(e).
(h)		33 CFR 157—Appendix B—para. (4)(c).
172.080	151.01-10	
172.085	New	
172.087	151.10-15(b)	
172.090:		
(a)	151.10-5(a)	
(b)	151.10-5(b)	
(c)	151.10-5(b)	
(d)	151.10-5(a)	
172.095	151.10-6	
172.100:		
(a)		151.10-10(a)(1).
(b)		151.10-10(a)(5).
(c)		151.10-10(a)(1).
172.103	New	
172.104:		
(a)		151.10-10(a)(2).
(b)		151.10-10(a)(2).
(c)		151.10-10(a)(3).
172.105:		
(a)(1)		151.10-10(b)(2).
(a)(2)		151.10-10(b)(1).
(a)(3)	New	
(b)		151.10-10(b)(3).

TABLE I—Continued

New regulation	Old regulation	Other old regulations containing the same or similar requirement
172.110:		
(a)	New	
(b)	New	
(c)		151.10-10(c)(1).
(d)		151.10-10(c)(1).
(e)		151.10-10(c)(2).
(f)		151.10-10(c)(2).
(g)		151.10-10(c)(2).
(h)		151.10-10(c)(2).
(i)		151.10-10(c)(2).
172.125	153.1	
172.127	153.2	
172.130:		
(a)		153.15, 153.16, 153.20 through 22.
(b)	153.5	
172.133:		
(a)	153.20	
(b)	153.21	
(c)	153.22	
(d)	153.32(c)	
172.135:		
(a)	153.32(a)	
(b)	153.32(a)	
172.140:		
(a)	153.30(b)	
(b)	153.30(b)	
(c)	153.30(c)	
172.150:		
(a)	153.34(b)	
(b)	153.34(a)	
(c)	153.34(c)	
(d)	153.34(f)	
(e)	153.34(e)	
(f)	153.34(d)	
(g)	153.34(g)	
(h)	153.34(h)	
172.155		154.1, 154.2.
172.160:		
(a)	154.3	
(b)	154.3	
172.165	154.205(b)	
172.170:		
(a)	154.210(a)	
(b)	154.210(b)	
172.175:		
(a)	154.215(a)	
(b)	154.215(b)	
(c)	154.215(c)	
(d)	154.215(d)	
(e)	154.215(e)	
(f)	154.215(e)	
172.180:		
(a)	154.220(a)	
(b)	154.220(b)	
172.185:		
(a)	154.225(d)	
(b)	154.225(c)	
(c)	154.225(e)	
172.195:		
(a)	154.230(b)	
(b)	154.230(a)	
(c)	154.230(c)	
(d)	154.230(h)	
(e)	154.230(e)	
(f)	154.230(d)	
(g)	154.230(g)	
(h)	154.230(h)	
172.205	154.230(f)	
173.001	New	
173.005	New	
173.007 through 173.025.	MMTN 3-69	
173.050	167.20-5	
173.055	167.20-5	
173.060	168.05-5	
173.070		191.01-1, 188.05-1.
173.075:		
(a)		191.10-1, 191.10-5, 191.10-10, 191.50-13.
(b)	191.10-15	
173.080		191.20-15(a), (b)(1)-(7), and (c).
173.085		
(a)	-	191.10-15(a), 191.10-20(e).
(b)	191.10-16	
(c)	191.10-17	

TABLE I—Continued

New regulation	Old regulation	Other old regulations containing the same or similar requirement
(d)	191.10-18	
(e)	191.10-19	
(f)		191.10-20(a)-(c) and (f).
(g)	191.10-20(g)	
(h)		191.10-20(b)(2).
(i)	191.10-30(b)	
(j)		191.10-30(c)(2).
(k)		191.10-30(c)(1).
(l)	191.10-30(d)	
(m)	191.10-35	
(n)		191.10-35(b)(2).
(o)	191.10-20(d)	
173.090	65-4-C MSM	
173.095	65-4-C MSM	
174.005		93.07-15, 107.01
174.010 through 174.020.	MMTN 3-69	
174.030	107.01	
174.035:		
(a)	107.111	
(b)	108.301	
174.040	108.303	
174.045:		
(a)	108.305(a)	
(b)	108.305(b)	
(c)	108.305(c)	
(d)	108.305(d)	
174.050	108.309	
174.055:		
(a)	108.311(a)	
(b)	108.311(b)	
(c)	108.311(c)	
174.065:		
(a)	108.315(a)	
(b)	108.315(b)	
174.070:		
(a)	108.317(a)	
(b)	108.317(b)	
174.075	108.319	
174.080:		
(a)	108.321(a)	
(b)	108.321(b)	
174.085:		
(a)	108.323(a)	
(b)	108.323(b)	
174.090	108.325	
174.100		108.114, 108.115
174.110	79.01-1	37.01-1, 99.01-1
174.115	79.05-5(a)	37.05-5(a), 99.05-5(a).
174.120	79.05-5(a)	37.05-5(a), 99.05-5(a).
174.125	79.05-5(a)-(b)	37.05-5(a)-(b), 99.05-5(a)-(b).
174.140	65-4-C MSM	
174.145	65-4-C MSM	
174.150	106.400(a)	
174.155	106.400(a)	
174.160	106.400(b)	
174.165	106.403	
174.170	106.405	

The following table lists rules that are being deleted because they are the same as other rules in other parts of Title 46, CFR.

TABLE II

Deleted rule	Rule repeated in—
73.35-20(b)	163.001-4(a) and (b).
73.35-20(c)(1)	163.001-5(b).
73.35-20(c)(2)	163.001-5(c)(1), 163.001-(5)(f), 163.001-5 (b)(4), 58.30-10.
73.35-20(c)(3)	163.001-5(b).
73.35-25(b)	163.001-5(d).
74.15-10	78.85-1.
93.13-10	97.75-1.

The following table shows where in Title 46, CFR, certain old stability rules

not contained in Subchapter S are being transferred:

TABLE III

Old rule	New location in CFR
73.35–20(d)	163.001–4.
73.40–5(b)(4)	76.16–1.
74.10–12	72.30–5.
74.25–1(a)	78.12–1.
93.15–1	97.11–1.
179.20–1	185.12–1.
191.25–10	196.18–1.
191.35–1	196.12–1.

The following Table lists old regulations in chronological order and the new regulations that correspond to them. References are to Title 46, CFR, unless otherwise noted.

TABLE IV

Old regulation	New regulation
31.10–30:	
(a)(1)	170.160, 170.001.
(a)(2)	170.001.
(b)(1)	170.175, 170.174.
(b)(2)	170.085, 170.185, 170.190.
(b)(3)	170.170.
(b)(4)	170.110, 170.120.
(b)(5)	170.120.
(c)	170.200.
(d)	170.200.
(e)	170.200.
(f)(1)	170.055(i).
(f)(2)	170.200.
32.63–1	172.047, 172.050.
32.63–15	172.047, 172.050.
37.05–5	174.110–174.125.
71.65–5	170.075, 170.090.
73.01–1	170.001, 171.045.
73.05–1	Deleted—unnecessary.
73.05–2	171.010(b).
73.05–3	170.055(h)(1).
73.05–4	170.055(c).
73.05–5	170.055(d).
73.05–6	171.015.
73.05–7	171.055(g).
73.05–8	170.055(k).
73.05–9	Deleted—unnecessary.
73.05–10	171.010(h).
73.05–11	171.010(j).
73.05–12	171.010(e).
73.10–1:	
(a)	171.045, 171.060.
(b)	171.068.
73.10–2	171.060.
73.10–3	Deleted—unnecessary.
73.10–5	171.066.
73.10–10	171.065(a).
73.10–15	171.065 (a) and (b).
73.10–20	171.065 (a) and (b).
73.10–23	171.065(b).
73.10–25	171.015(d).
73.10–30:	
(a)	171.065(c).
(b)	171.066(a).
73.10–35	171.065(d).
73.10–40	171.067(b).
73.10–45	171.067 (b) and (c).
73.10–50	171.067(f).
73.10–55	171.065(e), 171.067(e).
73.10–60	171.065(f).
73.10–65	171.068.
73.12–1	171.060.
73.12–3	171.075(c).
73.12–5	171.075(a).
73.12–7	171.075(b), 170.015.
73.12–9	Deleted—unnecessary.
73.15–1	171.072.
73.15–5:	
(a)	Deleted—unnecessary.
(b)–(f)	171.070(a).
73.15–10	171.070(b)–(d).
73.15–15	171.070(e).
73.15–20	171.073(a).
73.15–25	171.073(b).
73.15–30	171.073(c).
73.20–1	171.085.
73.20–5	171.095.
73.20–10	171.090.
73.20–15	171.100(a).
73.25–1	171.105(a).
73.25–5:	
(a)	Deleted—unnecessary.
(b)	171.105(b).
(c)	171.105(c).
(d)	171.105(d).
(e)	171.105 (e) and (f).
(f)	171.105(g).
(g)	171.105(h).
73.25–10	171.106.
73.25–15	171.108.
73.25–20	171.109.
73.30–1	171.111(c).
73.30–5	171.111(o).
73.30–10	171.111(d).
73.30–15	171.111(h), 171.085(g).
73.30–20	Deleted—unnecessary.
73.30–25:	
(a)	171.112(a).
(b)	171.112(b).
73.30–30	171.113 (b) and (c).
73.30–35	171.111(b).
73.30–40	171.111 (f) and (g).
73.35–1	170.250.
73.35–5	170.255.
73.35–10	170.260.
73.35–15	170.265.
73.35–17	170.275.
73.35–20(a)	170.270(a).
73.35–20(b)–(c)	Deleted—repetitious (see Table II).
73.35–25(a)	170.270(d).
73.35–25(b)	Deleted—repetitious (see Tables II and III).
73.35–30(a)	Deleted—unnecessary.
73.35–30 (b) and (c)	170.270.
73.40–1	Deleted—unnecessary.
73.40–5:	
(a) and (b)	171.116.
(c)	171.117.
73.40–10	171.118(a).
73.40–15	171.118 (b) and (c).
73.40–20	Deleted—unnecessary.
73.45–1	171.122(c)–(e).
73.45–5:	
(a)	171.122(b).
(b)	171.122(f).
(c)	171.135.
73.45–10	171.122(g).
73.90	170.001(b).
74.01–1	170.001, 171.045.
74.05–1	170.175.
74.05–5:	
(a) and (b)	170.180, 170.085.
(c)	170.185, 170.190.
74.10–1	170.020.
74.10–2	171.060.
74.10–5	170.170.
74.10–10	171.050.
74.10–11	170.170(d).
74.10–15:	
(a)	171.080(a).
(b)(1)	171.080(a).
(b)(2)	Deleted—unnecessary.
(c)(1)	Deleted—unnecessary.
(c)(2)	Deleted—unnecessary.
(c)(3)	171.080(c).
(c)(4)	171.080(b).
(c)(5)	171.080(e).
(c)(6)	171.080(d).
(c)(7)	171.080(d).
(c)(8)	171.080(d).
(c)(9)	171.080(d).
(d)(1)	Deleted—unnecessary.
(d)(2)	Deleted—unnecessary.
74.10–20	Deleted—unnecessary.
74.12–1	171.060.
74.12–3	171.082(c).
74.12–5	171.082(a).
74.12–7	171.082(b).
74.12–9	171.082(d).
74.12–11	170.135(a).
74.15–1	Deleted—unnecessary.
74.15–5	170.235.
74.20–1	170.110.
74.20–5	170.110.
74.20–10	170.110.
74.20–15	170.110.
74.25–1	170.120.
74.90–1	170.001(b).
79.05–5	174.110–174.125.
91.55–5(c)	170.075.
93.01–1	170.001.
93.05–1	170.175.
93.05–5	170.160, 170.185.
93.07–1	170.160.
93.07–5	170.020.
93.07.10	170.170.
93.07–15	170.170.
93.07–90	170.001(b).
93.10–1	170.110.
93.13–1	Deleted—unnecessary.
93.13–5	170.235.
93.15–5	170.120.
99.05–5	174.110–174.125.
106.400	174.150, 174.155, 174.160.
106.403	174.165.
106.405	174.170.
107.305	170.075, 170.090.
108.114	174.100.
108.115	174.100.
108.301	174.035(b), 170.055(c)–(d).
108.303	174.040.
108.305	174.045.
108.309	174.050.
108.311	174.055.
108.313	170.090.
108.315	174.065.
108.317	174.070.
108.319	174.075.
108.321	174.080.
108.323	174.085.
108.325	174.090.
108.329	170.090.
108.335	170.174, 170.175.
108.337	170.180.
108.339	170.185.
108.341	170.190.
108.343	170.005.
109.121	170.110, 170.130.
109.561	170.235.
151.10–5	172.090.
151.10–6	172.095.
151.10–10:	
(a)	172.100, 172.104.
(b)	172.105.
(c)	172.110.
151.10–15:	
(a)	Deleted—unnecessary.
(b)	172.087.
153.20	172.130, 172.133(a).
153.21	172.130, 172.133(b).
153.22	172.130, 172.133(c).
153.30	170.055(k), 172.140.
153.31	170.285, 170.290.
153.32(a)	172.135.
153.32(b)	Deleted—unnecessary.
153.32(c)	172.133(d).
153.34	172.150.
153.35	Deleted—unnecessary.
153.806(a)	170.001, 170.085, 170.110, 170.120, 170.160, 170.170, 170.175, 170.180, 170.185, 170.235, 172.005, 172.015, 172.030
153.806(b)	170.110.
154.200	170.020.
154.205(a)	170.001, 170.085, 170.110, 170.120, 170.160, 170.170, 170.175, 170.180, 170.185, 170.235, 172.005, 172.015, 172.030.
154.205(b)	172.165.
154.210	172.170.
154.215	172.175.
154.220	172.180.
154.225:	
(a) and (b)	170.285.
(c)–(e)	172.185.
154.230	172.195.
154.1809	170.110.
167.20–5	173.050, 173.055.
167.20–20	170.110, 170.120, 170.170, 170.160, 170.174, 170.175, 170.185, 170.190.
167.20–25(a)	170.160.
167.20–25 (b) and (c).	170.070, 170.075, 170.080, 170.085, 170.090, 170.100.
167.20–30	170.235.
167.20–35	Deleted—unnecessary.

TABLE IV—Continued

Old regulation	New regulation
168.05-5	173.060, 170.070, 170.075, 170.080, 170.085, 170.090, 170.100, 170.110, 170.120, 170.160, 170.170, 170.174, 170.175, 170.180, 170.185, 170.190, 170.235, 170.250, 170.255, 170.260, 170.265, 170.270, 170.285, 170.290.
175.05-5	171.020, 171.045.
177.05-3	170.075, 170.090
178.10-1	171.017, 171.045, 171.040.
178.10-5	171.040.
178.10-10	171.040.
178.15-1	171.085.
178.15-3 (a)-(b)	171.085.
178.15-5	171.090.
178.20-1	171.040, 171.043.
178.20-5	171.060.
178.25-1	171.114.
178.30-1	171.140
178.30-3	171.145.
178.30-5	171.150.
178.30-7	171.155.
178.35	171.124.
178.40-1	171.119.
179.05-1	170.174, 171.030.
179.10-1	171.030.
179.10-3	171.030, 170.175, 170.180, 170.185, 170.190.
179.10-5	170.170, 170.180, 170.185, 170.190, 171.050, 171.060.
179.15-1	170.005.
179.20-5	170.120.
189.55-5(c)	170.180.
191.01-1	173.070.
191.05-1	Deleted—unnecessary.
191.05-2	171.010(b).
191.05-3	170.055(h).
191.05-4	170.055(c).
191.05-5	170.055(d).
191.05-6	171.015.
191.05-7	171.055(g).
191.05-8	170.055(i).
191.10-1	173.075.
191.10-5	173.075.
191.10-10	173.075.
191.10-13	173.075.
191.10-15	173.075, 173.080, 173.085.
191.10-16	173.085(b).
191.10-17	173.085(c).
191.10-18	173.085(d).
191.10-19	173.085(e).
191.10-20	173.085(f)-(h).
191.10-25	170.250, 170.255, 170.260, 170.265, 170.270.
191.10-30	173.085(i)-(l).
191.10-35	173.085 (m) and (n).
191.15-1	170.174, 170.175.
191.15-5(a)	170.180.
191.15-5(b)	170.185.
191.20-1	170.020.
191.20-5	170.160, 170.170.
191.20-10	170.170(d).
191.20-15	173.080.
191.20-20	Deleted—unnecessary.
191.25-1	Deleted—unnecessary.
191.25-5	170.235.
191.30-1	170.110.
191.30-5	170.110.
191.30-10	170.110
191.30-15	170.110.
191.35-5	170.120.
33 CFR	
157.21(a)	172.060, 172.065.
157.24(b)	170.090.
157.24(d)	170.075.
Appendix B	172.060, 172.065.

List of Subjects

46 CFR Part 2

Vessels, Law enforcement, Penalties, Fire protection, Marine safety.

46 CFR Part 31

Marine safety, Tank vessels, Barges, Law enforcement, Flammable materials.

46 CFR Part 32

Cargo vessels, Marine safety, Fire protection, Tank vessels, Barges.

46 CFR Part 35

Marine safety, Navigation (water), Reporting and recordkeeping requirements, Tank vessels, Barges, Seaman.

46 CFR Part 37

Cargo vessels, Marine safety, Nuclear vessels, Radiation protection.

46 CFR Part 42

Penalties, Vessels, Marine safety, Foreign trade, Treaties, Navigation (water).

46 CFR Part 46

Passenger vessels, Penalties, Foreign trade, Marine safety.

46 CFR Part 56

Vessels, Marine safety.

46 CFR Part 71

Marine safety, Passenger vessels, Reporting and recordkeeping requirements, Foreign trade, Law enforcement.

46 CFR Part 72

Fire prevention, Marine safety, Passenger vessels.

46 CFR Part 73

Marine safety, Passenger vessels.

46 CFR Part 74

Marine safety, Passenger vessels.

46 CFR Part 75

Marine safety, Passenger vessels.

46 CFR Part 78

Marine safety, Passenger vessels, Penalties, Reporting and recordkeeping requirements, Navigation (water).

46 CFR Part 79

Marine safety, Nuclear vessels, Passenger vessels, Radiation protection.

46 CFR Part 91

Cargo vessels, Marine safety, Reporting and recordkeeping requirements, Law enforcement.

46 CFR Part 93

Cargo vessels, Marine safety.

46 CFR Part 97

Cargo vessels, Marine safety, Reporting and recordkeeping requirements, Navigation (water), Penalties.

46 CFR Part 99

Cargo vessels, Marine safety, Nuclear vessels, Radiation protection.

46 CFR Part 106

Energy, Environmental protection, Fire protection, Hazardous materials, Marine safety, Ocean thermal energy conversion, Vessels.

46 CFR Part 107

Vessels, Continental shelf, Oil and gas exploration, Marine safety, Marine resources.

46 CFR Part 108

Fire prevention, Vessels, Continental shelf, Oil and gas exploration, Marine safety, Marine resources.

46 CFR Part 109

Reporting and recordkeeping requirements, Vessels, Continental shelf, Oil and gas exploration, Marine safety, Marine resources.

46 CFR Part 111

Vessels, Electric power, Marine safety.

46 CFR Part 151

Hazardous materials transportation, Marine safety, Flammable material, Tank vessels, Barges.

46 CFR Part 153

Hazardous materials transportation, Marine safety, Tank vessels, Barges.

46 CFR Part 154

Gases, Hazardous materials transportation, Marine safety, Natural gas, Vessels.

46 CFR Part 163

Marine safety.

46 CFR Part 167

Fire prevention, Reporting and recordkeeping requirements, Schools, Vessels, Marine safety.

46 CFR Part 168

Schools, Vessels, Marine safety.

46 CFR Part 170

Marine safety, Subdivision, Stability, Vessels, Tank vessels, Cargo vessels, Nuclear vessels, Passenger vessels, Oceanographic vessels, Sailing vessels, Nautical schools, Tugboats, Towboats, Mobile offshore drilling units, Barges, Grain, Oil and gas exploration, Hazardous materials transportation, Gases, Natural gas, Incorporation by reference.

46 CFR Part 171

Marine safety, Subdivision, Stability, Vessels, Passenger vessels, Sailing vessels, Barges, Incorporation by reference.

46 CFR Part 172

Marine safety, Subdivision, Stability, Vessels, Tank vessels, Cargo vessels, Passenger vessels, Sailing vessels, Barges, Grain, Hazardous materials transportation, Gases, Natural gas.

46 CFR Part 173

Marine safety, Subdivision, Stability, Vessels, Cargo vessels, Oceanographic vessels, Nautical schools, Tugboats, Towboats, Barges.

46 CFR Part 174

Marine safety, Subdivision, Stability, Vessels, Cargo vessels, Nuclear vessels, Tugboats, Towboats, Mobile offshore drilling units, Barges, Oil and gas exploration.

46 CFR Part 177

Marine safety, Passenger vessels.

46 CFR Part 178

Marine safety, Passenger vessels.

46 CFR Part 179

Marine safety, Passenger vessels.

46 CFR Part 185

Marine safety, Passenger vessels, Reporting and recordkeeping requirements, Navigation (water).

46 CFR Part 189

Marine safety, Oceanographic vessels.

46 CFR Part 190

Fire prevention, Marine safety, Oceanographic vessels.

46 CFR Part 191

Marine safety, Oceanographic vessels.

46 CFR Part 196

Marine safety, Oceanographic vessels, Reporting and recordkeeping requirements, Navigation (water), Penalties.

In consideration of the foregoing, Chapter 1 of Title 46, Code of Federal Regulations, is amended as follows:

1. The authority citations for each part amended below, except parts in Subchapter S, read as currently stated in the Code of Federal Regulations. This document makes no changes to those citations. The authority citations for parts in Subchapter S are listed in the amendments to that subchapter.

PART 2—VESSEL INSPECTIONS

2. In § 2.01–1 by revising paragraph (c) to read as follows:

§ 2.01–1 Applications for inspection.

* * * * *

(c) *New vessels.* Applications for inspection of new vessels must be preceded by the submission of applicable drawings or prints in accordance with the specific requirements in Subchapters D (Tank Vessels), E (Load Lines), F (Marine Engineering), H (Passenger Vessels), I (Cargo and Miscellaneous Vessels), J (Electrical Engineering), O (Certain Bulk Dangerous Cargoes), S (Subdivision and Stability), and T (Small Passenger Vessels) of this chapter applicable to that particular type of service in which the vessel is proposed to be operated.

* * * * *

3. In § 2.01–15, by adding a new paragraph (a)(11) to read as follows:

§ 2.01–15 Vessel repairs.

(a) * * *

(11) For repairs to a vessel that affects its subdivision or stability, see § 170.005 of this chapter.

* * * * *

4. In § 2.90–1, by adding a new paragraph (i) to read as follows:

§ 2.90–1 General requirements.

* * * * *

(i) The requirements for subdivision and stability plans and calculations are in Part 170 of this chapter.

PART 31—INSPECTION AND CERTIFICATION

5. In § 31.01–1 by revising paragraph (a) to read as follows:

§ 31.01–1 Inspections required—TB/ALL.

(a) Every tank vessel subject to the regulations in this subchapter shall be inspected biennially, annually, or oftener, if necessary, by the Coast Guard to see that the hull, boilers, machinery, equipment, apparatus for storage, and appliances of the vessel comply with the marine inspection laws, and the regulations in this subchapter, and when applicable, Subchapters E, F, J, O, Q, and S of this chapter and 33 CFR Part 155 and 157.

* * * * *

6. In § 31.05–1, by revising paragraph (a) to read as follows:

§ 31.05–1 Issuance of certificate of inspection—TB/ALL.

(a) When a tank vessel is found to comply with law and the regulations in this subchapter, and applicable provisions of Subchapters E, F, J, O, Q, and S of this chapter and 33 CFR Parts 155 and 157, a certificate of inspection will be issued to it, or to its owners, by the Officer in Charge, Marine Inspection.

* * * * *

7. By revising § 31.10–30 to read as follows:

§ 31.10–30 Stability requirements—TB/ALL.

Each tank vessel must meet the applicable requirements in Subchapter S of this chapter.

PART 32—SPECIAL EQUIPMENT, MACHINERY, AND HULL REQUIREMENTS

8. By removing § 32.63–15.

PART 35—OPERATIONS

9. By adding a new Subpart 35.08 to read as follows:

Subpart 35.08—Stability Information

§ 35.08–1 Posting of stability letter.

If a stability letter is issued under § 170.120 of this chapter, it must be posted under glass or other suitable transparent material in the pilothouse of the vessel.

PART 37—SPECIAL CONSTRUCTION, ARRANGEMENT, AND OTHER PROVISIONS FOR NUCLEAR VESSELS

10. By revising § 37.05–5 to read as follows:

§ 37.05–5 Subdivision and stability—TB/ALL.

Each vessel must meet the stability requirements in Subpart D of Part 174 of this chapter.

PART 42—DOMESTIC AND FOREIGN VOYAGES BY SEA

11. In § 42.20–5, by revising paragraph (a–1) to read as follows:

§ 42.20–5 Type "A" vessels.

* * * * *

(a–1) A vessel that meets the requirements of Subpart D, F, or G of Part 172 of this chapter is considered by the Coast Guard to meet the requirements in this section.

* * * * *

PART 46—SUBDIVISION LOAD LINES FOR PASSENGER VESSELS

12. In § 46.10–10 by revising paragraph (b) to read as follows:

§ 46.10–10 Marks to indicate subdivision load lines.

* * * * *

(b) The Commandant, U.S. Coast Guard, will determine the position of the subdivision load lines by the application of the requirements contained in this Part and Parts 170 and 171 of this chapter. The correct marking of subdivision load lines will be certified by the American Bureau of Shipping or a classification society approved by the Commandant for that purpose.

* * * * *

13. In § 46.10–65 by revising paragraph (a) to read as follows:

§ 46.10–65 Construction.

(a) The watertight subdivision of every passenger vessel must be as efficient as possible, having regard to its intended service. This principle is given effect by applying the requirements in Part 171 of this chapter.

* * * * *

14. In § 46.10–70, by revising paragraph (c) to read as follows:

§ 46.10–70 Plans and inspections of new and converted vessels.

* * * * *

(c) Upon completion of construction or conversion of a passenger vessel, a stability test must be performed and stability information must be supplied to the operator as required by Part 170 of this chapter.

15. In § 46.15–1, by revising paragraph (a) to read as follows:

§ 46.15–1 Procedure for determination of subdivision load line.

The procedure for determining the subdivision load line as well as special construction features of the vessel must be as set forth in Subpart 72.01 and Parts 170 and 171 of this chapter.

PART 56—PIPING SYSTEMS AND APPURTENANCES

16. By revising footnote 4 of Table 56.50–55(a) to read as follows:

§ 56.50–55 Bilge pumps.

* * * * *

* When the criterion numeral exceeds 30, an additional independent power driven bilge pump is required. (See Part 171 of this chapter for determination of criterion numeral.)

* * * * *

17. In § 56.50–57, by revising paragraph (a) to read as follows:

§ 56.50–57 Bilge piping and pumps, alternative requirements.

(a) If a passenger vessel complies with §§ 171.075 and 171.082 of this chapter, its bilge pumping and piping systems must meet §§ 56.50–50 and 56.50–55, except as follows:

* * * * *

PART 71—INSPECTION AND CERTIFICATION

18. In § 71.20–20, by revising paragraph (a)(6) to read as follows:

§ 71.20–20 Specific tests and inspections.

(a) * * *

(6) For inspection and testing of watertight doors, see § 170.270 of this chapter.

19. In § 71.65–5 by revising paragraph (c) to read as follows:

§ 71.65–5 Plans and specifications required for new construction.

* * * * *

(c) *Subdivision and stability.* Plans and calculations required by Subchapter S of this chapter.

* * * * *

PART 72—CONSTRUCTION AND ARRANGEMENT

20. In § 72.01–25 by revising the introductory text of paragraph (a) to read as follows:

§ 72.01–25 Additional structural requirements.

(a) Vessels required by Part 171 of this chapter to have subdivision bulkheads, double bottoms, etc. must comply with the following structural requirements:

* * * * *

21. By adding a new Subpart 72.30 to read as follows:

Subpart 72.30—Subdivision and Stability

Sec.
72.30–1 Application.
72.30–5 Bulk Grain Cargoes.

Subpart 72.30—Subdivision and Stability

§ 72.30–1 Application.

Each vessel must meet the applicable requirements in Subchapter S of this chapter.

§ 72.30–5 Bulk grain cargoes.

Each vessel that carries grain in bulk must meet the requirements in Subpart 93.20 of this chapter.

PART 73—WATERTIGHT SUBDIVISION [REMOVED]

22. By removing Part 73

PART 74—STABILITY [REMOVED]

23. By removing Part 74.

PART 75—LIFESAVING EQUIPMENT

24. In § 75.10–10, by revising paragraph (a)(6) to read as follows:

§ 75.10–10 Requirements for vessels in ocean service.

(a) * * *

(6) This subparagraph applies to a vessel on a short international voyage. If compliance with paragraph (a)(1) of this section is impracticable, the Commandant may relax the requirement to the extent permitted by Regulations 27 and 28 of Chapter III of the International Convention for the Safety of Life at Sea, 1974, as long as the vessel complies with § 171.068 of this chapter.

* * * * *

PART 78—OPERATIONS

25. By adding a new Subpart 78.12 to read as follows:

Subpart 78.12—Stability Information

§ 78.12–1 Posting of stability letter.

If a stability letter is issued under § 170.120 of this chapter, it must be posted under glass or other suitable transparent material in the pilothouse of the vessel.

26. By revising Subpart 78.16 to read as follows:

Subpart 78.16—Port Lights

§ 78.16–1 General.

If port lights are fitted in spaces used alternatively for the carriage of cargo or passengers as permitted by § 171.116(d) of this chapter, dead covers must be fitted on the port lights when cargo is carried.

27. In § 78.17–35, by revising paragraphs (b) (1), (2), and (3) to read as follows:

§ 78.17–35 Hatches and other openings.

* * * * *

(b) * * *

(1) Watertight doors between cargo spaces prescribed in § 170.275 of this chapter.

(2) Portable plates in watertight bulkheads prescribed in § 171.111(b) of this chapter.

(3) Gangway, cargo, and coaling ports fitted below the margin line that is determined in accordance with § 171.015 of this chapter.

* * * * *

28. In § 78.47–37, by revising paragraph (b) to read as follows:

§ 78.47–37 Watertight doors.

* * * * *

(b) Class 1 doors fitted in accordance with the requirements in § 170.255 of this chapter must additionally be marked "RECLOSE AFTER USE."

PART 79—SPECIAL CONSTRUCTION, ARRANGEMENT, AND OTHER PROVISIONS FOR NUCLEAR VESSELS

29. By revising § 79.05–5 to read as follows:

§ 79.05–5 Subdivision and stability.

Each vessel must meet the stability requirements in Subpart D of Part 174 of this chapter.

PART 91—INSPECTION AND CERTIFICATION

30. In § 91.55–5, by revising paragraph (c) to read as follows:

§ 91.55–5 Plans and specifications required for new construction.

* * * * *

(c) *Subdivision and stability.* Plans and calculations as required by Subchapter S of this chapter.

* * * * *

PART 93—STABILITY

31. By revising Subpart 93.01 to read as follows:

Subpart 93.01—Application

§ 93.01–1 General.

Each vessel must meet the applicable requirements in Subchapter S of this chapter.

Subparts 93.05, 93.07, 93.10, 93.13, and 93.15—[Removed]

32. By removing all remaining portions of Part 93 except Subpart 93.20 and Table 93.17–15. Specifically, the regulations to be removed from Part 93 are Subparts 93.05, 93.07, 93.10, 93.13, and 93.15.

PART 97—OPERATIONS

33. By adding a new Subpart 97.11 to read as follows:

Subpart 97.11—Stability Letter

§ 97.11–1 Posting.

If a stability letter is issued under § 170.120 of this chapter, it must be posted under glass or other suitable transparent material in the pilothouse of the vessel.

PART 99—SPECIAL CONSTRUCTION, ARRANGEMENT, AND OTHER PROVISIONS FOR NUCLEAR VESSELS

34. By revising § 99.05–5 to read as follows:

§ 99.05–5 Subdivision and stability.

Each vessel must meet the stability requirements in Subpart D of Part 174 of this chapter.

PART 106—OCEAN THERMAL ENERGY CONVERSION FACILITIES AND PLANTSHIPS

35. By revising § 106.400 to read as follows:

§ 106.400 Application.

Each plantship and floating facility must meet the requirements in Subpart F of Part 174 of this chapter.

§§ 106.403 and 106.405 [Removed]

36. By removing §§ 106.403 and 106.405.

PART 107—INSPECTION AND CERTIFICATION

37. In § 107.231, by revising paragraph (a)(7)(ii) and adding a new paragraph (a)(8) to read as follows:

§ 107.231 Inspection for certification.

(a) * * *

(7) * * *

(ii) 33 CFR Parts 80, 85, or 86.

(8) Subchapter S of this chapter.

* * * * *

38. In § 107.305, by removing paragraphs (r) through (u–1) and revising paragraph (q) to read as follows:

§ 107.305 Plans and information.

* * * * *

(q) The plans and information required by Subchapter S of this chapter.

* * * * *

PART 108—DESIGN AND EQUIPMENT

39. In § 108.114, by revising paragraphs (d) (1) and (2) to read as follows:

§ 108.114 Appliances for watertight and weathertight integrity.

* * * * *

(d) * * *

(1) Damage causing flooding described in § 174.075 through § 174.085 of this chapter; and

(2) A wind heeling moment calculated in accordance with § 174.055 of this chapter using a wind velocity of 50 knots (25.8 meters per second).

§ 108.115 [Removed]

40. By removing § 108.115.

41. By revising § 108.301 in Subpart C to read as follows:

Subpart C—Stability

§ 108.301 Stability.

Each unit must meet the requirements in Subchapter S of this chapter that apply to Mobile Offshore Drilling Units.

42. By removing § 108.303 through § 108.343.

PART 109—OPERATIONS

43. By revising § 109.121 to read as follows:

§ 109.121 Operating manual.

An operating manual must be prepared for each unit in accordance with § 170.130 of this chapter.

44. By removing § 109.581.

PART 111—ELECTRICAL SYSTEMS—GENERAL REQUIREMENTS

45. By revising § 111.97–1 to read as follows:

§ 111.97–1 Applicability.

This subpart applies to electric power-operated watertight door systems required under Subpart H of Part 170 of this chapter.

PART 151—UNMANNED BARGES CARRYING CERTAIN BULK DANGEROUS CARGOES

46. In § 151.01–1, by adding the following to the end of paragraph (d):

§ 151.01–1 Purpose of regulations.

* * * * *

(d) * * *

Subchapter S—Parts 170–174, Subdivision and Stability.

47. In § 151.10–1, by revising paragraphs (a)(1)(i), (b)(1), (b)(3), and (b)(4) to read as follows:

§ 151.10–1 Barge hull classifications.

(a) * * *

(1) * * *

(i) Barges constructed or converted between July 1, 1964, and June 1, 1970, in accordance with the construction requirements of §§ 32.63 and 98.03 of this chapter are considered to comply with the basic provisions of this subpart and will retain the hull type classification for the service for which they were originally approved. Changes in product endorsement will not be considered a change in service, except when a change to a product of higher specific gravity necessitates a reevaluation of the intact and damage stability requirements in Subpart E of Part 172 of this chapter.

(b) * * *

(1) *Type I barge hull.* Barge hulls classed as Type I are those designed to

carry products which require the maximum preventive measures to preclude the uncontrolled release of the cargo. These barges are required to meet—

(i) Standards of intact stability and a modified two compartment standard of subdivision and damage stability, as specified in Subpart E of Part 172 of this chapter; and

(ii) Hull structural requirements, including an assumed grounding condition.

* * * * *

(3) *Type II barge hull.* Barge hulls classed as Type II are those designed to carry products which require significant preventive measures to preclude the uncontrolled release of the cargo. These barges are required to meet—

(i) Standards of intact stability and a modified one compartment standard of subdivision and damage stability, as specified in Subpart E of Part 172 of this chapter; and

(ii) Hull structural requirements, including an assumed grounding condition.

(4) *Type III barge hull.* Barge hulls classed as Type III are those designed to carry products of sufficient hazard to require a moderate degree of control. These barges are required to meet—

(i) Standards of intact stability as specified in Subpart E of Part 172 of this chapter; and

(ii) Hull structural requirements.

48. By revising § 151.10–5 including the heading to read as follows:

§ 151.10–5 Subdivision and stability.

Each barge must meet the applicable requirements in Subchapter S of this chapter.

49. By removing §§ 151.10–6 and 151.10–10.

50. By removing paragraphs (a) and (b) in § 151.10–15 and changing the heading to read "Certificate Endorsement". Paragraph (c) of § 151.10–15 is being retained and paragraphs (a) and (b) are being reserved.

PART 153—SAFETY RULES FOR SELF-PROPELLED VESSELS CARRYING HAZARDOUS LIQUIDS

51. In § 153.7, by revising paragraphs (c)(3) introductory text, (c)(4)(ii), and (c)(5) to read as follows:

§ 153.7 Existing tankships.

* * * * *

(c) * * *

(3) The Commandant (G–MTH) considers on a case by case basis endorsing as a type II containment system one that fails to meet §§ 153.231(b), 153.234, 172.130 and 172.133 of this chapter if the tankship and containment system meet the following minimum conditions:

* * * * *

(4) * * *

(ii) The tankship can survive the damage described in §§ 172.135 and 172.150 of this chapter to those parts of the tankship other than machinery spaces.

(5) The Commandant (G–MTH) considers on a case by case basis endorsing as a type III containment system one that does not meet §§ 153.234, 172.130 and 172.133 of this chapter if the tankship has a load line certificate.

* * * * *

52. By adding a new § 153.19 to read as follows:

§ 153.19 Stability requirements.

Each vessel must meet the applicable requirements in Subchapter S of this chapter.

§§ 153.20 through 153.35 [Removed]

53. By removing the heading "HULL TYPE CALCULATIONS" and §§ 153.20 through 153.35, inclusive.

54. In § 153.230, by revising paragraphs (a) and (b)(2) to read as follows:

§ 153.230 Type I system.

* * * * *

(a) The vessel must meet the requirements in Subpart F of Part 172 of this chapter for a type I hull.

(b) * * *

(2) It may not be located in any part of the tankship subject to the damage described in Table 172.135 of this chapter for—

(i) COLLISION PENETRATION, Transverse extent; and

(ii) GROUNDING PENETRATION, Vertical extents from the baseline upward.

55. In § 153.231, by revising paragraphs (a) and (b)(2) to read as follows:

§ 153.231 Type II system.

* * * * *

(a) The vessel must meet the requirements in Subpart F of Part 172 of this chapter for a type I or II hull.

(b) * * *

(2) It may not be located in any part of the tankship subject to the damage described in Table 172.135 of this chapter for GROUNDING PENETRATION, Vertical extent from the baseline upward.

56. By revising § 153.232 to read as follows:

§ 153.232 Type III system.

A type III containment system must be in either a type I, II, or III hull. The requirements for type I, II, and III hulls are in Subpart F of Part 172 of this chapter.

57. In § 153.235, by revising paragraphs (a) and (b) to read as follows:

§ 153.235 Exceptions to cargo piping location restrictions.

* * * * *

(a) Drains back to the cargo tank under any heel or trim resulting from the damage specified in § 172.135 of this chapter; and

(b) Enters the cargo tank above the liquid level for a full tank in any condition of heel or trim resulting from the damage specified in § 172.135 of this chapter.

58. By revising § 153.806 including the heading to read as follows:

§ 153.806 Loading information.

Each tankship must have a manual containing information that enables the master to load and ballast the tankship while keeping structural stresses within design limits.

PART 154—SAFETY STANDARDS FOR SELF-PROPELLED VESSELS CARRYING BULK LIQUEFIED GASES

59. In § 154.4, by revising paragraph (b)(1) to read as follows:

§ 154.4 U.S. flag vessel: Endorsement application.

* * * * *

(b) * * *

(1) Hull type calculations required by § 172.175 of this chapter.

* * * * *

60. In § 154.5, by revising paragraph (a)(1) to read as follows:

§ 154.5 Foreign flag vessel: Letter of Compliance endorsement application.

(a) * * *

(1) The design ambient temperatures and cargo tank design stress factors, listed in item 3 of the IMO Certificate, that meet §§ 154.174, 154.176, 154.447, 154.450, 154.466 and 172.175(c) of this chapter.

* * * * *

61. By revising § 154.200 to read as follows:

§ 154.200 Stability requirements: General.

Each vessel must meet the applicable requirements in Subchapter S of this chapter.

62. By removing § 154.205 through and including § 154.230.

63. In § 154.235 by revising paragraphs (a), (b), and (d) to read as follows:

§ 154.235 Cargo tank location.

(a) For type IG hulls, cargo tanks must be located inboard of—

(1) The transverse extent of damage for collision penetration specified in Table 172.180 of this chapter;

(2) The vertical extent of damage for grounding penetration specified in Table 172.180 of this chapter; and

(3) 30 inches (760 mm) from the shell plating.

(b) For type IIG, IIPG, and IIIG hulls, cargo tanks must be located inboard of—

(1) The vertical extenf of damage for grounding penetration specified in Table 172.180 of this chapter; and

(2) 30 inches (760 mm) from the shell plating.

* * * * *

(d) For type IIG, IIPG, and IIIG hulls, cargo tank suction wells may penetrate into the area of bottom damage specified as the vertical extent of damage for grounding penetration in Table 172.180 of this chapter if the penetration is the lesser of 25% of the double bottom height or 13.8 in. (350 mm).

64. In § 154.1809, by revising paragraph (b) to read as follows:

§ 154.1809 Loading and stability manual.

* * * * *

(b) The loading and stability manual must contain—

(1) Information that enables the master to load and ballast the vessel while keeping structural stresses within design limits; and

(2) The information required by § 170.110 of this chapter.

PART 163—CONSTRUCTION

65. In § 163.001–2, by revising paragraph (c) to read as follows:

§ 163.001–2 General requirements for sliding watertight doors.

* * * * *

(c) *Location.* The permitted locations of the several types of watertight doors are contained in Subchapters E and S of this chapter.

* * * * *

66. In § 163.001–4, by adding paragraph (b)(3) to read as follows:

§ 163.001–4 Manual operating controls for sliding watertight doors.

* * * * *

(b) * * *

(3) Manual operating equipment must be capable of closing a door with the vessel listed 15 degrees either way.

* * * * *

PART 167—PUBLIC NAUTICAL SCHOOL SHIPS

§§ 167.20–5, 167.20–20, 167.20–25, and 167.20–30 [Removed]

67. By removing §§ 167.20–5, 167.20–20, 167.20–25, and 167.20–30.

68. By adding a new § 167.20–7 to read as follows:

§ 167.20–7 Subdivision and stability.

Each vessel must meet the applicable requirements in Subchapter S of this chapter.

PART 168—CIVILIAN NAUTICAL SCHOOL VESSELS

69. By adding a new § 168.05–10 to read as follows:

§ 168.05–10 Subdivision and stability.

Each vessel must meet the applicable requirements in Subchapter S of the chapter.

70. By adding a new Subchapter S—Subdivision and Stability to read as follows:

SUBCHAPTER S—SUBDIVISION AND STABILITY

PART 170—STABILITY REQUIREMENTS FOR ALL INSPECTED VESSELS

Subpart A—General Provisions

Sec.

170.001 Applicability.
170.005 Vessel alteration or repair.
170.010 Equivalents.
170.015 Incorporation by reference.

Subpart B—Definitions

170.050 General terms.
170.055 Definitions concerning a vessel.

Subpart C—Plan Approval

170.070 Applicability.
170.075 Plans.
170.080 Stability booklet.
170.085 Information required before a stability test.
170.090 Calculations.
170.093 Specific approvals.
170.095 Data submittal for a vessel equipped to lift.
170.098 Submittal of information for the carriage of bulk grain [Reserved].
170.100 Addresses for submittal of plans and calculations.

Subpart D—Stability Instructions for Operating Personnel

170.105 Applicability.
170.110 Stability booklet.
170.120 Stability letter.
170.125 Operating information for a vessel engaged in lifting.
170.130 Operating information for a mobile offshore drilling unit.
170.135 Operating information for a vessel with Type III subdivision.

Sec.

Subpart E—Weather Criterion

170.160 Specific applicability.
170.170 Calculations required.
170.173 Criterion for vessels of unusual proportion and form.

Subpart F—Determination of Lightweight Displacement and Centers of Gravity

170.174 Specific applicability.
170.175 Stability test: general.
170.180 Plans and information required at the stability test.
170.185 Stability test preparations.
170.190 Stability test procedure modifications.
170.200 Estimated lightweight vertical center of gravity.

Subpart G—Special Installations

170.235 Fixed ballast.
170.245 Form flotation material.

Subpart H—Watertight Bulkhead Doors

170.248 Applicability.
170.250 Types and classes.
170.255 Class 1 doors; permissible locations.
170.260 Class 2 doors; permissible locations.
170.265 Class 3 doors; required locations.
170.270 Door design, operation, installation, and testing.
170.275 Special requirements for cargo space watertight doors.

Subpart I—Free Surface

170.285 Free surface correction for intact stability calculations.
170.290 Free surface correction for damage stability calculations.
170.295 Special considerations for free surface of passive roll stabilization tanks.

Authority: Section 2, 87 Stat. 418 (46 U.S.C. 86); Sec. 2, 49 Stat. 888 as amended (46 U.S.C. 88a); Sec. 5, 49 Stat. 1384 as amended (46 U.S.C. 369); R.S. 4405, as amended (46 U.S.C. 375); Sec. 3, 70 Stat. 152 as amended (46 U.S.C. 390b); Sec. 5, Pub. L. 95–474, 92 Stat. 1480 as amended (46 U.S.C. 391a); Sec. 1, Pub. L. 85–739, 72 Stat. 833, as amended (46 U.S.C. 404); R.S. 4462, as amended (46 U.S.C. 416); Sec. 2, Pub. L. 96–453, 94 Stat. 207 (46 U.S.C. 1295f(c)(2)); Sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); Sec. 3, 68 Stat. 675 (50 U.S.C. 198); Sec. 6, 80 Stat. 938 (49 U.S.C. 1655(b)); E.O. 12234, 45 FR 58801; 49 CFR 1.46.

Subpart A—General Provisions

§ 170.001 Applicability.

(a) This subchapter applies to each vessel contracted for on or after (60 days after publication) that is—

(1) Inspected under another subchapter of this chapter; or

(2) A foreign vessel that must comply with the requirements in Subchapter O of this chapter.

(b) Each vessel contracted for before (60 days after publication) may be constructed in accordance with the regulations in effect at the time. However, any alterations or repairs

must be done in accordance with § 170.005.

(c) Certain regulations in this subchapter apply only to limited categories of vessels. Specific applicability statements are provided at the beginning of those regulations.

§ 170.005 Vessel alteration or repair.

(a) Alterations and repairs to inspected vessels must be done—

(1) Under the direction of the Officer in Charge, Marine Inspection; and

(2) Except as provided in paragraph (b) of this section, in accordance with the regulations in this subchapter, to the extent practicable.

(b) Minor alterations and repairs may be done in accordance with regulations in effect at the time the vessel was contracted for.

§ 170.010 Equivalents.

Substitutions for fittings, equipment, arrangements, calculations, information, or tests required in this subchapter may be approved by the Commandant, the Commander, Merchant Marine Technical Office, or the Officer in Charge, Marine Inspection, if the substitution provides an equivalent level of safety.

§ 170.015 Incorporation by reference.

(a) Certain materials are incorporated by reference into this subchapter with the approval of the Director of the Federal Register. The Office of the Federal Register publishes a table, "Material Approved for Incorporation by Reference," which appears in the Finding Aids section of this volume. In that table is found the date of the edition approved, citations to the particular sections of this subchapter where the material is incorporated, addresses where the material is available, and the date of the approval by the Director of the Federal Register. To enforce any edition other than the one listed in the table, notice of the change must be published in the **Federal Register** and the material made available. All approved material is on file at the Office of the Federal Register, Washington, D.C. 20408 and at the Office of Merchant Marine Safety (G–MTH–5/13), Room 1308, U.S. Coast Guard Headquarters Building, 2100 Second Street SW., Washington, D.C. 20593.

(b) The materials approved for incorporation by reference in this subchapter are:

Military Specification MIL–P–21929B.

International Maritime Organization (IMO) Resolution A.265 (VIII) dated December 10, 1973.

Subpart B—Definitions

§ 170.050 General terms.

(a) "Commander, Merchant Marine Technical Office (Commander (mmt))" means a district commander described in 33 CFR Part 3 whose command includes a merchant marine technical office or an authorized representative of the district commander.

(b) "Commandant" means the Commandant of the Coast Guard or an authorized representative of the Commandant.

(c) "Exposed waters" means waters more than 20 nautical miles (37 kilometers) from the mouth of a harbor of safe refuge and other waters which the Officer in Charge, Marine Inspection determines to present special hazards due to weather or other circumstances.

(d) "Great Lakes" includes both the waters of the Great Lakes and of the St. Lawrence River as far east as a straight line drawn from Cap de Rosiers to West Point, Anticosti Island, and west of a line along the 63rd meridian from Anticosti Island to the north shore of the St. Lawrence River.

(e) "Lakes, Bays, and Sounds" includes the waters of any lake, bay, or sound, except the Great Lakes.

(f) "Oceans" includes the waters of—

(1) Any ocean;

(2) The Gulf of Mexico;

(3) The Caribbean Sea;

(4) The Gulf of Alaska; and

(5) Any other waters designated as "oceans" by the Commandant.

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

(h) "Oil" means oil of any kind or in any form, and includes but is not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

(i) "Partially protected waters" means—

(1) Waters within 20 nautical miles (37 kilometers) of the mouth of a harbor of safe refuge, unless determined by the OCMI to be exposed waters; and

(2) Those portions of rivers, harbors, lakes, etc. which the OCMI determines not to be sheltered.

(j) "Protected waters" means sheltered waters presenting no special hazards such as most rivers, harbors, lakes, etc.

(k) "Rivers" means any river, canal, or any other similar body of water designated by the OCMI.

§ 170.055 Definitions concerning a vessel.

(a) "Auxiliary sailing vessel" means a vessel capable of being propelled both by mechanical means and by sails.

(b) "Barge" means a vessel not equipped with a means of self-propulsion.

(c) "Beam" or "B" means the maximum width of a vessel from—

(1) Outside of planking to outside of planking on wooden vessels; and

(2) Outside of frame to outside of frame on all other vessels.

(d) "Bulkhead deck" means the uppermost deck to which watertight bulkheads and the watertight shell extend.

(e) "Downflooding" means, except as provided in § 174.035(b), the entry of seawater through any opening into the hull or superstructure of an undamaged vessel due to heel, trim, or submergence of the vessel.

(f) "Downflooding angle" means, except as specified in §§ 171.055(f), 172.090(d), 173.095(e), 174.015(b), and 174.035(b), the static angle from the intersection of the vessel's centerline and waterline in calm water to the first opening that cannot be closed watertight and through which downflooding can occur.

(g) "Draft" means the vertical distance from the molded baseline amidships to the waterline.

(h) "Length" means the distance between fore and aft points on a vessel. The following specific terms are used and correspond to specific fore and aft points:

(1) "Length between perpendiculars (LBP)" means the horizontal distance measured between perpendiculars taken at the forward-most and after-most points on the waterline corresponding to the deepest operating draft.

(2) "Length overall (LOA)" means the horizontal distance between the forward-most and after-most points on the hull.

(3) "Length on the waterline (LWL)" means the horizontal distance between the forward-most and after-most points on a vessel's waterline.

(4) "Length on deck (LOD)" means the length between the forward-most and after-most points on a specified deck measured along the deck, excluding sheer.

(5) "Load line length (LLL)" has the same meaning that is provided for the term "length" in § 42.13–15(a) of this chapter.

(i) "Lightweight" means with fixed ballast and with machinery liquids at operating levels but without any cargo, stores, consumable liquids, water ballast, or persons and their effects.

(j) "Main transverse watertight bulkhead" means a transverse bulkhead that must be maintained watertight in order for the vessel to meet the damage stability and subdivision requirements in this subchapter.

(k) "Permeability" is the percentage of the volume of a space that can be occupied by water.

(l) "Sailing vessel" means a vessel propelled only by sails.

(m) "Ship" means a self-propelled vessel.

(n) "Tank vessel" means a vessel that is specially constructed or converted to carry liquid bulk cargo in tanks.

(o) "Tank barge" means a tank vessel not equipped with a means of self-propulsion.

(p) "Tank ship" means a tank vessel propelled by mechanical means or sails.

(q) "Vessel" means any vessel and includes both ships and barges.

(r) "Weather deck" means the uppermost deck exposed to the weather.

Subpart C—Plan Approval

§ 170.070 Applicability.

(a) Except as provided in paragraph (b) of this section, this subpart applies to each vessel.

(b) This subpart does not apply to any of the following vessels unless the stability of the vessel is questioned by the OCMI:

(1) A passenger vessel that—

(i) Is less than 100 gross tons;

(ii) Is less than 65 feet (19.8 meters) LOD measured over the weather deck; and

(iii) Carries 49 or less passengers.

(2) A deck cargo barge that complies with the requirements in § 174.020 of this chapter.

(3) A tank vessel that only carries a product listed in § 30.25–1 of this chapter and that is less than 150 gross tons.

(4) A tank barge that—

(i) Operates only in rivers or lakes, bays, and sounds service;

(ii) Does not have to meet 33 CFR Part 157, Subpart B; and

(iii) Only carries a product listed in § 30.25–1 of this chapter.

§ 170.075 Plans.

(a) Except as provided in paragraph (b) of this section, each applicant for an original certificate of inspection and approval of plans must also submit three copies of each of the following plans:

(1) General arrangement plan of decks, holds, and inner bottoms including inboard and outboard profiles.

(2) Lines.

(3) Curves of form.

(4) Capacity plan showing capacities and vertical, longitudinal, and transverse centers of gravity of stowage spaces and tanks.

(5) Tank sounding tables showing—

(i) Capacities, vertical centers of gravity, and longitudinal centers of gravity in graduated intervals; and

(ii) Free surface data for each tank.

(6) Draft mark locations including longitudinal location and vertical reference points.

(b) Each small passenger vessel that is designed to comply with the alternate intact stability requirements in § 171.030(b)(2) of this subchapter and the simplified method of spacing main transverse watertight bulkheads in § 171.043 of this subchapter does not have to submit the plans required by paragraph (a) of this section.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

§ 170.080 Stability booklet.

Before issuing an original certificate of inspection, three copies of the stability booklet required by § 170.110 must be submitted for approval to the Commander (mmt).

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 1125–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

§ 170.085 Information required before a stability test.

If a stability test is to be performed, a stability test procedure that contains the information prescribed in § 170.185(g) must be submitted to the Commander (mmt) at least two weeks before the test.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

§ 170.090 Calculations.

(a) Except as provided in § 170.098, all calculations required by this subchapter must be submitted with the plans required by § 170.075.

(b) If it is necessary to compute and plot any of the following curves as part of the calculations required in this subchapter, these plots must also be submitted:

(1) Righting arm or moment curves.

(2) Heeling arm or moment curves.

(3) Cross curves of stability.

(4) Floodable length curves.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

§ 170.093 Specific approvals.

Certain rules in this subchapter require specific approval of equipment or arrangements by the Commandant, Commander (mmt), or OCMI. These approval determinations will be made as a part of the plan review process.

§ 170.095 Data submittal for a vessel equipped to lift.

The following data must be submitted with the plans required by § 170.075 if the vessel is engaged in lifting and is required to comply with Subpart B of Part 173 of this chapter:

(a) A graph of maximum hook load versus maximum crane radius.

(b) A table of crane radius versus the maximum distance above the main deck to which the hook load can be raised.

(c) A table showing maximum vertical and transverse moments at which the crane is to operate.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188.)

§ 170.098 Submittal of information for the carriage of bulk grain. [Reserved]

§ 170.100 Addresses for submittal of plans and calculations.

Except as provided in § 170.098, the plans, information, and calculations required by this subpart must be submitted to one of the following:

(a) The Marine Inspection Office, in the zone where the vessel is to be built or altered.

(b) One of the following Merchant Marine Technical offices:

(1) Commander (mmt), 3rd Coast Guard District, Governors Island, New York, NY 10004, for the geographical area covered by the 1st, 3rd, 5th, and 9th Coast Guard Districts.

(2) Commander (mmt), 8th Coast Guard District, Room 845, F. Edward Hebert Building, 600 South St., New Orleans, La. 70130, for the geographical area covered by the 2nd, 7th, and 8th Coast Guard Districts.

(3) Commander (mmt), 12th Coast Guard District, Government Island, Building 51, Alameda, Calif. 94501, for the geographical area covered by the 11th, 12th, 13th, 14th, and 17th Coast Guard Districts.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

Subpart D—Stability Instructions for Operating Personnel

§ 170.105 Applicability.

(a) Except as provided in paragraph (b) of this section, this subpart applies to each vessel.

(b) This subpart does not apply to any of the following vessels unless the

stability of the vessel is questioned by the OCMI:

(1) A passenger vessel that—

(i) Is less than 100 gross tons;

(ii) Is less than 65 feet (19.8 meters) LOD measured over the weather deck; and

(iii) Carries 49 or less passengers.

(2) A deck cargo barge that complies with the requirements in § 174.020 of this chapter.

(3) A tank vessel that only carries a product listed in § 30.25–1 of this chapter and that is less than 150 gross tons.

(4) A tank barge that—

(i) Operates only in rivers or lakes, bays, and sounds service;

(ii) Does not have to meet 33 CFR Part 157, Subpart B; and

(iii) Only carries a product listed in § 30.25–1 of this chapter.

§ 170.110 Stability booklet.

(a) Except as provided in paragraph (e) of this section, a stability booklet must be prepared for each vessel. On a mobile offshore drilling unit, the stability booklet is referred to as an operating manual.

(b) Each stability booklet must be approved by the Commander (mmt).

(c) Each stability booklet must contain sufficient information to enable the master to operate the vessel in compliance with the applicable regulations in this subchapter.

(d) The format of the stability booklet and the information included will vary dependent on the vessel type and operation. In developing the stability booklet, 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 booklet.

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

(4) Hydrostatic curves or tables.

(5) Capacity plan showing capacities and vertical, longitudinal, and transverse centers of gravity of stowage spaces and tanks.

(6) Tank sounding tables showing capacities, vertical centers of gravity, and longitudinal centers of gravity in graduated intervals and showing free surface data for each tank.

(7) Information on loading restrictions, such as a maximum KG or minimum GM curve that can be used to determine compliance with applicable intact and damage stability criteria.

(8) Examples of loading conditions.

(9) A rapid and simple means for evaluating other loading conditions.

(10) A brief description of the stability calculations done including assumptions.

(11) General precautions for preventing unintentional flooding.

(12) A table of contents and index for the booklet.

(13) Each ship condition which, if damage occurs, may require cross-flooding for survival and information concerning the use of any special cross-flooding fittings.

(14) The amount and location of fixed ballast.

(15) Any other necessary guidance for the safe operation of the vessel under normal and emergency conditions.

(e) A stability booklet is not required if sufficient information to enable the master to operate the vessel in compliance with the applicable regulations in this subchapter can be placed on the Certificate of Inspection, Load Line Certificate, or in the stability letter required in § 170.120.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

§ 170.120 Stability letter.

(a) Except as provided in paragraph (b) of this section, each vessel must have a stability letter issued by the Coast Guard before the vessel is placed in service. This letter sets forth conditions of operation.

(b) A stability letter is not required if the information can be placed on the Certificate of Inspection or the Load Line Certificate.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

§ 170.125 Operating information for a vessel engaged in lifting.

In addition to the information required in 170.110, the following information must be included in the stability booklet of a vessel that is required to comply with § 173.005 of this subchapter:

(a) *Non-counterballasted vessel.* If a vessel is not counterballasted, stability information setting forth hook load limits corresponding to boom radii based on the intact stability criterion in § 173.020 must be provided.

(b) *Counterballasted vessel.* If a vessel is counterballasted with water, the following information must be provided:

(1) Instructions on the effect of the free surface of the counterballast water.

(2) Instructions on the amounts of counterballast needed to compensate for hook load heeling moments.

(3) If a vessel has fixed counterballast, a table of draft versus maximum vertical moment of deck cargo and hook load combined.

(4) If a vessel has variable counterballast, a table of draft versus maximum vertical moment of deck cargo and hook load combined for each counterballasted condition.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

§ 170.130 Operating information for a mobile offshore drilling unit.

In addition to the information required in § 170.110, the following instructions must be included in the operating manual for a mobile offshore drilling unit:

(a) Instructions for operating the unit while preparing for the passage of a severe storm, including the specific actions and approximate length of time necessary to attain each level of preparedness.

(b) Instructions for operating the unit while changing its operating condition including preparations for making a move.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

§ 170.135 Operating information for a vessel with Type III subdivision.

(a) In addition to the information required in § 170.110, the stability booklet of a passenger vessel with Type III subdivision must contain the information required by Regulation 8(b) of IMO Resolution A.265 (VIII).

(b) International Maritime Organization Resolution A.265 (VIII) is incorporated by reference into this part.

(c) As used in IMO Resolution A.265 (VIII), "Administration" means the Commandant, U. S. Coast Guard.

(Approved by the Office of Management and Budget under OMB control numbers 2115–0095, 2115–0114, 2115–0130, 2115–0131, 2130–0186, and 2130–0188)

Subpart E—Weather Criterion

§ 170.160 Specific applicability

(a) Except as provided in paragraphs (b) and (c) of this section, this subpart applies to each vessel.

(b) This subpart does not apply to any of the following vessels unless the stability of the vessel is questioned by the OCMI:

(1) A passenger vessel that—

(i) Is less than 100 gross tons;

(ii) Is less than 65 feet (19.8 meters) LOD measured over the weather deck; and

(iii) Carries 49 or less passengers.

(2) A deck cargo barge that complies with the requirements in § 174.020 of this chapter.

(3) A tank vessel that only carries a product listed in § 30.25–1 of this chapter and that is—

(i) Less than 150 gross tons; or

(ii) A tank barge that operates only in river or lakes, bays, and sounds service.

(c) This subpart does not apply to the following vessels:

(1) A tank barge that carries a product listed in Table 151.01–10(b) of this chapter.

(2) A mobile offshore drilling unit.

(3) A vessel that performs the test required by § 171.030(c) of this subchapter.

§ 170.170 Calculations required.

(a) Each vessel must be shown by design calculations to have a metacentric height (GM) that is equal to or greater than the following in each condition of loading and operation:

$$GM > \frac{PAH}{W \tan (T)}$$

Where—

P = .005 + (L/14,200)² tons/ft² . . . for ocean service, Great Lakes winter service, or service on exposed waters.

P = .005 + (L/1309)² metric tons/m² . . . for ocean service, Great Lakes winter service, or service on exposed waters.

P = .0033 + (L/14,200)² tons/mt² . . . for Great Lakes summer service or service on partially protected waters.

P = .036 + (L/1309)² metric tons/ft² . . . for Great Lakes summer service or service on partially protected waters.

P = .0025 + (L/14,200)² tons/ft² . . . for service on protected waters.

P = .028 + (L/1309)² metric tons/m² . . . for service on protected waters.

L = LBP in feet (meters).

A = projected lateral area in square feet (square meters) of the portion of the vessel and deck cargo above the waterline.

H = the vertical distance in feet (meters) from the center of A to the center of the underwater lateral area or approximately to the one-half draft point.

W = displacement in long (metric) tons.

T = 14 degrees or the angle of heel at which one-half the freeboard to the deck edge is immersed, whichever is less.

(b) If approved by the Commander (mmt), a larger value of T may be used for a vessel with a discontinuous weather deck or abnormal sheer.

(c) When doing the calculations required by paragraph (a) of this section for a sailing vessel or auxiliary sailing vessel, the vessel must be assumed—

(1) To be under bare poles; or

(2) If the vessel has no auxiliary propulsion, to have storm sails set and trimmed flat.

(d) The criterion specified in this section is generally limited in application to flush deck, mechanically powered vessels of ordinary proportions and form that carry cargo below the main deck. On other types of vessels, the Commander (mmt) requires calculations in addition to those in paragraph (a) of this section. On a mechanically powered vessel under 328 feet (100 meters) in length, other than a tugboat or a towboat, the requirements in § 170.173 are applied.

§ 170.173 Criterion for vessels of unusual proportion and form.

(a) If required by the Commander (mmt), each mechanically powered vessel less than 328 feet (100 meters) LLL, other than a tugboat or towboat, must be shown by design calculations to comply with—

(1) Paragraph (b) or (c) of this section if the maximum righting arm occurs at an angle of heel less than or equal to 30 degrees; or

(2) Paragraph (b) of this section if the maximum righting arm occurs at an angle of heel greater than 30 degrees.

(b) Each vessel must have—

(1) An initial metacentric height (GM) of at least 0.49 feet (0.15 meters);

(2) A maximum righting arm (GZ) of at least 0.66 feet (0.20 meters) at an angle of heel equal to or greater 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 10.3 foot-degrees (3.15 meter-degrees) up to an angle of heel of 30 degrees;

(5) An area under each righting arm curve of at least 16.9 foot-degrees (5.15 meter-degrees) up to an angle of heel of 40 degrees or the downflooding angle, whichever is less; and

(6) An area under each righting arm curve between the angles of 30 degrees and 40 degrees, or between 30 degrees and the downflooding angle if this angle is less than 40 degrees, of not less than 5.6 foot-degrees (1.72 meter-degrees).

(c) Each vessel must have—

(1) An initial metacentric height (GM) of at least 0.49 feet (0.15 meters);

(2) A maximum righting arm that occurs at an angle of heel not less than 15 degrees;

(3) An area under each righting arm curve of at least 16.9 foot-degrees (5.15 meter-degrees) up to an angle of heel of 40 degrees or the downflooding angle, whichever is less;

(4) An area under each righting arm curve between the angles of 30 degrees and 40 degrees, or between 30 degrees and the downflooding angle if this angle is less than 40 degrees, of not less than 5.6 foot-degrees (1.72 meter-degrees); and

(5) An area under each righting arm curve up to the angle of maximum righting arm of not less than the area determined by the following equation:

$A = 10.3 + 0.187\,(30 - Y)$ foot-degrees

$A = 3.15 + 0.057\,(30 - Y)$ meter-degrees

where—

A = area in foot-degrees (meter-degrees).

Y = angle of maximum righting arm, degrees.

(d) For the purpose of demonstrating compliance with paragraphs (b) and (c) of this section, at each angle of heel a vessel's righting arm is calculated after the vessel is permitted to trim free until the trimming moment is zero.

Subpart F—Determination of Lightweight Displacement and Centers of Gravity

§ 170.174 Specific applicability.

This subpart applies to each vessel for which the lightweight displacement and centers of gravity must be determined in order to do the calculations required in this subchapter.

§ 170.175 Stability test: General.

(a) Except as provided in paragraphs (c) and (d) of this section and in § 170.200, the owner of a vessel must conduct a stability test of the vessel and calculate its vertical and longitudinal centers of gravity and its lightweight displacement.

(b) An authorized Coast Guard representative must be present at each stability test conducted under this section.

(c) The stability test may be dispensed with, or a deadweight survey may be substituted for the stability test, if the Coast Guard has a record of, or is provided with, the approved results of a stability test of a sister vessel.

(d) The stability test of a vessel may be dispensed with if the Coast Guard determines that an accurate estimate of the vessel's lightweight characteristics can be made and that locating the precise position of the vessel's vertical center of gravity is not necessary to insure that the vessel has adequate stability in all probable loading conditions.

§ 170.180 Plans and information required at the stability test.

The owner of a vessel must provide the following Coast Guard approved plans and information to the authorized Coast Guard representative at the time of the stability test:

(a) Lines.

(b) Curves of form.

(c) Capacity plans showing capacities and vertical and longitudinal centers of gravity of stowage spaces and tanks.
(d) Tank sounding tables.
(e) Draft mark locations.
(f) General arrangement plan of decks, holds, and inner bottoms.
(g) Inboard and outboard profiles.
(h) The stability test procedure described in § 170.185(g).

(Approved by the Office of Management and Budget under OMB control numbers 2115-0095, 2115-0114, 2115-0130, 2115-0131, 2130-0186, and 2130-0188)

§ 170.185 Stability test preparations.

The following preparations must be made before conducting a stability test:
(a) The vessel must be as complete as practicable at the time of the test.
(b) Each tank must be empty and dry, except that a tank may be partially filled or full if the Commander (mmt) determines that empty and dry tanks are impracticable and that the effect of filling or partial filling on the location of the center of gravity and on the displacement can be accurately determined.
(c) All dunnage, tools, and other items extraneous to the vessel must be removed.
(d) The water depth at the mooring site must provide ample clearance against grounding.
(e) Each mooring line must be arranged so that it does not interfere with the inclination of the unit during the test.
(f) The draft and axis of rotation selected for testing a mobile offshore drilling unit must be those that result in acceptable accuracy in calculating the center of gravity and displacement of the unit.
(g) The stability test procedure required by § 170.085 must include the following:
(1) Identification of the vessel to be tested.
(2) Date and location of the test.
(3) Inclining weight data.
(4) Pendulum locations and lengths.
(5) Approximate draft and trim of the vessel.
(6) Condition of each tank.
(7) Estimated items to be installed, removed, or relocated after the test, including the weight and location of each item.
(8) Schedule of events.
(9) Person or persons responsible for conducting the test.

§ 170.190 Stability test procedure modifications.

The authorized Coast Guard representative present at a stability test may allow a deviation from the requirements of § 170.180 and § 170.185 if the representative determines that the deviation would not decrease the accuracy of the test results.

§ 170.200 Estimated lightweight vertical center of gravity.

(a) Each tank vessel that does not carry a material listed in either Table 1 of § 153 or Table 4 of § 154 of this chapter may comply with this section in lieu of § 170.175 if it—
(1) Is 150 gross tons or greater;
(2) Is or ordinary proportions and form;
(3) Has a flush weather deck, one or more longitudinal bulkheads, and no independent tanks; and
(4) Is designed not to carry cargo above the freeboard deck.
(b) When doing the calculations required by § 170.170 and § 172.065, the vertical center of gravity of a tank vessel in the lightweight condition must be assumed to be equal to the following percentage of the molded depth of the vessel measured from the keel amidship:
(1) For a tank ship—70%.
(2) For a tank barge—60%.
(c) As used in this section, "molded depth" has the same meaning that is provided for the term in § 42.13-15(e) of this chapter.

Subpart G—Special Installations

§ 170.235 Fixed ballast.

(a) Fixed ballast, if used, must be—
(1) Installed under the supervision of the OCMI; and
(2) Stowed in a manner that prevents shifting of position.
(b) Fixed ballast may not be removed from a vessel or relocated unless approved by the Commander (mmt). However, ballast may be temporarily moved for vessel examination or repair if done under the supervision of the OCMI

§ 170.245 Foam flotation material.

(a) Installation of foam must be approved by the OCMI.
(b) If foam is used to comply with § 171.070(d) or § 171.095(c) of this subchapter, the following applies:
(1) Foam may be installed only in void spaces that are free of ignition sources.
(2) The foam must comply with MIL-P-21929B including the requirements for fire resistance.
(3) A submergence test must be conducted for a period of at least 7 days to demonstrate whether the foam has adequate strength to withstand a hydrostatic head equivalent to that which would be imposed if the vessel were submerged to its margin line.
(4) The effective buoyancy at the end of the submergence test must be used as the buoyancy credit; however, in no case will a credit greater than 55 lbs per cubic foot (881 kilograms per cubic meter) be allowed.
(5) The structure enclosing the foam must be strong enough to accommodate the buoyancy of the foam.
(6) Piping and cables must not pass through foamed spaces unless they are within piping and cable trunks accessible from both ends.
(7) Sample specimens must be prepared during installation and the density of the installed foam must be determined.
(8) Foam may be installed adjacent to fuel tanks if the boundary between the tank and space has double continuous fillet welds.
(9) MIL-P-21929B is incorporated by reference into this part.
(10) The results of all tests and calculations must be submitted to the OCMI.
(11) Blocked foam must—
(i) Be used in each area that may be exposed to water; and
(ii) Have a protective cover approved by the OCMI.

Subpart H—Watertight Bulkhead Doors

§ 170.248 Applicability.

(a) Except as provided in paragraph (b) of this section, this subpart applies to vessels with watertight doors in bulkheads that have been made watertight to comply with the flooding or damage stability regulations in this subchapter
(b) A watertight door on a MODU must comply with § 174.100 of this subchapter.

§ 170.250 Types and classes.

(a) Watertight doors, except doors between cargo spaces, are classed as follows:
(1) Class 1—Hinged door.
(2) Class 2—Sliding door, operated by hand gear only
(3) Class 3—Sliding door, operated by power and by hand gear.
(b) The following types of watertight doors are not permitted:
(1) A plate door secured only by bolts; and
(2) A door required to be closed by dropping or by the action of dropping weights.
(c) Whenever a door of a particular class is prescribed by these regulations, a door of a class bearing a higher number may be used.

§ 170.255 Class 1 doors; permissible locations.

(a) Except as provided in paragraphs (b) and (c) of this section, Class 1 doors within passenger, crew, and working spaces are permitted only above a deck, the molded line of which, at its lowest point at side, is at least 7 feet (2.14 meters) above the deepest load line.

(b) Class 1 doors are permitted within passenger, crew, and working spaces, wherever located, if—

(1) In the judgment of the OCMI, the door is in a location where it will be closed at all times except when actually in use; and

(2) The vessel is less than 150 gross tons and will not proceed more than 20 nautical miles (37 kilometers) from shore; or

(3) The vessel is in rivers or lakes, bays, and sounds service.

(c) Class 1 doors are permitted in any location on a vessel that—

(1) Is less than 100 gross tons; and

(2) Will operate only in the offshore oil industry trade.

§ 170.260 Class 2 doors; permissible locations.

(a) Except as provided in paragraphs (b) and (c) of this section, a Class 2 door is permitted only if—

(1) Its sill is above the deepest load line; and

(2) It is not a door described in § 170.265(d).

(b) If passenger spaces are located below the bulkhead deck, Class 2 doors with sills below the deepest load line may be used if—

(1) The number of watertight doors located below the deepest load line that are used intermittently during operation of the vessel does not exceed two, and;

(2) The doors provide access to or are within spaces containing machinery.

(c) If no passenger spaces are located below the bulkhead deck, Class 2 doors may be used if the number of watertight doors located below the deepest load line that are used intermittently during operation of the vessel does not exceed five.

(d) In determining whether Class 2 doors are allowed under paragraph (c) of this section, the watertight doors at the entrance to shaft tunnels need not be counted. If Class 2 doors are allowed under paragraph (c) of this section, the doors at the entrance to shaft tunnels may also be Class 2.

§ 170.265 Class 3 doors; required locations.

The following doors must always be Class 3:

(a) Doors in all locations not addressed in §§ 170.255 and 170.260.

(b) Doors between coal bunkers below the bulkhead deck that must be opened at sea.

(c) Doors into trunkways that pass through more than one main transverse watertight bulkhead if the door sills are less than 2.14 meters above the deepest load line.

(d) Doors below a deck, the molded line of which, at its lowest point at side, is not at least 7 feet (2.14 meters) above the deepest load line if—

(1) The vessel is engaged on a short international voyage as defined in § 171.010 of this subchapter; and

(2) The vessel is required by § 171.065 of this subchapter to have a factor of subdivision of 0.05 or less.

§ 170.270 Door design, operation, installation, and testing.

(a) Each Class 1 door must have a quick action closing device operative from both sides of the door.

(b) Each Class 1 door on a vessel in ocean service must be designed to withstand a head of water equivalent to the depth from the sill of the door to the margin line but in no case less than 10 feet (3.05 meters).

(c) Each Class 2 and Class 3 door must be designed, tested, and installed in accordance with Subpart 163.001 of Subchapter Q (Specifications) of this chapter.

(d) For each watertight door, an indicator must be installed in the pilothouse and at each other vessel operating station from which the door is not visible. The indicator must show whether the door is open or closed.

§ 170.275 Special requirements for cargo space watertight doors.

(a) A door between cargo spaces—

(1) Must not be designed for remote operation;

(2) Must be located as high as practicable; and

(3) Must be located as far inboard of the side shell as practicable but in no case closer to the side shell than one-fifth of the beam of the vessel where the beam is measured at right angles to the centerline of the vessel at the level of the deepest load line.

(b) If the door is accessible while the ship is in operation, it must have installed a lock or other device that prevents unauthorized opening.

(c) Before installing a watertight door in a cargo space, approval must be obtained from the Commander(mmt).

Subpart I—Free Surface

§ 170.285 Free surface correction for intact stability calculations.

(a) When doing the intact stability calculations required by this subchapter, 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 at least one transverse pair of wing tanks or a single centerline tank; and

(2) The maximum free surface effect of each partially filled tank containing non-consumable liquids.

(b) For the purpose of paragraph (a)(1) of this section, the tank or combination of tanks selected must be those having the greatest free surface effect.

§ 170.290 Free surface correction for damage stability calculations.

(a) When doing the damage stability calculations required by this subchapter, 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 free surface effect of at least one transverse pair of wing tanks or a single centerline tank; and

(2) The free surface effect of each partially filled tank containing other than consumable liquids.

(b) For the purpose of paragraph (a)(1) of this section, the tank or combination of tanks selected must be those having the greatest free surface effect.

(c) When doing the calculations in paragraph (a) of this section, the free surface effect of a liquid in a tank must be determined by—

(1) Assuming the vessel is heeled five degrees from the vertical; or

(2) Calculating the shift of the center of gravity of the liquid in the tank by the moment of transference method.

§ 170.295 Special consideration for free surface of passive roll stabilization tanks.

(a) The virtual increase in the vertical center of gravity due to a liquid in a roll stabilization tank may be calculated in accordance with paragraph (b) of this section if—

(1) The virtual increase in the vertical center of gravity of the vessel is calculated in accordance with § 170.285(a); and

(2) The slack surface in the roll stabilization tank is reduced during vessel motions because of the shape of the tank or the amount of liquid in the tank.

(b) The virtual rise in the vertical center of gravity calculated in accordance with § 170.285(a) for a stabilization tank may be reduced in accordance with the following equation:

$$E.F.S. = (K)(F.F.S.)$$

where—

E.F.S. = the effective free surface.
F.F.S. = the full free surface calculated in accordance with § 170.285(a).
F = the reduction factor calculated in accordance with paragraph (c) of this section.

(c) The factor (K) must be calculated as follows:

(1) Plot (I/d)tan T on Graph 170.295 where—

(i) (I) is the moment of inertia of the free surface in the roll tank;

(ii) (d) is the density of the liquid in the roll tank; and

(iii) (T) is the angle of heel.

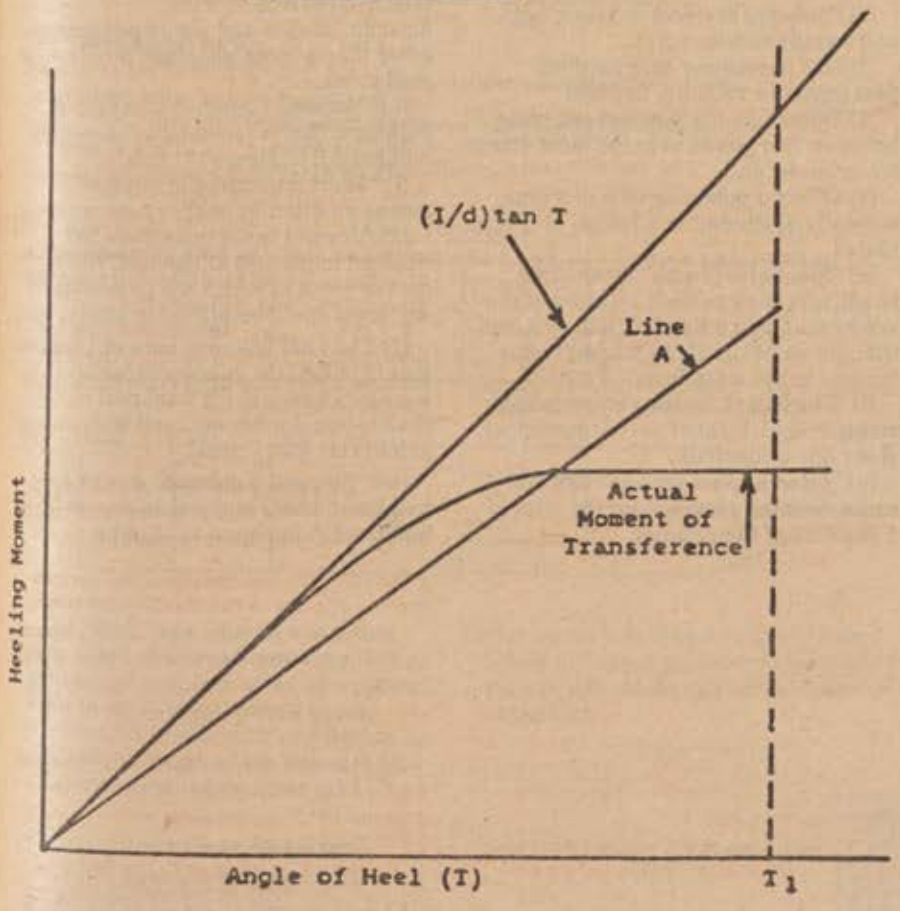
d(2) Plot the moments of transference of the liquid in the roll tank on Graph 170.295.

(3) Construct a line A on Graph 170.295 so that the area under line A between T = 0 and the angle at which the deck edge is immersed or 28 degrees, whichever is smaller, is equal to the area under the curve of actual moments of transference between the same angles.

(4) The factor (K) is calculated by determining the ratio of the ordinate of line A to the ordinate of the curve of (I/d)tan T, both measured at the angle at which the deck edge is immersed or 28 degrees, whichever is smaller.

GRAPH 170.295

Special Free Surface Correction for Stabilization Tanks



T_1 = the angle at which the deck edge is immersed or 28 degrees, whichever is smaller.

PART 171—SPECIAL RULES PERTAINING TO VESSELS CARRYING PASSENGERS

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Authority: Section 2, 57 Stat. 418 (46 U.S.C. 86); Sec. 2, 49 Stat. 888 as amended (46 U.S.C. 88a); Sec. 5, 49 Stat. 1384 as amended (46 U.S.C. 369); R.S. 4405, as amended (46 U.S.C. 375); Sec. 3, 70 Stat. 152 as amended (46 U.S.C. 390b); Sec. 5, Pub. L. 95–474, 92 Stat. 1480 as amended (46 U.S.C. 391a); Sec. 1, Pub. L. 85–739, 72 Stat. 833, as amended (46 U.S.C. 404); R.S. 4462, as amended (46 U.S.C. 416); Sec. 2, Pub. L. 96–453, 94 Stat. 207 (46 U.S.C. 1295f(c)(2)); Sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); Sec. 3, 68 Stat. 675 (50 U.S.C. 198); Sec. 6, 80 Stat. 938 (49 U.S.C. 1655(b)); E.O. 12234, 45 FR 58801; 49 CFR 1.46.

Subpart A—General

§ 171.001 Applicability.

(a) This part applies to passenger vessels inspected under Subchapter T or H of this chapter.

(b) Specific sections of this part also apply to nautical school ships, oceanographic vessels, and nuclear vessels. The applicable sections are listed in Subparts C and D of Part 173 and Subpart D of Part 174 of this subchapter.

§ 171.010 Definitions.

(a) "Cockpit" means an exposed recess in the weather deck extending no more than one-half of the length of the vessel (LOD) measured over the weather deck.

(b) "Deepest subdivision load line" means the waterline that corresponds to the deepest draft permitted by the applicable subdivision requirements in this part.

(c) "Equivalent plane bulkhead" means a bulkhead that is—

(1) Used in lieu of a recessed or stepped bulkhead when doing the subdivision calculations required in this part; and

(2) Located as shown in Figure 171.010(a).

(d) "Ferry" means a vessel that—

(1) Operates in rivers or lakes, bays, and sounds service only;

(2) Has provisions only for deck passengers or vehicles, or both;

(3) Operates on a frequent schedule between two points over the most direct water route; and

(4) Offers a public service of a type normally attributed to a bridge or tunnel.

(e) "Floodable length" means the length of a shell to shell segment of the vessel that, when flooded, will sink and trim the vessel until the margin line is tangent to the waterline.

(f) "Flush deck" means a continuous weather deck located at the uppermost sheer line of the hull.

(g) "International voyage" has the same meaning provided for the term in § 70.05–10 of this chapter.

(h) "Machinery space" means, unless otherwise prescribed by the Commandant for unusual arrangements, the space extending from the molded base line to the margin line and between the main transverse watertight bulkheads bounding the following spaces:

(1) Each space containing main and auxiliary propelling machinery.

(2) Each space containing propulsion boilers.

(3) Each space containing permanent coal bunkers.

(i) "Open boat" means a vessel not protected from entry of water by means of a complete deck, or by a combination of a partial weather deck and superstructure which is seaworthy for the waters upon which the vessel operates.

(j) "Passenger space" means a space which is provided for the accommodation and use of passengers, other than a baggage, store, provision or mail room.

(k) "Recessed bulkhead" means a bulkhead that is recessed as shown by bulkhead B in Figure 171.010(b).

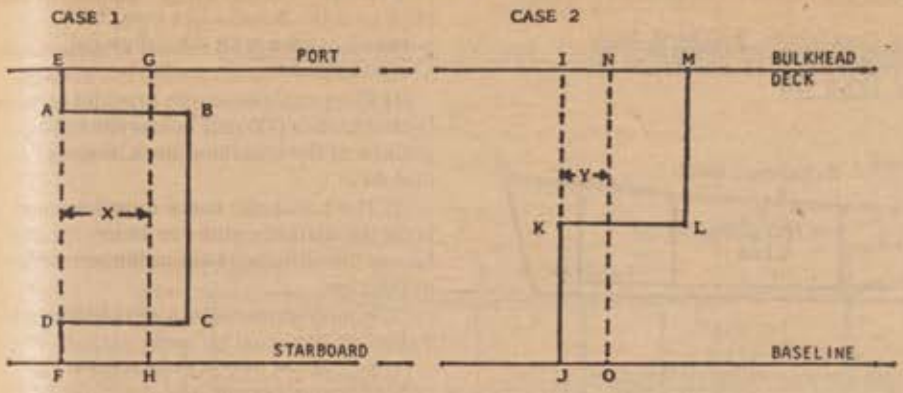
(l) "Short international voyage" means an international voyage where—

(1) A vessel is not more than 200 nautical miles (370 kilometers) from a port or place in which the passengers and crew could be placed in safety; and

(2) The total distance between the last port of call in the country in which the voyage began and the final port of destination does not exceed 600 nautical miles (1111 kilometers).

(m) "Stepped bulkhead" means a bulkhead that is stepped as shown by bulkhead A in Figure 171.010(b).

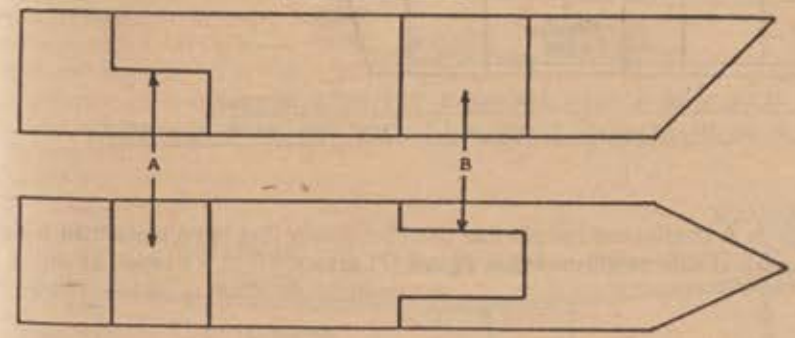
Figure 171.010(a)



Case 1: X = V/A
where-
X = Distance between EF and the equivalent plane bulkhead GH.
V = Volume of the space directly below ABCD and extending to the shell.
A = Sectional area midway between EF and GH.

Case 2: Y = V/A
where-
Y = Distance between IJ and the equivalent plane bulkhead NO.
V = Volume of the space directly below IKLM and extending to the shell.
A = Sectional area midway between IJ and NO.

Figure 171.010(b)



(n) "Well deck" means a weather deck fitted with solid bulwarks that impede the drainage of water over the sides or an exposed recess in the weather deck extending one-half or more of the length of the vessel (LOD) measured over the weather deck.

§ 171.015 Location of margin line.

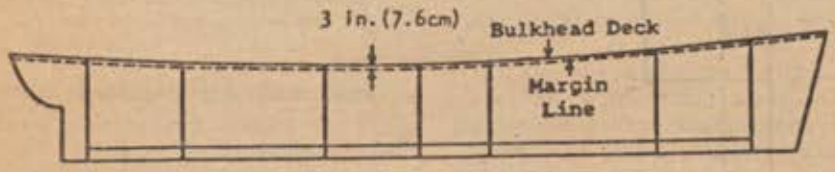
(a) *A vessel with a continuous bulkhead deck and sufficient sheer.* If the average value of the sheer at the forward perpendicular (FP) and the after perpendicular (AP) is at least 12 inches (30.5 cm), the margin line must be located no less than 3 inches (7.6 cm) below the upper surface of the bulkhead deck at side as illustrated in Figure 171.015(a).

TABLE 171.015

Average value of sheer at FP and AP in inches (cm)	Required position of margin line below top of deck amidships in inches (cm)
12 (30.5)	3 (7.6)
6 (15.2)	6 (15.2)
0	9 (22.8)

Figure 171.015(a)

Margin Line for a Vessel With a Continuous Bulkhead Deck and With an Average Value of Sheer at the FP and AP of at Least 12 Inches (30.5 cm)



(b) *A vessel with a continuous bulkhead deck and insufficient sheer.* If the average value of the sheer at the forward perpendicular (FP) and the after perpendicular (AP) is less than 12 inches (30.5 cm), the margin line must be a parabolic curve with the following characteristics:

(1) The parabolic curve must be at least 3 inches (7.6 cm) below the upper surface of the bulkhead deck at the FP and AP.

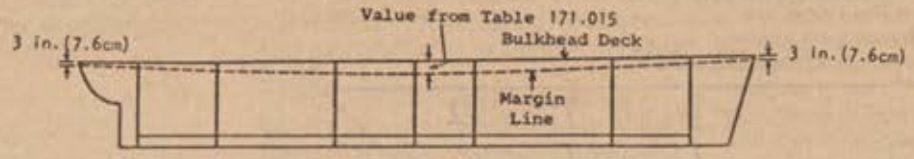
(2) The parabolic curve must be at least the distance given in Table 171.015 below the surface of the bulkhead deck amidships.

(3) Intermediate values not shown in Table 171.015 must be interpolated.

(4) Figure 171.015(b) illustrates a margin line drawn in this manner.

Figure 171.015(b)

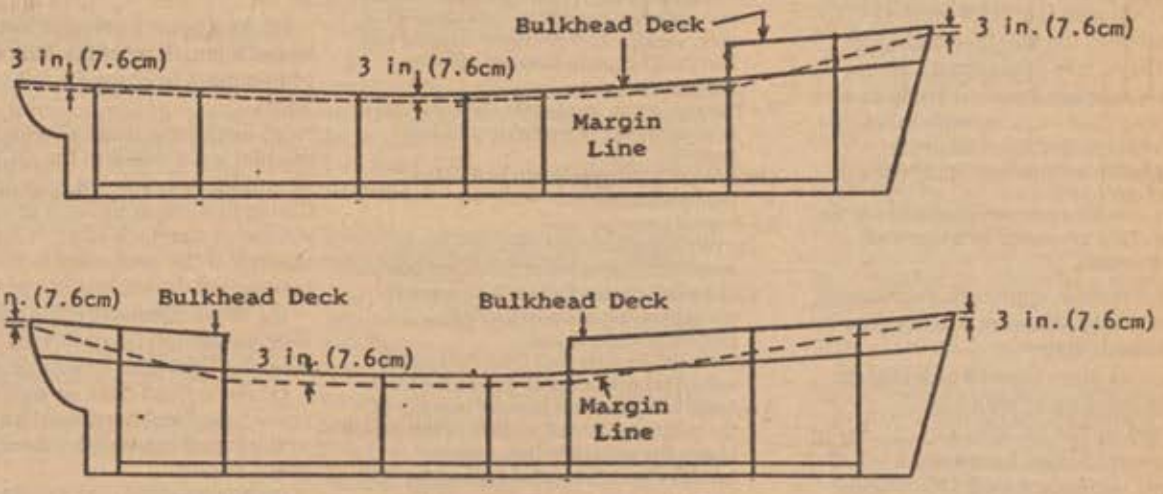
Margin Line for a Vessel With a Continuous Bulkhead Deck and With an Average Value of Sheer at the FP and AP Less Than 12 Inches (30.5 cm)



(c) *A vessel with a discontinuous bulkhead deck.* A continuous margin line must be drawn that is no more than 3 inches (7.6 cm) below the upper surface of the bulkhead deck at side as illustrated in Figure 171.015(c).

Figure 171.015(c)

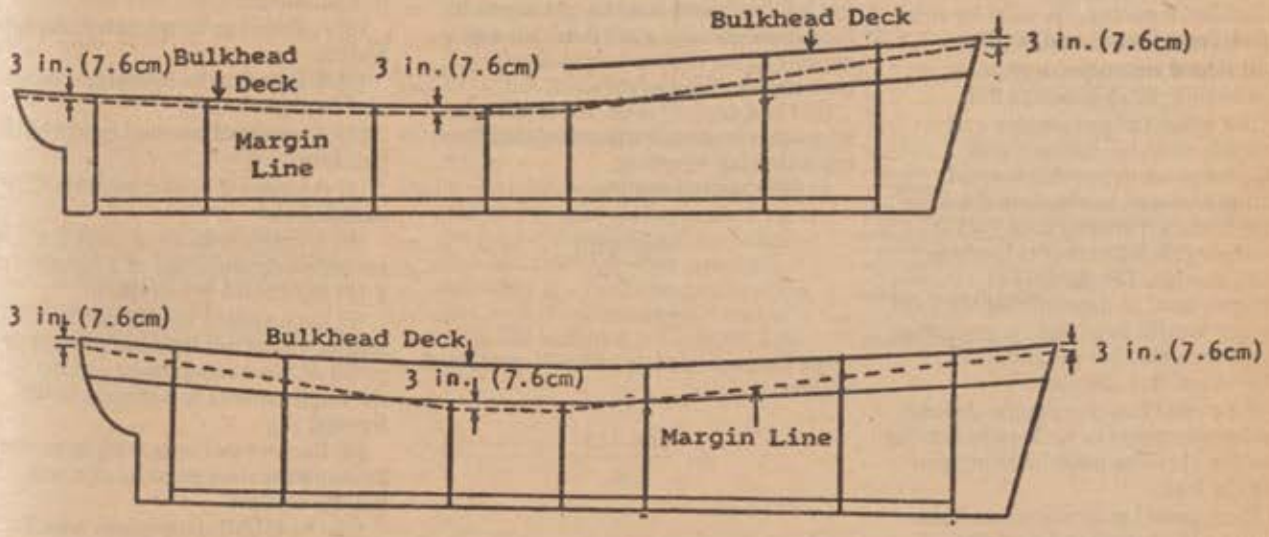
Margin Line for a Vessel With a Discontinuous Bulkhead Deck



(d) *A vessel with a discontinuous bulkhead deck where the side shell is carried watertight to a higher deck.* A continuous margin line must be drawn as illustrated in Figure 171.015(d).

Figure 171.015(d)

Margin Line for a Vessel With a Discontinuous Bulkhead Deck and With Side Shell Watertight to a Higher Deck



§ 171.017 One and two compartment standards of flooding.

(a) *One compartment standard of flooding.* A vessel is designed to a one compartment standard of flooding if the margin line is not submerged when the total buoyancy between each set of two adjacent main transverse watertight bulkheads is lost.

(b) *Two compartment standard of flooding.* A vessel is designed to a two compartment standard of flooding if the margin line is not submerged when the total buoyancy between each set of

three adjacent main transverse watertight bulkheads is lost.

Subpart B—Small Vessels

§ 171.020 Specific applicability.

(a) Except as provide in paragraph (b) of this section, this subpart applies to each vessel that is less than 100 gross tons, less than 65 feet (19.8 meters) LOD measured over the weather deck, and carries 150 or less passengers.

(b) This subpart does not apply to a vessel described in paragraph (a) of this section that carries more than 12 passengers on an international voyage.

§ 171.030 Intact stability requirements for a mechanically propelled or a non-self-propelled vessel.

(a) This section applies to each vessel, except a sailing vessel or an auxiliary sailing vessel, that—

(1) Carries more than 49 passengers;

(2) The stability of which is questioned by the OCMI; or

(3) Is permitted an increased passenger allowance by § 176.01–25(b) of this chapter.

(b) Each vessel must—

(1) Comply with § 170.170 and § 171.050 of this subchapter; or

(2) Perform the test in paragraph (d) of this section in the presence of the OCMI.

(c) Each vessel must be in the following condition when the test in paragraph (d) is performed:

(1) The construction of the vessel must be complete in all respects.

(2) Ballast, if necessary, must be solid and must be on board and in place.

(3) Fuel and water tanks must be approximately three-quarters full.

(4) The weight of passengers and other loads must be onboard 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. The number of passengers used in determining the total passenger weight must not be more than the maximum number permitted by § 176.01–25 of this chapter.

(5) If a vessel has non-return closures on cockpit scuppers or on weather deck drains, the closures must be kept open during the test.

(d) Each vessel must not exceed the limitations in paragraph (e) of this section, when subjected to the greater of the following heeling moments:

$$Mp = \frac{(W)(B)}{6}$$

or

$$Mw = (P)(A)(H)$$

where—

Mp = Passenger heeling moment in foot-lbs. (kilogram-meters).

W = the total passenger weight. (Assume 140 lbs. (63.5 kg) per passenger on protected waters when passenger load consists of men, women, and children. Assume 160 lbs. (72.6 kg) per passenger all other times.)

B = The maximum transverse distance that is accessible to the passengers in feet (meters).

Mw = Wind heeling moment in foot-lbs. (kilogram-meters).

P = A wind pressure of—

(1) 7.5 lbs./square foot (36.6 kg/square meter) for operation in protected waters;

(2) 10.0 lbs/square foot (48.8 kg/square meter) for operation in partially protected waters; and

(3) 15.0 lbs./square foot (73.2 kg/square meter) for operation in exposed waters.

A = Area, in square feet (square meters), of the projected lateral surface of the vessel above the waterline (this surface includes each projected area of the hull, superstructure and area bounded by railings and structural canopies).

H = Height, in feet (meters), to the center of area (A) above the waterline.

(e) Each vessel must not exceed the following limits of heel when doing the test in paragraph (d) of this section:

(1) *On a flush deck or well deck vessel,* no more than one half the freeboard may be immersed, except that, on a well deck vessel that operates on protected waters and has scuppers, the full freeboard may be immersed if the full freeboard is not more than one quarter of the distance from the waterline to the gunwale.

(2) *On a cockpit boat,* the maximum allowable immersion is calculated from the following equation:

(i) On exposed waters—

$$i = \frac{f(2L - 1.5L')}{4L}$$

(ii) On protected or partially protected waters

$$i = \frac{f(2L - L')}{4L}$$

Where—

i = maximum allowable immersion in feet (meters).

f = freeboard in feet (meters).

L = LOD, measured over the weather deck, in feet (meters).

L' = length of cockpit in feet (meters).

(3) *On an open boat,* no more than one-quarter of the freeboard may be immersed.

(4) In no case may the angle of heel exceed 14 degrees.

(f) The limits of heel must be measured at—

(1) The point of minimum freeboard; or

(2) At a point three quarters of the vessel's length from the bow if the point of minimum freeboard is aft of this point.

(g) Each ferry must also be tested in a manner acceptable to the OCMI to determine whether the trim or heel during loading or unloading will submerge the deck edge. A ferry passes this test if the deck edge is not submerged during loading or unloading.

(h) When demonstrating compliance with paragraph (e) of this section, the freeboard must be measured as follows:

(1) *For a flush deck or well deck vessel,* the freeboard must be measured to the top of the weatherdeck at the side of the vessel.

(2) *For a vessel with a cockpit or for an open boat,* the freeboard must be measured to the top of the gunwale.

§ 171.035 Intact stability requirements for a sailing vessel or an auxiliary sailing vessel.

(a) Except as provided in paragraph (b) of this section, each of the following sailing vessels and auxiliary sailing vessels must meet the intact stability standards of § 170.170 and § 171.055 of this subchapter:

(1) A vessel to be operated in exposed waters.

(2) A vessel to be operated during non-daylight hours.

(3) A vessel of unusual type, rig, or hull form.

(4) A vessel that carries more than 49 passengers.

(b) A catamaran must meet the intact stability requirements of § 170.170 and § 171.057 of this subchapter.

(c) Each sailing vessel and auxiliary sailing vessel not listed in paragraph (a) or (b) of this section must comlpy with the requirements in paragraphs (d) through (h).

(d) Each vessel operating in partially protected waters must have a self-bailing cockpit.

(e) The OCMI determines whether the vessel has adequate stability for protected waters or partially protected waters. When making this determination, the analysis techniques of paragraphs (f) or (g) of this section are used unless the OCMI determines

that other analysis techniques are more appropriate.

(f) Operational tests may be performed to assure that the vessel shows satisfactory handling characteristics under sail.

(g) The simplified stability test of § 171.030 may be used. The heeling moment used for this test must be the greater of the following:

(1) Passenger heeling moment from § 171.030.

(2) Wind heeling moment from § 171.030 under bare poles, or, if the vessel has no auxiliary power, with storm sails set.

(3) Wind heeling moment calculated from the following equation:

$$Mw = (P)(A)(H)$$

where—

Mw = wind heeling moment in foot-lbs. (kilogram-meters).

A = the windage area of the vessel in square feet (square meters) with all sail set and trimmed flat.

H = the distance in feet (meters) from the center of the windage area to the waterline.

P = 1.0 lbs./square foot (4.9 kilograms/square meter) for both protected and partially protected waters.

(h) Additional or different stability requirements may be needed for a broad, shallow draft vessel with little or no ballast outside the hull. The additional requirements, if needed, will be prescribed by the appropriate Commander (mmt).

§ 171.040 Watertight subdivision.

(a) Each vessel that carries more than 49 passengers must comply with the following:

(1) Each vessel must have a collision bulkhead.

(2) If the vessel is designed to comply with §171.030(b)(1), it must also meet the subdivision and damage stability requirements in § 171.070 and § 171.080.

(3) If the vessel is designed to comply with § 171.030(b)(2), the main transverse watertight bulkheads must be spaced in accordance with § 171.043.

(b) Each vessel that does not carry more than 49 passengers must have a collision bulkhead unless it is—

(1) Less than 40 feet (12 meters) in length and operated on partially protected waters; or

(2) Operated on other than ocean waters.

(c) Insofar as practicable, watertight bulkheads must be installed in one plane without steps or recesses.

(d) Each double-ended ferry that is required by paragraphs (a) or (b) of this section to have a collision bulkhead must also have a second collision bulkhead. One collision bulkhead must be located in each end of the vessel.

§ 171.043 Simplified method of spacing main transverse watertight bulkheads.

(a) The maximum distance between adjacent main transverse watertight bulkheads on vessels required by § 171.040(a)(3) to comply with this section, must not be greater than the smaller of the following:

(1) One-third of LOD measured over the bulkhead deck; or

(2) The distance given by the following equation:

$$d = \frac{(F)(f)(L)}{D}$$

where—

d = the maximum distance in feet (meters) between adjacent main transverse watertight bulkheads.

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

L = LOD in feet (meters) measured over the bulkhead deck.

F = the floodable length factor from Table 171.043.

D = the distance in feet (meters) from the inside of the shell plating or planking to the point of intersection of the bulkhead deck and side shell when measured amidships at a point one-quarter of the maximum beam, amidships, from the centerline as shown in Figure 171.043(a).

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

$$f = \frac{a+b}{2}$$

where—

f = the effective freeboard in feet (meters).

a = the freeboard in feet (meters) measured—

(1) at the forward main transverse watertight bulkhead; and

(2) from the deepest load line to—

(i) the top of the bulkhead deck on a flush deck vessel; or

(ii) if a vessel has a stepped bulkhead deck, the line shown in Figure 171.043(b); or

(iii) if a vessel has an opening port light below the bulkhead deck, the line shown in Figure 171.043(c).

b = the freeboard in feet (meters) measured—

(1) at the aft main transverse watertight bulkhead; and

(2) from the deepest load line to—

(i) the top of the bulkhead deck on a flush deck vessel; or

(ii) if a vessel has a stepped bulkhead deck, the line shown in Figure 171.043(b); or

(iii) if a vessel has an opening port light below the bulkhead deck, the line shown in Figure 171.043(c).

TABLE 171.043—TABLE OF FLOODABLE LENGTH FACTORS

(d/L)X100 [1]	Floodable length factor [2]
0-10	0.33
15	.33
20	.34
25	.36
30	.38
35	.43
40	.48
45	.54
50	.61
55	.63
60	.58
65	.53
70	.48
75	.44
80	.40
85	.37
90-100	.34

[1] where—
d = the distance in feet (meters) from the midpoint of the compartment to the forward most point of the bulkhead deck excluding sheer; and
L = the length of the vessel (LOD) in feet (meters) measured over the bulkhead deck.

[2] Intermediate values of floodable length factor can be obtained by interpolation.

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BILLING CODE 4910-14-C

Figure 171.043(a)

Transverse Location for Measuring Depth (D)

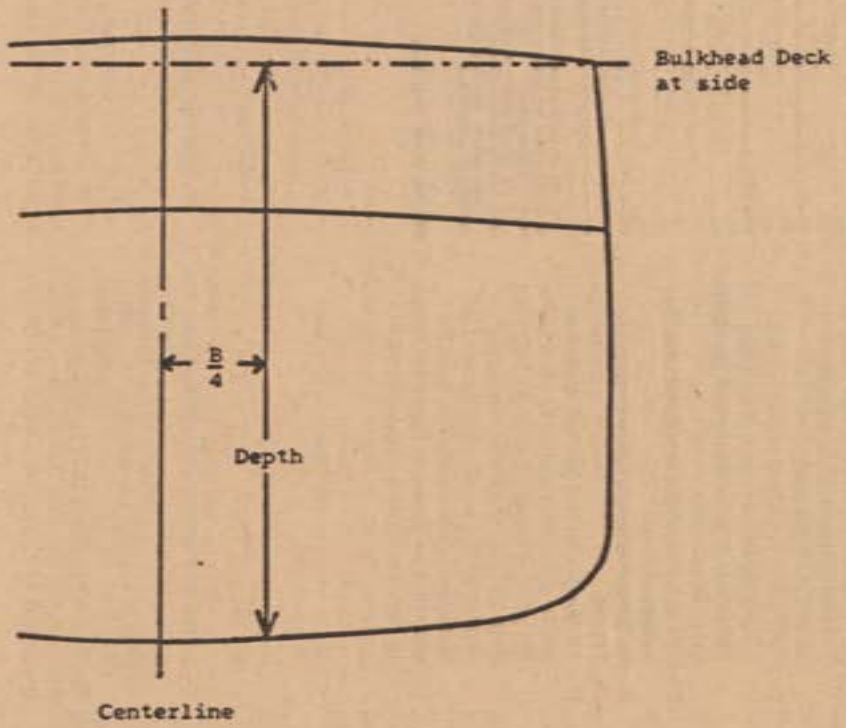
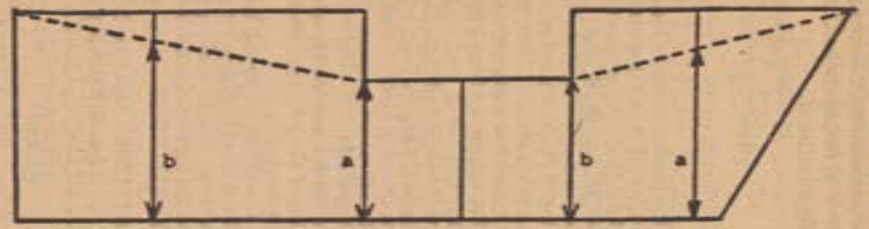


Figure 171.043(b)

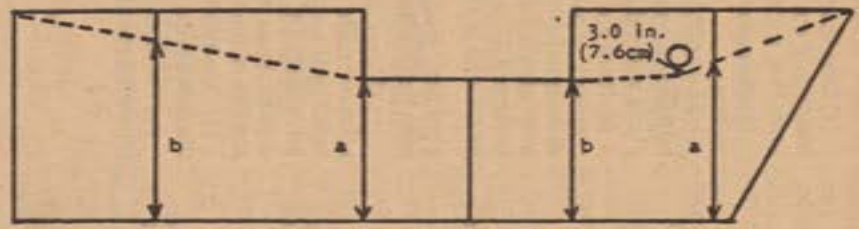
Freeboard Measurement-
Vessel With a Stepped Bulkhead Deck



a and b shown for two sample compartments

Figure 171.043(c)

Freeboard Measurement-
Vessel With a Stepped Bulkhead Deck and
a Port Light Below the Bulkhead Deck



a and b shown for two sample compartments

Subpart C—Large Vessels

§ 171.045 Specific applicability.

This subpart applies to each vessel that fits into any one of the following categories:

(a) Greater than 100 gross tons.

(b) Greater than 65 feet (19.8 meters) in length.

(c) Carries more than 12 passengers on an international voyage.

(d) Carries more than 150 passengers.

(e) The stability of which is questioned by the OCMI.

§ 171.050 Intact stability requirements for a mechanically propelled or nonself-propelled vessel.

Each vessel must be shown by design calculations to have a metacentric height (GM) in feet (meters) in each condition of loading and operation, that is not less than the value given by the following equation:

$$GM = \frac{Nb}{(K)(W)(\tan[T])}$$

where—

N = number of passengers.

W = displacement of the vessel in long (metric) tons.

T = 14 degrees or the angle of heel at which the deck edge is first submerged, whichever is less.

b = distance in feet (meters) from the centerline of the vessel to the geometric center of the passenger deck on one side of the centerline.

K = 24 passengers/long ton (23.6 passengers/metric ton).

§ 171.055 Intact stability requirements for a monohull sailing vessel or a monohull auxiliary sailing vessel.

(a) Except as specified in paragraph (b) of this section, each monohull sailing vessel and auxiliary sailing vessel must be shown by design calculations to meet the stability requirements in this section.

(b) Additional or different stability requirements may be needed for a vessel of unusual form, proportion, or rig. The additional requirements, if needed, will be prescribed by the Commandant.

(c) Each vessel must have positive righting arms in each condition of loading and operation from—

(1) 0 to at least 70 degrees of heel for service on protected or partially protected waters; and

(2) 0 to at least 90 degrees of heel for service on exposed waters.

(d) Each vessel must be designed to satisfy the following equations:

(1) For a vessel in service on protected or partially protected waters—

$$\frac{1000(W)HZA}{(A)(H)} > X$$

$$\frac{1000(W)HZB}{(A)(H)} > Y$$

$$\frac{1000(W)HZC}{(A)(H)} > Z$$

where—

X = 1.0 long tons/sq. ft. (10.9 metric tons/sq. meter).

Y = 1.1 long tons/sq. ft. (12.0 metric tons/sq. meter).

Z = 1.25 long tons/sq. ft. (13.7 metric tons/sq. meter).

(2) For a vessel on exposed waters—

$$\frac{1000(W)HZA}{(A)(H)} > X$$

$$\frac{1000(W)HZB}{(A)(H)} > Y$$

$$\frac{1000(W)HZC}{(A)(H)} > Z$$

where—

HZA, HZB, and HZC are calculated in the manner specified in paragraph (e) or (f) of this section.

X = 1.5 long tons/sq. ft. (16.4 metric tons/sq. meter).

Y = 1.7 long tons/sq. ft. (18.6 metric tons/sq. meter).

Z = 1.9 long tons/sq. ft. (20.8 metric tons/sq. meter).

A = the projected lateral area in square feet (square meters) of the portion of the vessel above the waterline computed with all sail set and trimmed flat, except that 100% of the fore triangle area may be used in lieu of the area of the individual headsails when determining A if the total area of the headsails exceeds the fore triangle area.

H = the vertical distance in feet (meters) from the center of A to the center of the underwater lateral area or approximately to the one-half draft point.

W = the displacement of the vessel in long (metric) tons.

(e) Except as provided in paragraph (f) of this section, HZA, HZB, and HZC must be determined as follows for each condition of loading and operation:

(1) Plot the righting arm curve on Graphs 171.005 (b), (c), and (d) or (e).

(2) If the angle at which the maximum righting arm occurs is less than 35 degrees, the righting arm curve must be truncated as shown on Graph 171.055(a).

(3) Plot an assumed heeling arm curve on Graph 171.055(b) that satisfies the following conditions:

(i) The assumed heeling arm curve must be defined by the equation—

$$HZ = HZA \cos^2(T)$$

where—

HZ = heeling arm.

HZA = heeling arm at 0 degrees of heel.

T = angle of heel.

(ii) The first intercept shown on Graph 171.055(b) must occur at the angle of heel corresponding to the angle at which deck edge immersion first occurs.

(4) Plot an assumed heeling arm curve on Graph 171.055(c) that satisfies the following conditions:

(i) The assumed heeling arm curve must be defined by the equation—

$$HZ = HZB \cos^2(T)$$

where—

HZ = heeling arm.

HZB = heeling arm at 0 degrees of heel.

T = angle of heel.

(ii) The area under the assumed heeling arm curve between 0 degrees and the downflooding angle or 60 degrees, whichever is less, must be equal to the area under the righting arm curve between the same limiting angles.

(5) Plot an assumed heeling arm curve on Graph 171.055 (d) or (e) that satisfies the following conditions:

(i) The assumed heeling arm curve must be defined by—

$$HZ = HZC \cos^2(T)$$

Where—

HZ = heeling arm.

HZC = heeling arm at 0 degrees of heel.

T = angle of heel.

(ii) The area under the assumed heeling arm curve between the angles of 0 and 90 degrees must be equal to the area under the righting arm curve between 0 degrees and—

(A) 90 degrees if the righting arms are positive to an angle less than or equal to 90 degrees; or

(B) The largest angle corresponding to a positive righting arm but no more than 120 degrees if the righting arms are positive to an angle greater than 90 degrees.

(6) The values of HZA, HZB, and HZC are read directly from Graphs 171.055 (b), (c), and (d) or (e).

(f) For the purpose of this section, the downflooding angle means the static angle from the intersection of the vessel's centerline and waterline in calm

water to the first opening that cannot be rapidly closed watertight.

(g) HZB and, if the righting arms are positive to an angle of 90 degrees or greater, HZC may be computed from the following equation:

$$HZB \text{ (or } HZC) = \frac{I}{([T/2] + 14.3 \sin 2T)}$$

where—

I = the area under the righting arm curve to—

(1) the downflooding angle or 60 degrees, whichever is less, when computing HZB; or

(2) the largest angle corresponding to a positive righting arm or 90 degrees, whichever is greater, but no greater than 120 degrees when computing HZC.

T = the downflooding angle or 60 degrees, whichever is less, when computing HZB or 90 degrees when computing HZC.

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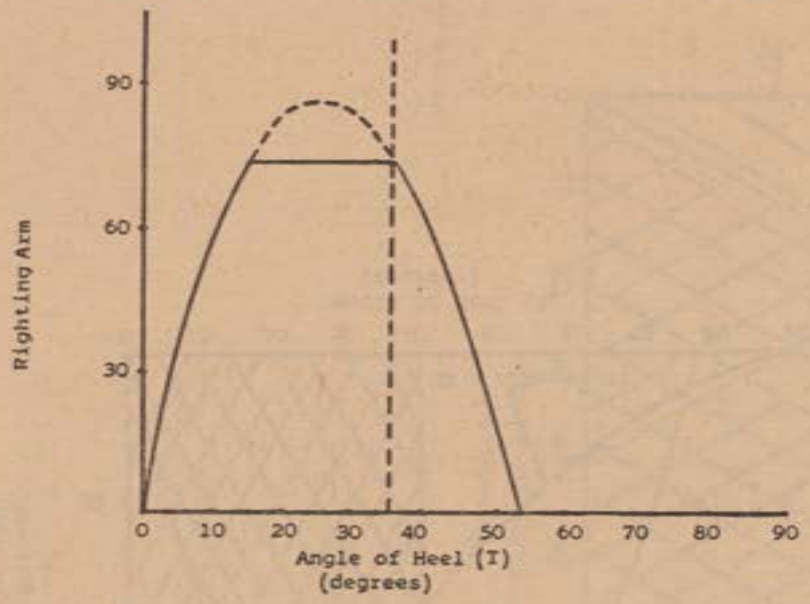
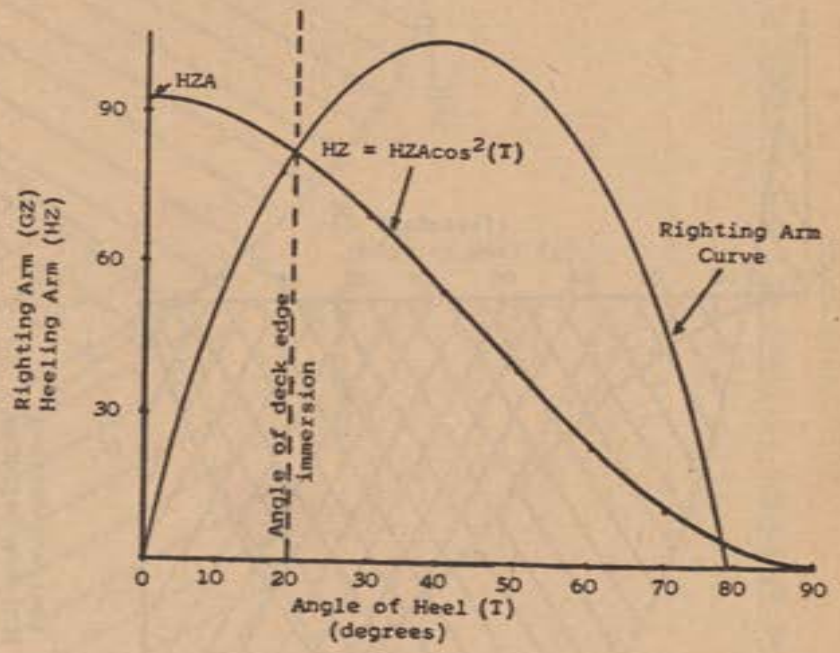
GRAPH 171.055(a)

Truncation of Righting Arm Curve if Maximum Righting Arm Occurs at an Angle of Heel Less Than 35 Degrees



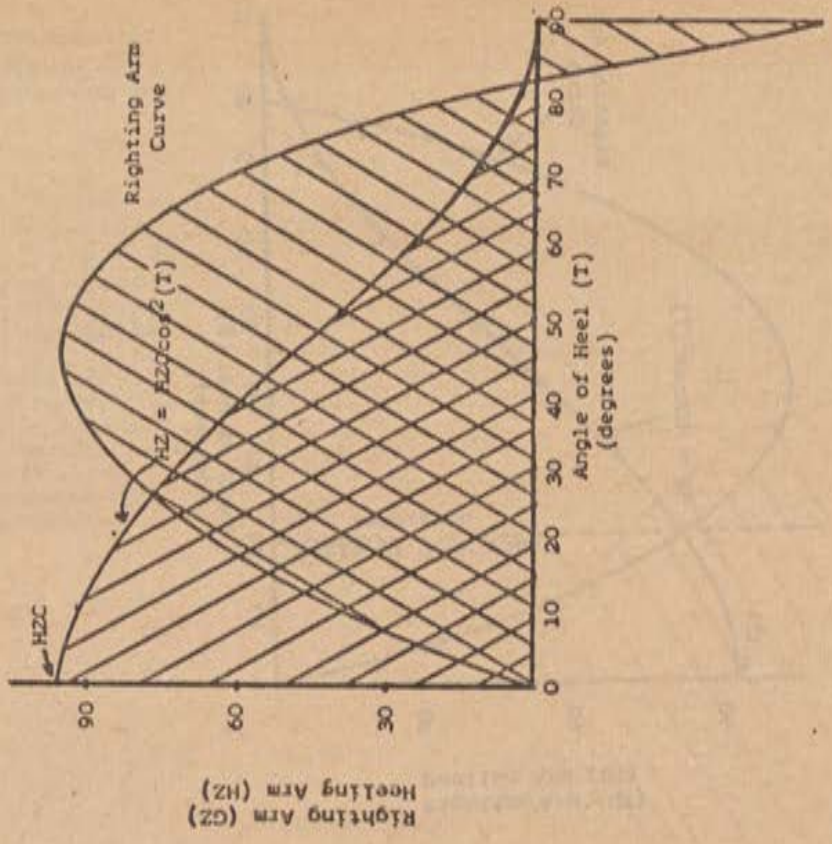
GRAPH 171.055(b)

First Intercept Occurs at the Angle at Which Deck Edge Immersion First Occurs



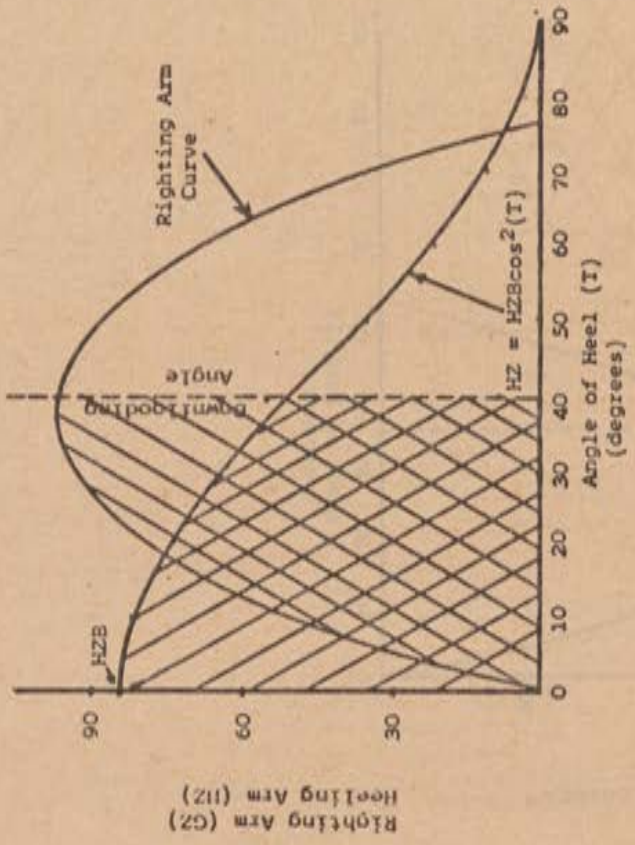
GRAPH 171.055(d)

Righting Arm Curve is not Positive to 90 Degrees and Negative Area is Included



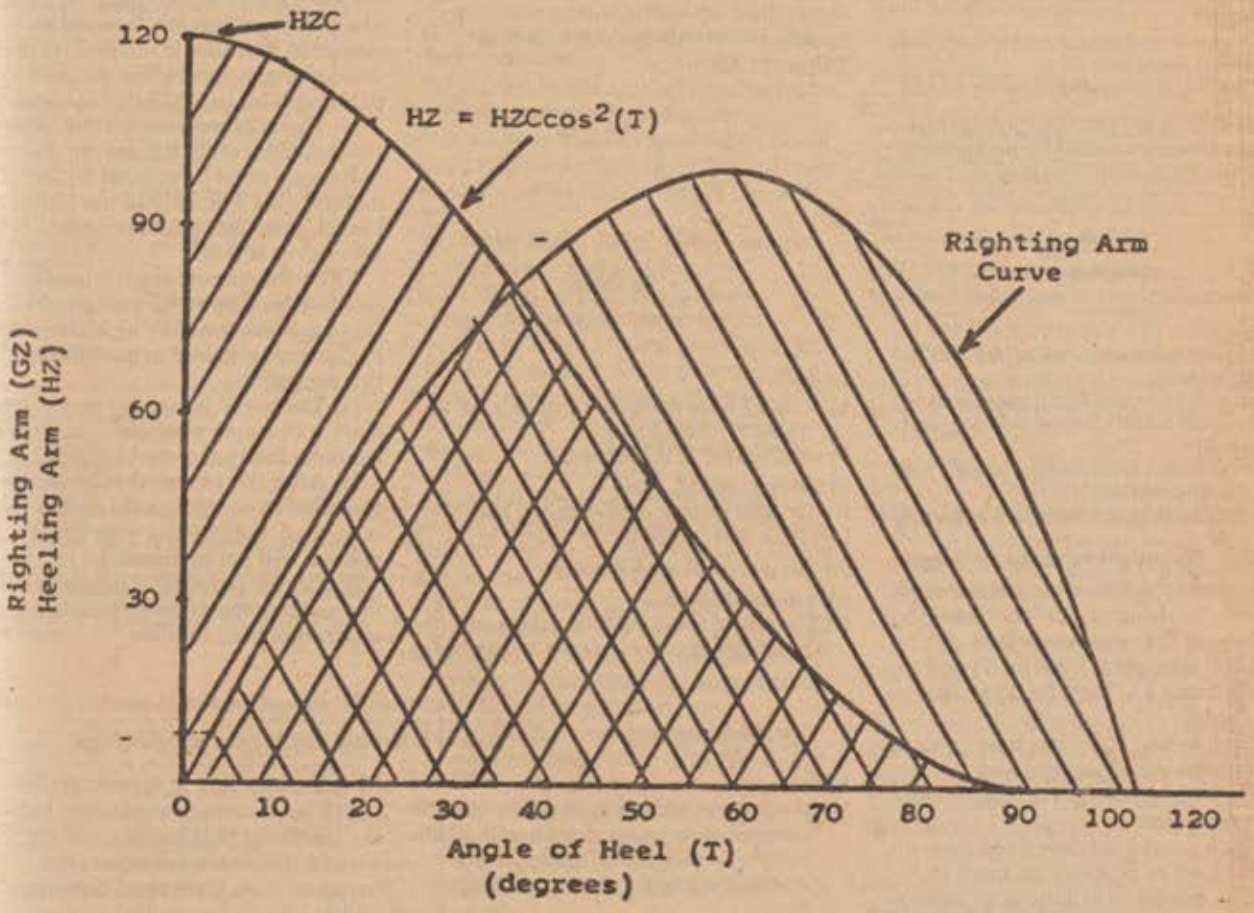
GRAPH 171.055(c)

Shaded Areas are Balanced to the Downflooding Angle



GRAPH 171.055(e)

Righting Arm Curve is Positive Beyond 90 Degrees



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§ 171.057 Intact stability requirements for a sailing catamaran.

(a) A sailing catamaran that operates on protected or partially protected waters must be designed to satisfy the following equation:

$$\frac{0.6(W)B}{2(As)(Hm)} > X$$

where—
B = the distance between hull centerlines in feet (meters).
As = sail area in square feet (square meters).
Hm = the mast height above the deck in feet (meters).
W = the combined displacement of both hulls in lbs. (kilograms).
X = 1.0 lbs./sq. ft. (4.88 kilograms/sq. meter).

(b) A sailing catamaran that operates on exposed waters must be designed to satisfy the following equation:

$$\frac{0.6(W)B}{2(As)(Hm)} > X$$

where—
B = the distance between hull centerlines in feet (meters).
As = sail area in square feet (square meters).
Hm = the mast height above the deck in feet (meters).
W = the combined displacement of both hulls in lbs. (kilograms).
X = 1.5 lbs./sq. ft. (7.32 kilograms/sq. meter).

§ 171.060 Watertight subdivision: General.

(a) Each of the following vessels must be shown by design calculations to comply with the requirements in §§ 171.065 through 171.068 for Type I subdivision or § 171.075 for Type III subdivision:

(1) Each vessel 100 gross tons or more on an international voyage: and

(2) Each vessel 150 gross tons or more in ocean service.

(b) Each vessel not described in paragraph (a) of this section must be shown by design calculations to comply with the requirements in §§ 171.070–171.073 for Type II subdivision.

(c) Except as allowed in § 171.070(c), each vessel must have a collision bulkhead.

(d) Each double-ended ferry that is required by paragraph (c) of this section to have a collision bulkhead must also have a second collision bulkhead. One collision bulkhead must be located in each end of the vessel.

§ 171.065 Subdivision requirements—Type I.

(a) Except as provided in paragraphs (c) and (f) of this section, the separation between main transverse watertight bulkheads on a vessel, other than one described in paragraph (b) of this section, must not exceed—

(floodable length) X (factor of subdivision)

where—
the factor of subdivision is listed under FS in Table 171.065(a).

(b) The factor of subdivision used to determine compliance with paragraph (a) of this section must be the smaller of 0.5 or the value determined from Table 171.065(a) if—

(1) The vessel is 430 feet (131 meters) or more in LBP; and

(2) The greater of the values of Y as determined by the following equations equals or exceeds the value of X in Table 171.065(b):

$$Y = \frac{(M + 2P)}{V}$$

or

$$Y = \frac{(M + 2P1)}{V + P1 - P}$$

where—
M, V, and P have the same value as listed in Table 171.065(a); and
P1 = the smaller of the following:
(i) 0.6LN (0.056LN) where—
N = the total number of passengers; and
L = LBP in feet (meters).
(ii) The greater of the following:
(A) 0.4LN (0.037LN).
(B) The sum of P and the total volume of passenger spaces above the margin line.

(c) The distance A in Figure 171.065 between main transverse watertight bulkheads may exceed the maximum allowed by paragraphs (a) or (b) of this section if each of the distances B and C between adjacent main transverse watertight bulkheads in Figure 171.065 does not exceed the smaller of the following:

(1) The floodable length.

(2) Twice the separation allowed by paragraphs (a) or (b) of this section.

(d) In each vessel 330 feet (100 meters) or more in LBP, one of the main transverse watertight bulkheads aft of the collision bulkhead must be located at a distance from the forward perpendicular that is not greater than the maximum separation allowed by paragraph (a) or (b) of this section.

(e) The minimum separation between two adjacent main transverse watertight bulkheads must be at least 10 feet (3.05 meters) plus 3 percent of the LBP of the vessel, or 35 feet (10.7 meters), whichever is less.

(f) The maximum separation of bulkheads allowed by paragraphs (a) or (b) of this section may be increased by the amount allowed in paragraph (g) of this section if—

(1) The space between two adjacent main transverse watertight bulkheads contains internal watertight volume; and

(2) After the assumed side damage specified in paragraph (h) of this section is applied, the internal watertight volume will not be flooded.

(g) For the purpose of paragraph (f) of this section, the allowable increase in separation is as follows:

$$\text{Increase in separation} = \frac{\text{"total volume of allowed local subdivision"}}{\text{"transverse sectional area at center of compartment"}}$$

where—
"total volume of allowed local subdivision" is determined by calculating the unflooded volume on each side of the centerline and multiplying the smaller volume by two.

(h) The assumed extents of side damage are as follows:

(1) *The longitudinal extent of damage* must be assumed to extend over a length equal to the minimum spacing of bulkheads specified in paragraph (e) of this section.

(2) *The transverse extent of damage* must be assumed to penetrate a distance from the shell plating equal to one-fifth the maximum beam of the vessel and at right angles to the centerline at the level of the deepest subdivision load line.

(3) *The vertical extent of damage* must be assumed to extend vertically from the baseline to the margin line.

(i) The maximum separation between the following bulkheads must not exceed the maximum separation between main transverse watertight bulkheads:

1. The collision bulkhead and the first main transverse watertight bulkhead aft of the collision bulkhead; and

2. The last main transverse watertight bulkhead and the aftermost point on the bulkhead deck.

(j) The minimum separation between the following bulkheads must not be less than the minimum separation between main transverse watertight bulkheads:

(1) The collision bulkhead and the first main transverse watertight bulkhead aft of the collision bulkhead: and

(2) The last main transverse watertight bulkhead and the aftermost point on the bulkhead deck.

Figure 171.065

Combined Separation of Bulkheads

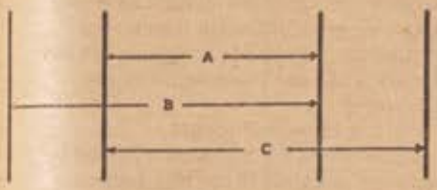


TABLE 171.065(a) (ENGLISH UNITS)

Vessel length (LBP)	Criterion numeral (CN)	FS
Vessel length greater than 392 feet.	CN less than or equal to 23.	A
	CN greater than 23 and less than 123.	F1
	CN greater than or equal to 123.	B
Vessel length greater than or equal to 200 feet and less than or equal to 392 feet.	CN less than or equal to S.	1
	CN greater than S and less than 123.	F2
	CN greater than or equal to 123.	B
Vessel length less than 200 feet.		1

Where—
FS = the factor of subdivision.
$CN = 60[(M + 2P)/V] + 30000(N/L^2)$
$A = (190/(L - 160)) + 0.18$
$B = (94/(L - 85)) + 0.18$
$F1 = A - ((A - B)(CN - 23)/100)$
$S = (10904 - 25L)/48$
$F2 = 1 - ((1 - B)(CN - S)/(123 - S))$
L = the length of the vessel (LBP) in feet.
M = the sum of the volume of the machinery space and the volumes of any fuel tanks which are located above the inner bottom forward or aft of the machinery space in cubic feet.
P = the volume of passenger spaces below the margin line.
V = the volume of the vessel below the margin line.
N = the number of passengers that the vessel is to be certificated to carry.

TABLE 171.065(a) (METRIC UNITS)

Vessel length (LBP)	Criterion numeral (CN)	FS
Vessel length greater than 120 meters.	CN less than or equal to 23.	A
	CN greater than 23 and less than 123.	F1
	CN greater than or equal to 123.	B
Vessel length greater than or equal to 61 meters and less than or equal to 120 meters.	CN less than or equal to S.	1
	CN greater than S and less than 123.	F2
	CN greater than or equal to 123.	B
Vessel length less than 61 meters.		1

Where—
FS = the factor of subdivision.
$CN = 60[(M + 2P)/V] + 2787(N/L^2)$
$A = (58/(L - 49)) + 0.18$
$B = (29/(L - 26)) + 0.18$
$F1 = A - ((A - B)(CN - 23)/100)$
$S = (3323.5 - 25L)/14.6$
$F2 = 1 - ((1 - B)(CN - S)/(123 - S))$
L = the length of the vessel (LBP) in meters.
M = the sum of the volume of the machinery space and the volumes of any fuel tanks which are located above the inner bottom forward or aft of the machinery space in cubic meters.
P = the volume of passenger spaces below the margin line.
V = the volume of the vessel below the margin line.
N = the number of passengers that the vessel is to be certificated to carry.

TABLE 171.065(b).—Table of X

Vessel LBP in feet (meters)	X[1]
430 (131)	1.336
440 (134)	1.285
450 (137)	1.230
460 (140)	1.174
470 (143)	1.117
480 (146)	1.060
490 (149)	1.002
500 (152)	0.944
510 (155)	0.885
520 (158)	0.826
530 (162)	0.766
540 (165)	0.706
550 (168)	0.645
554 (169) and up	0.625

[1] Interpolate for intermediate values.

§ 171.066 Calculation of permeability for Type I subdivision.

(a) Except as prescribed in paragraph (b) of this section, the following permeabilities must be used when doing the calculations required to demonstrate compliance with §§ 171.065(a), (b), and (c):

(1) When doing calculations required to demonstrate compliance with §§ 171.065(a) and (b), the uniform average permeability given by the formulas in Table 171.066 must be used.

(2) When doing calculations required to demonstrate that compartments on opposite sides of a main transverse watertight bulkhead that bounds the machinery space comply with § 171.065(c), the mean of the uniform average permeabilities determined from Table 171.066 for the two compartments must be used.

(b) If an average permeability can be calculated that is less than that given by the formulas in Table 171.066, the lesser value may be substituted if approved by the Commander (mmt). When determining this lesser value, the following permeabilities must be used:

(1) 95% for passenger, crew, and all other spaces that, in the full load condition, normally contain no cargo, stores, provisions, or mail.

(2) 60% for cargo, stores, provisions, or mail spaces.

(3) 85% for spaces containing machinery.

(4) Values approved by the Commander (mmt) for double bottoms, oil fuel, and other tanks.

(c) In the case of unusual arrangements, the Commander (mmt) may require a detailed calculation of average permeability for the portions of the vessel forward or aft of the machinery spaces. When doing these calculations, the permeabilities specified in paragraph (b) of this section must be used.

(d) When calculating permeability, the total volume of the 'tween deck spaces between two adjacent main transverse watertight bulkheads that contains any passenger or crew space must be regarded as passenger space volume, except that the volume of any space that is completely enclosed in steel buldheads and is not a crew or passenger space may be excluded.

TABLE 171.066.—TABLE OF UNIFORM AVERAGE PERMEABILITIES

Location	Uniform average permeability
Machinery space	$85 + \frac{10(a - c)}{v}$
Volume forward of machinery space	$63 + \frac{35(a)}{v}$
Volume aft of machinery space	$63 + \frac{35(a)}{v}$

For each location specified in this table—
a = volume below the margin line of all spaces that, in the full load condition, normally contain no cargo, baggage, stores, provisions, or mail.
c = volume below the margin line of the cargo, stores, provisions, or mail spaces within the limits of the machinery space.
v = total volume below the margin line.

§ 171.067 Treatment of stepped and recessed bulkheads in Type I subdivision.

(a) For the purpose of this section—

(1) The main transverse watertight bulkhead immediately forward of a stepped bulkhead is referred to as bulkhead 1; and

(2) The main transverse watertight bulkhead immediately aft of the stepped bulkhead is referred to as bulkhead 3.

(b) If a main transverse watertight bulkhead is stepped, it and bulkheads 1 and 3 must meet one of the following conditions:

(1) The separation between bulkheads 1 and 3 must not exceed the following:

(i) If the factor of subdivision (FS) determined from § 171.065 (a) or (b) is greater than 0.9, the distance between bulkheads 1 and 3 must not exceed the maximum separation calculated to demonstrate compliance with § 171.065.

(ii) If the factor of subdivision is 0.9 or less, the distance between bulkheads 1 and 3 must not exceed 90% of the floodable length or twice the maximum bulkhead separation calculated to demonstrate compliance with § 171.065, whichever is smaller.

(2) Additional watertight bulkheads must be located as shown in Figure 171.067(a) so that distances A, B, C, and D, illustrated in Figure 171.067(a), satisfy the following:

(i) Distances A and B must not exceed the maximum spacing allowed by § 171.065.

(ii) Distances C and D must not be less than the minimum separation prescribed by § 171.065(e).

(3) The distance A, illustrated in Figure 171.067(b), must not exceed the maximum length determined in § 171.065

corresponding to a margin line taken 3 inches (7.6 cm) below the step.

(c) A main transverse bulkhead may not be recessed unless all parts of the recess are inboard from the shell of the vessel a distance A as illustrated in Figure 171.067(c).

(d) Any part of a recess that lies outside the limits defined in paragraph (c) of this section must be treated as a step in accordance with paragraph (b) of this section.

(e) The distance between a main transverse watertight bulkhead and the transverse plane passing through the nearest portion of a recessed bulkhead must be greater than the minimum separation specified by § 171.065(e).

(f) If a main transverse bulkhead is stepped or recessed, equivalent plane bulkheads must be used in the calculations required to demonstrate compliance with § 171.065.

BILLING CODE 4910-14-M

Figure 171.067(c)

Limits of a Recess

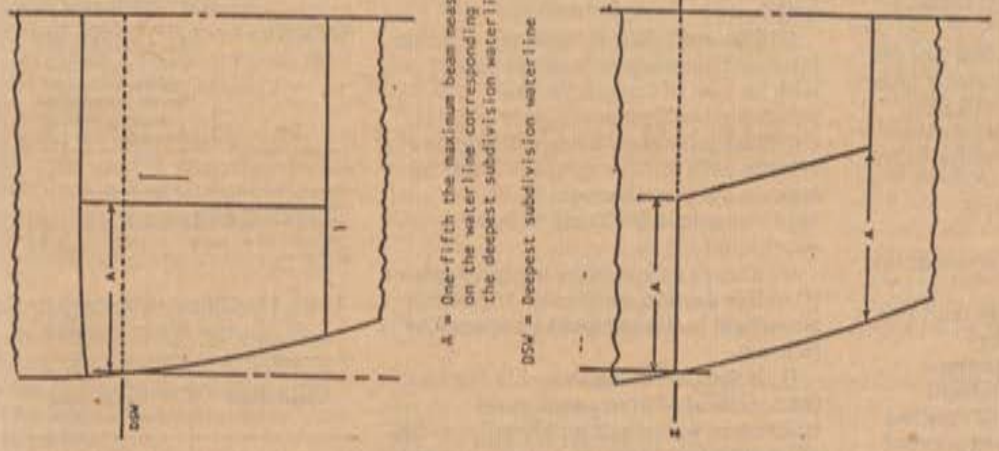


Figure 171.067(a)

Additional Subdivision

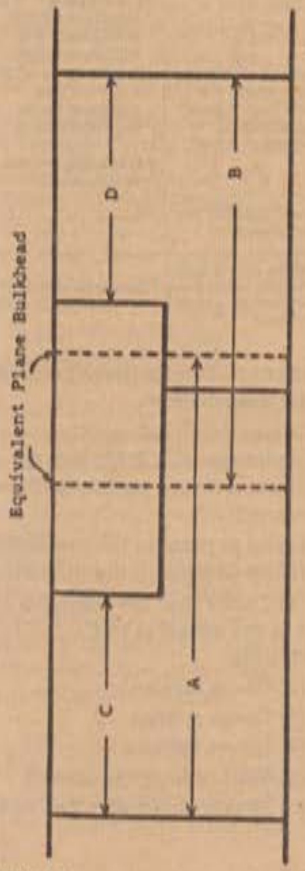
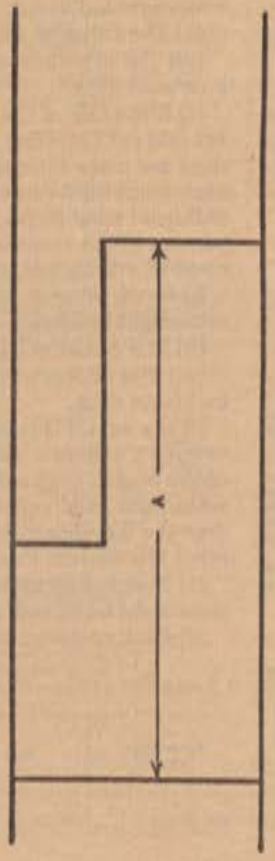


Figure 171.067(b)

Margin Line Below Step



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§ 171.068 Special considerations for Type I subdivision for vessels on short international voyages.

(a) The calculations done to demonstrate compliance with § 171.065 for a vessel that makes short international voyages and is permitted under § 75.10–10 of this chapter to carry a number of persons on board in excess of the lifeboat capacity must—

(1) Assume the uniform average permeabilities given in Table 171.068 in lieu of those in Table 171.066; and

(2) Use a factor of subdivision (FS) that is the smaller of the following:

(i) The value from Table 171.065(a).

(ii) 0.50.

(b) For a vessel less than 300 feet (91 meters) in length, the Commander (mmt) may approve the separation of main transverse watertight bulkheads greater than that permitted by paragraph (a) of this section if—

(1) The shorter separation is impracticable; and

(2) The separation is the smallest that is practicable.

(c) In the case of ships less than 180 feet (55 meters) in length, the Commander (mmt) may approve a further relaxation in the bulkhead spacing. However, in no case may the separation be large enough to prevent the vessel from complying with the flooding requirements for Type II subdivision in § 171.070.

TABLE 171.068—TABLE OF UNIFORM AVERAGE PERMEABILITIES

Location	Uniform average permeability
Machinery Space	$85 + \frac{10\,(a-c)}{v}$
Volume Forward of Machinery Space	$95 - \frac{35(b)}{v}$
Volume Aft of Machinery Space	$95 - \frac{35(b)}{v}$

For each location specified in this table—

a = volume below the margin line of all spaces that, in the full load condition, normally contain no cargo, baggage, stores, provisions, or mail.

b = volume below the margin line and above the tops of floors, inner bottoms, or peak tanks of coal or oil fuel bunkers, chain lockers, fresh water tanks, and of all spaces that, in the full load condition, normally contain stores, baggage, mail, cargo, or provisions. If cargo holds are not occupied by cargo, no part of the cargo space is to be included in this volume.

c = volume below the margin line of the cargo, stores, provisions, or mail spaces within the limits of the machinery space.

v = total volume below the margin line.

§ 171.070 Subdivision requirements—Type II.

(a) Each vessel, except a ferry vessel, must be designed so that, while in each condition of loading and operation, it complies with the standard of flooding specified in Table 171.070(a).

(b) Except as provided in paragraph (c), each ferry vessel must be designed so that, while in each condition of loading and operation, it meets the standard of flooding specified in Table 171.070(b).

(c) A ferry vessel described in paragraph (d) of this section need not meet the standard of flooding specified in Table 171.070(b), except that a ferry vessel in Great Lakes service must at least have a collision bulkhead.

(d) Paragraph (c) of this section applies to a ferry vessel that—

(1) Is 150 feet (46 meters) or less in length; and

(2) Has sufficient air tankage, or other internal buoyancy to float the vessel with no part of the margin line submerged when the vessel is completely flooded. If foam is used to comply with this paragraph, it must be installed in accordance with the requirements in § 170.245 of this subchapter.

(e) Except as specified in paragraph (f) of this section, each main transverse watertight bulkhead must be spaced as follows:

(1) If the LBP of the vessel is 143 feet (43.5 meters) or more, each main transverse watertight bulkhead must be at least 10 feet (3 meters) plus 3 percent of the vessel's LBP from—

(i) Every other main transverse watertight bulkhead;

(ii) The collision bulkhead; and

(iii) The aftermost point on the bulkhead deck.

(2) If the LBP of the vessel is less than 143 feet (43.5 meters) and the vessel does not make international voyages, each main transverse watertight bulkhead must be no less than 10 percent of the vessel's LBP or 6 feet (1.8 meters), whichever is greater, from—

(i) Every other main transverse watertight bulkhead;

(ii) The collision bulkhead; and

(iii) The aftermost point on the bulkhead deck.

(f) If a vessel is required by § 171.060 to have a collision bulkhead in each end of the vessel, then each main transverse watertight bulkhead must be no less than the distance specified in paragraph (e) of this section from—

(1) Every other main transverse watertight bulkhead; and

(2) Each collision bulkhead.

TABLE 171.070(a).—STANDARD OF FLOODING

Passengers carried	Part of vessel	Standard of flooding (compartments)
400 Or less	All	1
401 to 600	All of the vessel forward of the first MTWB aft of the collision bulkhead	2
	All remaining portions of the vessel	1
601 to 800	All of the vessel forward of the first MTWB that is aft of a point 40% of the vessel's LBP aft of the forward perpendicular	2
	All remaining portions of the vessel	1
801 to 1000	All of the vessel forward of the first MTWB that is aft of a point 60% of the vessel's LBP aft of the forward prependicular	2
	All remaining portions of the vessel	1
More than 1000	All	2

Where for this table—

"MTWB" means main transverse watertight bulkhead; and "Standard of Flooding" is explained in § 171.017 of this subchapter.

TABLE 171.070(b).—STANDARD OF FLOODING FOR FERRY VESSELS

Vessel length	Part of vessel	Standard of flooding (compartments)
150 feet (46 meters) or less.	All	1
Greater than 150 feet (46 meters) and less than or equal to 200 feet (61 meters).	All of the vessel forward of the first MTWB aft of the collision bulkhead.	2
	All of the vessel aft of the first MTWB forward of the aft peak bulkhead.	2
	All remaining portions of the vessel.	1
Greater than 200 feet (61 meters).	All	2

Where for this table—

"MTWB" means main transverse watertight bulkhead; and "Standard of Flooding" is explained in § 171.017 of this subchapter.

§ 171.072 Calculation of permeability for Type II subdivision.

When doing calcualtions to show compliance with § 171.070, the following uniform average permeabilities must be assumed:

(a) 85 percent in the machinery space.

(b) 60 percent in the following spaces:

(1) Tanks that are normally filled when the vessel is in the full load condition.

(2) Chain lockers.

(3) Cargo spaces.

(4) Stores spaces.

(5) Mail or baggage spaces.

(c) 95 percent in all other spaces.

§ 171.073 Treatment of stepped and recessed bulkheads in Type II subdivision.

(a) A main transverse watertight bulkhead may not be stepped unless additional watertight bulkheads are located as shown in Figure 171.067(a) so that the distances A, B, C, and D illustrated in Figure 171.067(a) comply with the following:

(1) A and B must not exceed the maximum bulkhead spacing that permits compliance with § 171.070; and

(2) C and D must not be less than the minimum spacing specified in § 171.070(e).

(b) A main transverse watertight bulkhead may not be recessed unless all parts of the recess are inboard from the shell of the vessel as illustrated in Figure 171.067(c).

(c) If a main transverse watertight bulkhead is recessed or stepped, an equivalent plane bulkhead must be used in the calculations required by § 171.070.

§ 171.075 Subdivision requirements—Type III.

(a) Each vessel must be shown by design calculations to comply with the requirements of Regulations 1, 2, 3, 4, 6, and 7 of the Annex to Resolution A.265 (VIII) of the International Maritime Organization (IMO).

(b) International Maritime Organization Resolution A.265 (VIII) is incorporated by reference into this part.

(c) As used in IMO Resolution A.265 (VIII), "Administration" means the Commandant, U.S. Coast Guard.

§ 171.080 Damage stability standards for vessels with Type I or Type II subdivision.

(a) *Calculations.* Each vessel with Type I or Type II subdivision must be shown by design calculations to meet the survival conditions in paragraph (d) of this section in each condition of loading and operation assuming the extent and character of damage specified in paragraph (b) of this section.

(b) *Extent and character of damage.* For the purpose of paragraph (a) of this section, design calculations must assume that the damage—

(1) Has the character specified in Table 171.080(a); and

(2) Consists of a penetration having the dimensions specified in Table 171.080(a) except that, if the most disabling penetration would be less than the penetration described in the table, the smaller penetration must be assumed.

(c) *Permeability.* When doing the calculations required in paragraph (a) of this section, the permeability of each space must be calculated in a manner approved by the Commander (mmt) or be taken from Table 171.080(c).

(d) *Damage survival.* A vessel is presumed to survive assumed damage if it meets the following conditions in the final stage of flooding:

(1) On a vessel required to survive assumed damage with a longitudinal extent of 10 feet (3 meters) plus 0.03L, the final angle of equilibrium must not exceed 7 degrees after equalization, except that the final angle may be as large as 15 degrees if—

(i) The vessel is not equipped with equalization or is equipped with fully automatic equalization; and

(ii) The Commander (mmt) approves the vessel's range of stability in the damaged condition.

(2) On a vessel required to survive assumed damage with a longitudinal extent of 20 feet (6.1 meters) plus 0.04L, the angle of equilibrium must not exceed 15 degrees after equalization.

(3) The margin line may not be submerged at any point.

(4) The vessel's metacentric height (GM) must be at least 2 inches (5 cm) when the vessel is in the upright position.

(e) *Equalization.* (1) Equalization systems on vessels of 150 gross tons or more in ocean service must meet the following:

(i) Equalization must be automatic except that the Commander (mmt) may approve other means of equalization if—

(A) It is impracticable to make equalization automatic; and

(B) Controls to cross-flooding equipment are located above the bulkhead deck.

(ii) Equalization must be fully accomplished within 15 minutes after damage occurs.

(2) Equalization on vessels under 150 gross tons in ocean service and on all vessels in other than ocean service must meet the following:

(i) Equalization must not depend on the operation of valves.

(ii) Equalization must be fully accomplished within 15 minutes after damage occurs.

(3) The estimated maximum angle of heel before equalization must be approved by the Commander (mmt).

TABLE 171.080(a).—EXTENT AND CHARACTER OF DAMAGE

Vessel designator [1]	Longitudinal penetration [2]	Transverse penetration [3] [4]	Vertical penetration	Character of Damage
Z	10 feet (3 meters) plus .03L or 35 feet (10.7 meters) whichever is less (5).	B/5	from the baseline upward without limit.	Assumes no damage to any main transverse watertight bulkhead.
Y	10 feet (3 meters) plus .03L or 35 feet (10.7 meters) whichever is less.	B/5	From the baseline upward without limit.	Assumes damage to no more than one main transverse watertight bulkhead.
X	10 feet (3 meters) plus .03L or 35 feet (10.7 meters whichever is less.	B/5	from the baseline upward without limit.	Assumes damage to no more than one main transverse watertight bulkhead.
	20 feet (6.1 meters) plus 0.04L	B/5	From the top of the double bottom upward without limit.	Assumes damage to no more than one main transverse watertight bulkhead.
W	20 feet (6.1 meters) plus 0.04L	B/5	From the baseline upward without limit.	Assumes damage to at least two main transverse watertight bulkheads.

(1) W,X,Y, and Z are determined from Table 171.080(b).
(2) L=LBP of the vessel in feet (meters).
(3) B=the beam of the vessel in feet (meters) measured at or below the deepest subdivision load line as defined in 171.010(a) except that, when doing calculations for a vessel that operates only on inland waters or a ferry vessel, B may be taken as the mean of the maximum beam on the bulkhead deck and the maximum beam at the deepest subdivision load line.
(4) The transverse penetration is applied inboard from the side of the vessel, at right angles to the centerline, at the level of the deepest subdivision load line.
(5) .1L or 6 feet (1.8 meters) whichever is greater for vessels described in § 171.070(a)(2).

TABLE 171.808(b)

Vessel category	Vessel designator
Vessels with type I subdivision and a factor of subdivision as determined from § 171.065 (a) or (b) of 0.33 or less.	W.
Vessels with type I subdivision and a factor of subdivision as determined from § 171.065 (a) or (b) greater than 0.33 and less than or equal to 0.50.	X.
Vessels with Type II subdivision that are required to meet a two compartment standard of flooding.	Y.
All other vessels	Z.

TABLE 171.080(c).—PERMEABILITY

Spaces and tanks	Permeability (percent
Cargo, coal, stores	60
Accommodations	95.
Machinery	85.
Tanks	0 or 95 [1]

[1] Whichever value results in the more disabling condition.

§ 171-082 Damage stability standards for vessels with Type III subdivision.

(a) Each vessel must be shown by design calculations to comply with the requirements of Regulations 1 and 5 of the Annex to Resolution A.265 (VIII) of

the International Maritime Organization (IMO).

(b) International Maritime Organization Resolution A.265 (VIII) is incorporated by reference into this part.

(c) As used in IMO Resolution A.265 (VIII), "Administration" means the Commandant, U.S. Coast Guard.

(d) Section 56.50-57 of this chapter contains additional requirements on bilge pumping and piping systems.

Subpart D—Additional Subdivision Requirements

§ 171.085 Collision bulkhead.

(a) Paragraphs (b) through (g) of this section apply to each vessel of 100 gross tons or more and paragraphs (h) and (i) of this section apply to each vessel that is less than 100 gross tons.

(b) The portion of the collision bulkhead that is below the bulkhead deck must be watertight.

(c) Each portion of the collision bulkhead must be at least—

(1) 5 percent of the LBP from the forward perpendicular in a motor vessel; and

(2) 5 feet (1.52 meters) from the forward perpendicular in a steam vessel.

(d) The collision bulkhead must be no more than 10 feet (3 meters) plus 5 percent of the LBP from the forward perpendicular.

(e) The collision bulkhead must extend to the deck above the bulkhead deck if the vessel—

(1) Is in ocean service; and

(2) Has a superstructure that extends from a point forward of the collision bulkhead to a point at least 15 percent of the LBP aft of the collision bulkhead.

(f) The collision bulkhead required by paragraph (e) of this section must have the following characteristics:

(1) The portion of the collision bulkhead above the bulkhead deck must be weathertight.

(2) If the portion of the collision bulkhead above the bulkhead deck is not located directly above the collision bulkhead below the bulkhead deck, then the bulkhead deck between must be weathertight.

(g) Each opening in the collision bulkhead must—

(1) Be located above the bulkhead deck; and

(2) Have a watertight closure.

(h) Each collision bulkhead—

(1) Must extend to the weather deck;

(2) May not have watertight doors in it; and

(3) May have penetrations and openings that—

(i) Are located as high and as far inboard as practicable; and

(ii) Except as provided in paragraph (i) of this section, have means to make them watertight.

(i) Each vessel that is not required to comply with a one or two compartment standard of flooding may have an opening that connot be made watertight in the collision bulkhead below the bulkhead deck if—

(1) The lowest edge of the opening is not more than 12 inches (30.5 centimeters) below the bulkhead deck; and

(2) There are at least 36 inches (92 centimeters) of intact collision bulkhead below the lower edge of the opening.

(j) Each portion of the colision bulkhead must be—

(1) At least 5 percent of the LBP from the forward perpendicular; and

(2) No more than 15 percent of the LBP from the forward perpendicular.

§ 171.090 Aft peak bulkhead.

(a) Each of the following vessels must have an aft peak bulkhead:

(1) Each vessel 100 gross tons or more on an international voyage.

(2) Each other vessel of more than 150 gross tons.

(b) Except as specified in paragraph (c) of this section, each portion of the aft peak bulkhead below the bulkhead deck must be watertight.

(c) A vessel may have an aft peak bulkhead that does not intersect the bulkhead deck if approved by the Commander (mmt).

§ 171.095 Machinery space bulkhead.

(a) This section applies to each vessel of 100 gross tons or more.

(b) Except as provided in paragraph (c) of this section, a vessel required to have Type I or II subdivision must have enough main transverse watertight bulkheads to separate the machinery space from the remainder of the vessel. All portions of these bulkheads must be watertight below the bulkhead deck.

(c) Compliance with paragraph (b) of this section is not required if the vessel has sufficient air tanks or other internal buoyancy to maintain the vessel afloat while in the full load condition when all compartments and all other tanks are flooded. If foam is used to comply with this paragraph, it must be installed in accordance with the requirements in § 170.245 of this subchapter.

§ 171.100 Shaft tunnels and stern tubes.

(a) Stern tubes in each of the following vessels must be enclosed in watertight spaces:

(1) Each vessel of 100 gross tons or more on an international voyage.

(2) Each other vessel over 150 gross tons in ocean or Great Lakes service.

(3) Each vessel under 100 gross tons that carries more than 12 passengers on an international voyage.

(b) The watertight seal in the bulkhead between the stern tube space and the machinery space must be located in a watertight shaft tunnel. The vessel must be designed so that the margin line will not be submerged when the watertight shaft tunnel is flooded.

(c) If a vessel has two or more shaft tunnels, they must be connected by a watertight passageway.

(d) if a vessel has two or less shaft tunnels, only one door is permitted between them and the machinery space. If a vessel has more then two shaft tunnels, only two doors are permitted between them and the machinery space.

§ 171.105 Double bottoms.

(a) This section applies to each vessel that carries more than 12 passengers on an international voyage and all other vessels that are—

(1) 100 gross tons or more; and

(2) In ocean or Great Lakes service.

(b) Each vessel over 165 feet (50 meters) and under 200 feet (61 meters) in LBP must have a double bottom that extends from the forward end of the machinery space to the fore peak bulkhead.

(c) Each vessel over 200 feet (61 meters) and under 249 feet (76 meters) in LBP must have a double bottom that extends from the fore peak bulkhead to the forward end of the machinery space and a double bottom that extends from the aft peak bulkhead to the aft end of the machinery space.

(d) Each vessel 249 feet (76 meters) in LBP and upward must have a double bottom that extends from the fore to the aft peak bulkhead.

(e) Each double bottom required by this section must be at least the depth at the centerline given by the following equation:

$D = 18.0 + 0.05(L)$ inches

$D = 45.7 + 0.417(L)$ centimeters

where—

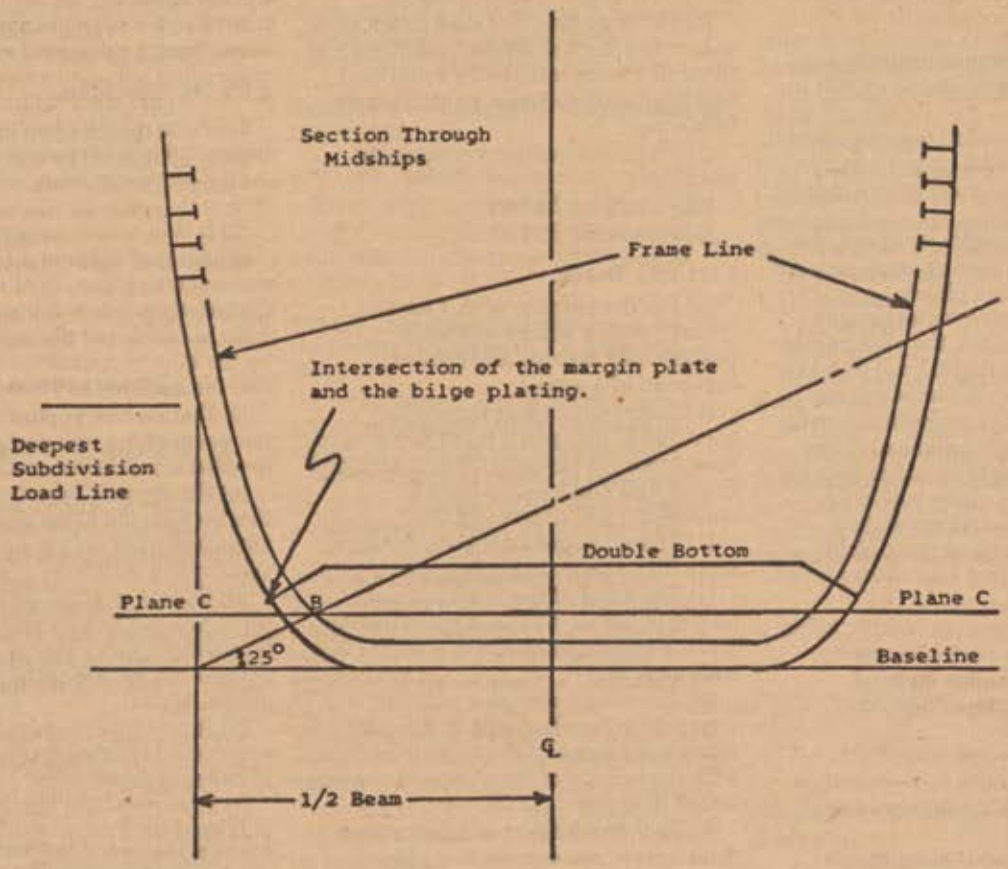
D = the depth at the centerline in inches (centimeters).

L = LBP in feet (meters).

(f) The line formed by the intersection of the margin plate and the bilge plating must be above the horizontal plane C, illustrated in Figure 171.105, at all points. The horizontal plane C is defined by point B, located, as shown in Figure 171.105, in the midships section.

Figure 171.105

Lower Limit of the Intersection of Margin Plate and Bilge Plating



(g) A double bottom is not required in a tank that is integral with the hull of a vessel if—

(1) The tank is used exclusively for the carriage of liquids; and

(2) It is approved by the Commander (mmt).

(h) A double bottom is not required in any part of a vessel where the separation of main transverse watertight bulkheads is governed by a factor of subdivision less than or equal to 0.50 if—

(1) The Commander (mmt) approves;

(2) The vessel makes short international voyages; and

(3) The vessel is permitted by § 75.10-10 of this chapter to carry a number of passengers in excess of the lifeboat capacity.

§ 171.106 Wells in double bottoms.

(a) This section applies to each vessel that has a well installed in a double bottom required by § 171.105.

(b) Except as provided in paragraph (c) of this section—

(1) The depth of a well must be at least 18 inches (45.7 cm) less than the depth of the double bottom at the centerline; and

(2) The well may not extend below the horizontal plane C illustrated in Figure 171.105.

(c) A well may extend to the outer bottom of a double bottom at the after end of a shaft tunnel.

§ 171.108 Manholes in double bottoms.

(a) The number of manholes in the inner bottom of a double bottom required by § 171.105 must be reduced to the minimum required for adequate access.

(b) Each manhole must have a cover that can be—

(1) Made watertight; and

(2) Protected from damage by cargo or coal.

§ 171.109 Watertight floors in double bottoms.

If a vessel is required to have a double bottom, a watertight transverse division must be located in the double bottom under each main transverse watertight bulkhead or as near as practicable to the main transverse watertight bulkhead. If a vessel also has duct keels, the transverse divisions need not extend across them.

Subpart E—Penetrations and Openings in Watertight Bulkheads

§ 171.110 Specific applicability.

(a) Sections 171.111, 171.112, and 171.113 apply to each vessel of 100 gross tons or more.

(b) Section 171.114 applies to each vessel under 100 gross tons.

§ 171.111 Penetrations and openings in watertight bulkheads in vessels of 100 gross tons or more.

(a) Except as provided in paragraph (f) of this section, each opening in a watertight bulkhead must have a means to close it watertight.

(b) Except in a machinery space, the means for closing each opening may not be by bolted portable plates.

(c) If a main transverse watertight bulkhead is penetrated, the penetration must be made watertight. Lead or other heat sensitive materials must not be used in a system that penetrates a main transverse watertight bulkhead if fire damage to this system would reduce the watertight integrity of the bulkhead.

(d) A main transverse watertight bulkhead must not be penetrated by valves or cocks unless they are a part of a piping system.

(e) If a pipe, scupper, or electric cable passes through a main transverse watertight bulkhead, the opening through which it passes must be watertight.

(f) A main transverse watertight bulkhead may not have non-watertight penetrations below the bulkhead deck unless—

(1) The margin line is more than 9 inches (23 centimeters) below the bulkhead deck at the intersection of the margin line and the line formed by the intersection of the plane of the main transverse watertight bulkhead and the shell; and

(2) Making all penetrations watertight is impracticable.

(g) Penetrations approved in accordance with paragraph (f) of this section must comply with the following:

(1) The bottom of the penetration must not be located—

(i) More than 24 inches (61 centimeters) below the bulkhead deck; nor

(ii) Less than 9 inches (23 centimeters) above the margin line.

(2) The penetration must not be located outboard from the centerline more than ¼ of the beam of the vessel measured—

(i) On the bulkhead deck; and

(ii) In the vertical plane of the penetration.

(h) No doors, manholes, or other access openings may be located in a watertight bulkhead that separates two cargo spaces or a cargo space and a permanent or reserve bunker.

§ 171.112 Watertight door openings.

(a) The opening for a watertight door must be located as high in the bulkhead and as far inboard as practicable.

(b) No more than one door, other than a door to a bunker or shaft alley, may be fitted in a main transverse watertight bulkhead within spaces containing the following:

(1) Main and auxiliary propulsion machinery.

(2) Propulsion boilers

(3) Permanent bunkers.

§ 171.113 Trunks.

(a) For the purpose of this section, "trunk" means a large enclosed passageway through any deck or bulkhead of a vessel.

(b) Each trunk, other than those specified in paragraph (c) of this section, must have a watertight door at each end except that a trunk may have a watertight door at one end if—

(1) The trunk does not pass through more than one main compartment;

(2) The sides of the trunk are not nearer to the shell than is permitted by § 171.067(c) for the sides of a recess in a bulkhead; and

(3) The vessel complies with the subdivision requirements in this part when the volume of the trunk is included with the volume of the compartment into which it opens.

(c) Each trunk that provides access from a crew accommodation space and that passes through a main transverse watertight bulkhead must comply with the following:

(1) The trunk must be watertight.

(2) The trunk, if used for passage at sea, must have at least one end above the margin line and access to the other end of the trunk must be through a watertight door.

(3) The trunk must not pass through the first main transverse watertight bulkhead aft of the collision bulkhead.

§ 171.114 Penetrations and openings in watertight bulkheads in a vessel less than 100 gross tons.

(a) Penetrations and openings in watertight bulkheads must—

(1) Be kept as high and as far inboard as practicable; and

(2) Have means to make them watertight.

(b) Watertight bulkheads must not have sluice valves.

(c) Each main transverse watertight bulkhead must extend to the bulkhead deck.

Subpart F—Openings in the Side of a Vessel Below the Bulkhead or Weather Deck

§ 171.115 Specific applicability.

(a) Sections 171.116, 171.117, and 171.118 apply to each vessel of 100 gross tons or more.

(b) Section 171.119 applies to each vessel under 100 gross tons.

§ 171.116 Port lights.

(a) A vessel may have port lights below the bulkhead deck if—

(1) It is greater than 150 gross tons; and

(2) It is in ocean service.

(b) All port lights in a space must be non-opening if the sill of any port light in that space is below a line that—

(1) Is drawn parallel to the line formed by the intersection of the bulkhead deck and the shell of the vessel; and

(2) Has its lowest point 2½ percent of the beam of the vessel above the deepest subdivision load line.

(c) For the purpose of paragraph (b) of this section, the beam of the vessel is measured at or below the deepest subdivision load line.

(d) Except as provided in paragraph (e) of this section, no port light may be located in a space that is used exclusively for the carriage of cargo, stores, or coal.

(e) A port light may be located in a space used alternately for the carriage of cargo or passengers.

(f) Each port light installed below the bulkhead deck must conform to the following requirements:

(1) The design of each port light must be approved by the Commander (mmt).

(2) Each non-opening port light must be watertight.

(3) Each opening port light must be constructed so that it can be secured watertight.

(4) Each opening port light must be installed with at least one bolt that is secured by a round slotted or recessed nut that requires a special wrench to remove. The nut must be protected by a sleeve or guard to prevent it from being removed with ordinary tools.

§ 171.117 Dead covers.

(a) Except as provided in paragraph (b) of this section, each port light with the sill located below the margin line must have a hinged, inside dead cover.

(b) The dead cover on a port light located in an accommodation space for passengers other than steerage passengers may be portable if—

(1) The apparatus for stowing the dead cover is adjacent to its respective port light;

(2) The port light is located above the deck that is immediately above the deepest subdivision load line;

(3) The port light is aft of a point one-eighth of the LBP of the vessel from the forward perpendicular; and

(4) The port light is above a line that—

(i) Is parallel to the line formed by the intersection of the bulkhead deck and the side of the vessel; and

(ii) Has its lowest point at a height of 12 feet (3.66 meters) plus 2½ percent of the beam of the vessel above the deepest subdivision load line.

(c) For the purpose of paragraph (b) of this section, the beam of the vessel is measured at or below the deepest subdivision load line.

(d) Each dead cover must be designed so that—

(1) It can be secured watertight; and

(2) It is not necessary to release any of the special nuts required in § 171.116(f)(4) in order to secure the dead cover.

§ 171.118 Automatic ventilators and side ports.

(a) An automatic ventilator must not be fitted in the side of a vessel below the bulkhead deck unless approved by the Commander (mmt).

(b) The design and construction of each gangway, cargo and coaling port, and similar opening in the side of a vessel must be approved by the Commander (mmt).

(c) In no case may the lowest point of any gangway, cargo and coaling port, or similar opening be below the deepest subdivision load line.

§ 171.119 Openings below the weather deck in the side of a vessel less than 100 gross tons.

(a) If a vessel operates on exposed or partially protected waters, an opening port light is not permitted below the weather deck unless—

(1) The sill is at least 30 inches (76.2 centimeters) above the deepest subdivision load line; and

(2) It has an inside, hinged dead cover.

(b) Except for engine exhausts, each inlet or discharge pipe that penetrates the hull below a line drawn parallel to and at least 6 inches (15.2 centimeters) above the deepest subdivision load line must have means to prevent water from entering the vessel if the pipe fractures or otherwise fails.

(c) A positive action valve or cock that is located as close as possible to the hull is an acceptable means for complying with paragraph (b) of this section.

(d) If an inlet or discharge pipe is inaccessible, the means for complying with paragraph (b) of this section must be a shut-off valve that is—

(1) Operable from the weather deck or any other accessible location above the bulkhead deck; and

(2) Labeled at the operating point for identity and direction of closing.

(e) Any connecting device or valve in a hull penetration must not be cast iron.

(f) Each plug cock in an inlet or discharge pipe must have a means, other than a cotter pin, to prevent its loosening or removal from the body.

Subpart G—Watertight Integrity Above the Margin Line

§ 171.120 Specific applicability.

Each vessel that is 100 gross tons or more must comply with § 171.122 and each vessel under 100 gross tons must comply with § 171.124.

171.122 Watertight integrity above the margin line in a vessel of 100 gross tons or more.

(a) For the purpose of this section, a partial watertight bulkhead is one in which all portions are not watertight.

(b) Except as provided in paragraph (d) of this section, the bulkhead deck or a deck above it must be weathertight.

(c) Partial watertight bulkheads or web frames must be located in the immediate vicinity of main transverse watertight bulkheads to minimize as much as practicable the entry and spread of water above the bulkhead deck.

(d) If a partial watertight bulkhead or web frame is located on the bulkhead deck in order to comply with paragraph (c) of this section, the joint between it and the shell and bulkhead deck must be watertight.

(e) If a partial watertight bulkhead does not line up with a main transverse watertight bulkhead below the bulkhead deck, the bulkhead deck between them must be watertight.

(f) Each opening in an exposed weather deck must—

(1) Have a coaming that complies with the height requirements in Table 171.124; and

(2) Have a means for closing it weathertight.

(g) Each port light located between the bulkhead deck and the next deck above the bulkhead deck must have an inside dead cover than can be secured watertight.

§ 171.124 Watertight integrity above the margin line in a vessel less than 100 gross tons.

(a) Each hatch exposed to the weather must be watertight, except that the following hatches may be weathertight:

(1) Each hatch on a watertight trunk that extends at least 12 inches (30.5 cm) above the weather deck.

(2) Each hatch in a cabin top.

(3) Each hatch on a vessel that operates only on protected waters.

(b) Each hatch cover must—

(1) Have securing devices; and

(2) Be attached to the hatch frame or coaming by hinges, captive chains, or other devices to prevent its loss.

(c) Each hatch that provides access to crew or passenger accomodations must be operable from either side.

(d) Except as provided in paragraph (e) of this section, a weathertight door with permanent watertight coamings that comply with the height requirements in Table 171.124 must be provided for each opening located in a deck house or companionway that—

(1) Gives access into the hull; and

(2) Is located in—

(i) A cockpit;

(ii) A well; or

(iii) An exposed location on a flush deck vessel.

(e) If an opening in a location specified in paragraph (d) of this section is provided with a Class 1 watertight door, the height of the watertight coaming need only be sufficient to accommodate the door.

TABLE 171.124

Route	Height of coaming
Exposed or partially protected.	6 inches (15.2 centimeters).
Protected	3 inches (7.6 centimeters).

Subpart H—Drainage of Weather Decks

§ 171.130 Specific applicability.

(a) Section 171.135 applies to each vessel that is 100 gross tons or more.

(b) Sections 171.140, 171.145, 171.150, and 171.155 apply to each vessel under 100 gross tons.

§ 171.135 Weather deck drainage on a vessel of 100 gross tons or more.

The weather deck must have freeing ports, open rails, and scuppers, as necessary, to allow rapid clearing of water under all weather conditions.

§ 171.140 Drainage of a flush deck vessel.

(a) Except as provided in paragraph (b) of this section, the weather deck on a flush deck vessel must be watertight and have no obstruction to overboard drainage.

(b) Each vessel with a flush deck may have solid bulwarks in the foward one-third length of the vessel if—

(1) The bulwarks do not form a well enclosed on all sides; and

(2) The foredeck of the vessel has sufficient sheer to insure drainage aft.

§ 171.145 Drainage of a vessel with a cockpit.

(a) Except as follows, the cockpit must be watertight:

(1) A cockpit may have companionways if they comply with § 171.124(d).

(2) A cockpit may have ventilation openings along its inner periphery if—

(i) The vessel operates only on protected or partially protected waters;

(ii) The ventilation openings are located as high as possible in the side of the cockpit; and

(iii) The height of the ventilation opening does not exceed 2 inches (5 cm).

(b) The cockpit must be designed to be self-bailing.

(c) Scuppers installed in a cockpit must be located to allow rapid clearing of water in all probable conditions of list and trim.

(d) Scuppers must have a combined area of at least the area given by either of the following equations:

$A = 0.1(D)$ square inches

$A = 6.94(D)$ Square centimeters

Where—

A = the combined area of the scuppers in square inches (square Centimeters).

D = the area of the cockpit in square feet (square meters).

(e) The cockpit deck of a vessel that operates on exposed or partially protected waters must be at least 10 inches (25.4 cm) above the deepest subdivision load line unless the vessel complies with—

(1) The intact stability requirements of § 171.050;

(2) The Type II subdivision requirements in §§ 171.070, 171.072, and 171.073; and

(3) The damage stability requirements in § 171.080.

(f) The cockpit deck of all vessels that do not operate on exposed or partially protected waters must be located as high above the deepest subdivision load line as practicable.

§ 171.150 Drainage of a vessel with a well deck.

(a) Each well deck on a vessel must be watertight.

(b) Except as provided in paragraph (c) and (d) of this section, the area required for freeing ports in the bulwarks that form a well must be determined as follows:

(1) If a vessel operates on exposed or partially protected waters, it must have at least 100 percent of the freeing port area derived from Table 171.150.

(2) If a vessel operates only on protected or partially protected waters and complies with the requirements in the following sections for a vessel that operates on exposed waters, it must have at least 50 percent of the freeing port area derived from Table 171.150:

(i) The intact stability requirements of § 171.030 or § 171.050 and § 170.170 of this subchapter.

(ii) The subdivision requirements of §§ 171.040, 171.043, or 171.070.

(iii) The damage stability requirements of § 171.080.

(3) If a vessel operates only on protected waters, the freeing port area must be at least equal to the scupper area required by § 171.145(d) for a cockpit of the same size.

(c) The freeing ports must be located to allow rapid clearing of water in all probable conditions of list and trim.

(d) If a vessel that operates on exposed or partially protected waters does not have free drainage from the foredeck aft, then the freeing port area must be derived from Table 171.150 using the entire bulwark length rather than the bulwark length in the after ⅔ of the vessel as stated in the Table.

TABLE 171.150

Height of solid bulwark in inches (centimeters)	Freeing port area in square inches per foot (square centimeters per meter) of bulwark length in the after ⅔ of the vessel. (1)
6(15)	2(42.3)
12(30)	4(84.7)
18(46)	8(169.3)
24(61)	12(253.9)
30(76)	16(338.6)
36(91)	20(423.2)

(1) Intermediate values of freeing port area can be obtained by interpolation.

§ 171.155 Drainage of an open boat.

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

PART 172—SPECIAL RULES PERTAINING TO BULK CARGOES

Subpart A—General

Sec.

172.005 Applicability.

Subpart B—Bulk Grain [Reserved]

Subpart C—Special Rules Pertaining to a Barge That Carries a Cargo Regulated Under Subchapter D of This Chapter

172.047 Specific applicability.
172.050 Damage stability.

Subpart D—Special Rules Pertaining to a Vessel That Carries a Cargo Regulated Under 33 CFR Part 157

172.060 Specific applicability.
172.065 Damage stability.

Subpart E—Special Rules Pertaining to a Barge That Carries a Hazardous Liquid Regulated Under Subchapter O of this Chapter

Sec.

172.080 Specific applicability.
172.085 Hull type.
172.087 Cargo loading assumptions.
172.090 Intact transverse stability.
172.095 Intact longitudinal stability.
172.100 Watertight integrity.
172.103 Damage stability.
172.104 Character of damage.
172.105 Extent of damage.
172.110 Survival conditions.

Subpart F—Special Rules Pertaining to a Ship That Carries a Hazardous Liquid Regulated Under Subchapter O of This Chapter

172.125 Specific applicability.
172.127 Definitions.
172.130 Calculations.
172.133 Character of damage.
172.135 Extent of damage.
172.140 Permeability of spaces.
172.150 Survival conditions.

Subpart G—Special Rules Pertaining to a Ship That Carries a Bulk Liquefied Gas Regulated Under Subchapter O of This Chapter

172.155 Specific applicability.
172.160 Definitions.
172.165 Intact stability calculations.
172.170 Damage stability calculations.
172.175 Character of damage.
172.180 Extent of damage.
172.185 Permeability of spaces.
172.195 Survival conditions.
172.205 Local damage.

Authority: Sect. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 2, 49 Stat. 888 as amended (46 U.S.C. 88a); sec. 5, 49 Stat. 1384 as amended (46 U.S.C. 369); R.S. 4405, as amended (46 U.S.C. 375); sec. 3, 70 Stat. 152 as amended (46 U.S.C. 390b); sec. 5, Pub. L. 95–474, 92 Stat. 1480 as amended (46 U.S.C. 391a); sec 1, Pub. L. 85–739, 72 Stat. 833, as amended (46 U.S.C. 404); R.S. 4462, as amended (46 U.S.C. 416); sec. 2, Pub. L. 96–453, 94 Stat. 207 (46 U.S.C. 1295f(c)(2)); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 3, 68 Stat. 675 (50 U.S.C. 198); sec. 6, 80 Stat. 938 (49 U.S.C. 1655(b)); E.O. 12234, 45 FR 58801; 49 CFR 1.46.

Subpart A—General

172.005 Applicability.

This Part applies to each vessel that carries one of the following cargoes in bulk:

(a) Grain.

(b) A cargo listed in Table 30.25–1 of this chapter.

(c) A cargo regulated under 33 CFR Part 157.

(d) A cargo listed in Table 151.01–10(b) of this chapter.

(e) A cargo listed in Table I of Part 153 of this chapter.

(f) A cargo listed in Table 4 of Part 154 of this chapter.

Subpart B—Bulk Grain [Reserved]

Subpart C—Special Rules Pertaining to a Barge That Carries a Cargo Regulated Under Subchapter D of This Chapter

§ 172.047 Specific applicability.

This section applies to each tank barge that carries, in independent tanks described in 151.15–1(b) of this chapter, a cargo listed in Table 30.25–1 of this chapter that is a—

(a) Liquefied flammable gas; or

(b) Flammable liquid that has a Reid vapor pressure in excess of 25 pounds per square inch (172.4 KPa).

§ 172.050 Damage stability.

(a) Each tank barge is assigned a hull type number by the Commandant in accordance with 32.63–5 of this chapter. The requirements in this section are specified according to the hull type number assigned.

(b) Except as provided in paragraph (c) of this section, each Type I and II barge hull must have a watertight weather deck.

(c) If a Type I or II barge hull has an open hopper, the fully loaded barge must be shown by design calculations to have at least 2 inches (50mm) of positive GM when the hopper space is flooded to the height of the weather deck.

(d) When demonstrating compliance with paragaph (c) of this section, credit may be given for the buoyancy of the immersed portion of cargo tanks if the tank securing devices are shown by design calculations to be strong enough to hold the tanks in place when they are subjected to the buoyant forces resulting from the water in the hopper.

(e) Each tank barge must be shown by design calculations to have at least 2 inches (50 mm) of positive GM in each condition of loading and operation after assuming the damage specified in paragraph (f) of this section is applied in the following locations:

(1) *Type I barge hull not in an integrated tow.* If a Type I hull is required and the barge is not a box barge designed for use in an integrated tow, design calculations must show that the barge hull can survive damage at any location including on the intersection of a transverse and longitudinal watertight bulkhead.

(2) *Type I barge hull in an integrated tow.* If a Type I hull is required and the barge is a box barge designed for operation in an integrated tow, design calculations must show that the barge can survive damage—

(i) To any location on the bottom of the tank barge except on a transverse watertight bulkhead; and

(ii) To any location on the side of the tank barge including on a transverse watertight bulkhead.

(3) *Type II hull.* If a Type II hull is required, design calculations must show that the barge can survive damage to any location except to a transverse watertight bulkhead.

(f) For the purpose of paragraph (e) of this section—

(1) Design calculations must include both side and bottom damage, applied separately; and

(2) Damage must consist of the most disabling penetration up to and including penetrations having the following dimensions:

(i) Side damage must be assumed to be as follows:

(A) Longitudinal extent—6 feet (183 centimeters).

(B) Transverse extent—30 inches (76 centimeters).

(C) Vertical extent—from the baseline upward without limit.

(ii) Bottom damage must be assumed to be 15 inches (38.1 centimeters) from the baseline upward.

Subpart D—Special Rules Pertaining to a Vessel That Carries a Cargo Regulated Under 33 CFR Part 157

§ 172.060 Specific Applicability.

This section applies to each U.S. tank vessel that must comply with 33 CFR Part 157, Subpart B.

§ 172.065 Damage stability.

(a) *Definitions.* As used in this section, "Length" or "L" means load line length (LLL).

(b) *Calculations.* Each tank vessel must be shown by design calculations to meet the survival conditions in paragraph (g) of this section in each condition of loading and operation except as specified in paragraph (c) of this section, assuming the damage specified in paragraph (d) of this section.

(c) *Conditions of loading and operation.* The design calculations required by paragraph (b) of this section need not be done for ballast conditions if the vessel is not carrying oil, other than oily residues, in cargo tanks.

(d) *Character of damage.* (1) If a tank vessel is longer than 738 feet (225 metes) in length, design calculations must show that it can survive damage at any location.

(2) If a tank vessel is longer than 492 feet (150 meters) in l ength, but not longer than 738 feet (225 meters), design calculations must show that it can survive damage at any location except the transverse bulkheads bounding an aft machinery space. The machinery space is calculated as a single floodable compartment.

(3) If a tank vessel is 492 feet (150 meters) or less in length, design calculations must show that it can survive damage—

(i) At any location between adjacent main transverse watertight bulkheads except to an aft machinery space;

(ii) To a main transverse watertight bulkhead spaced closer than the longitudinal extent of collision penetration specified in Table 172.065(a) from another main transverse watertight bulkhead; and

(iii) To a main transverse watertight bulkhead or a transverse watertight bulkhead bounding a side tank or double bottom tank if there is a step or a recess in the transverse bulkhead that is longer than 10 feet (3.05 meters) and that is located within the extent of penetration of assumed damage. The step formed by the after peak bulkhead and after peak tank top is not a step for the purpose of this regulaton.

1(e) *Extent of damage.* For the purpose of paragraph (b) of this section—

(1) Design calculations must include both side and bottom damage, applied separately; and

(2) Damage must consist of the penetrations having the dimensions given in Table 172.065(a) except that, if the most disabling penetrations would be less than the penetrations described in this paragraph, the smaller penetration must be assumed.

(f) *Permeability of spaces.* When doing the calculations required in paragraph (b) of this section—

(1) The permeability of a floodable space, other than a machinery space, must be as listed in Table 172.065(b);

(2) Calculations in which a machinery space is treated as a floodable space must be based on an assumed machinery space permeability of 85%, unless the use of an assumed permeability of less than 85% is justified in detail; and

(3) If a cargo tank would be penetrated under the assumed damage, the cargo tank must be assumed to lose all cargo and refill with salt water, or fresh water if the vessel operates solely on the Great Lakes, up to the level of the tank vessel's final equilibrium waterline.

(g) *Survival conditions.* A vessel is presumed to survive assumed damage if it meets the following conditions in the final stage of flooding:

(1) *Final waterline.* The final waterline, in the final condition of sinkage, heel, and trim, must be below the lower edge of an opening through which progressive flooding may take place, such as an air pipe, or an opening

that is closed by means of a weathertight door or hatch cover. This opening does not include an opening closed by a—

(i) Watertight manhole cover;

(ii) Flush scuttle;

(iii) Small watertight cargo tank hatch cover that maintains the high integrity of the deck;

(iv) Class 1 door in a watertight bulkhead within the superstructure;

(v) Remotely operated sliding watertight door; or

(vi) Side scuttle of the non-opening type.

(2) *Heel angle.* The maximum angle of heel must not exceed 25 degrees, except that this angle may be increased to 30 degrees if no deck edge immersion occurs.

(3) *Range of stability.* Through an angle of 20 degrees beyond its position of equilibrium after flooding, a tank vessel must meet the following conditions:

(i) The righting arm curve must be positive.

(ii) The maximum righting arm must be at least 3.94 inches (10 cm).

(iii) Each submerged opening must be weathertight.

(4) *Progressive flooding.* Pipes, ducts or tunnels within the assumed extent of damage must be either—

(i) Equipped with arrangements such as stop check valves to prevent progressive flooding to other spaces with which they connect; or

(ii) Assumed in the design calculations required in paragraph (b) of this section to permit progressive flooding to the spaces with which they connect.

(h) *Buoyancy of superstructure.* For the purpose of paragraph (b) of this section, the buoyancy of any superstructure directly above the side damage is to be disregarded. The unflooded parts of superstructures beyond the extent of damage may be taken into consideration if they are separated from the damaged space by watertight bulkheads and no progressive flooding of these intact spaces takes place.

TABLE 172.065(a).—EXTENT OF DAMAGE

Collision Penetration	
Longitudinal extent	0.495L$^{2/3}$ or 47.6 feet ((⅛)L$^{2/3}$ or 14.5m) whichever is shorter.
Transverse extent [1]	B/5 or 37.74 feet (11.5m) which is shorter.
Vertical extent	From the baseline upward without limit.
Grounding Penetration at the Forward End but Excluding Any Damage Aft of a Point 0.3L Aft of the Forward Perpendicular	
Longitudinal extent	0.495L$^{2/3}$ or 47.6 feet ((⅛)L$^{2/3}$ or 14.5m) whichever is shorter.
Transverse extent	B/6 or 32.81 feet (10m) whichever is shorter but not less than 16.41 feet (5m).
Vertical extent from the baseline.	B/15 or 19.7 feet (6m) whichever is shorter.
Grounding Penetration at Any Other Longitudinal Position	
Longitudinal extent	L/10 or 16.41 feet (5m) whichever is shorter.
Transverse extent	16.41 feet (5m).
Vertical extent from the baseline.	B/15 or 19.7 feet (6m) whichever is shorter.

[1] Damage applied inboard from the vessel's side at right angles to the centerline at the level of the summer load line assigned under Subchapter E of this chapter.

TABLE 172.065(b).—Permeability

Spaces and tanks	Permeability (percent)
Storeroom spaces	60.
Accommodation spaces	95.
Voids	95.
Consumable liquid tanks	95 or 0.[1]
Other liquid tanks	95 or 0.[2]

[1] Whichever results in the more disabling condition.
[2] If tanks are partially filled, the permeability must be determined from the actual density and amount of liquid carried.

Subpart E—Special Rules Pertaining to a Barge That Carries a Hazardous Liquid Regulated Under Subchapter O of This Chapter

§ 172.080 Specific applicability.

This subpart applies to each tank barge that carries a cargo listed in Table 151.01–10(b) of this chapter.

§ 172.085 Hull type.

If a cargo listed in Table 151.05 of Part 151 of this chapter is to be carried, the tank barge must be at least the hull type specified in Table 151.05 of this chapter for that cargo.

§ 172.087 Cargo loading assumptions.

(a) The calculations required in this subpart must must be done for cargo weights and densities up to and including the maximum that is to be endorsed on the Certificate of Inspection in accordance with § 151.04–1(c) of this chapter.

(b) For each condition of loading and operation, each cargo tank must be assumed to have its maximum free surface.

§ 172.090 Intact transverse stability.

(a) Except as provided in paragraph (b) of this section, each tank barge must be shown by design calculations to have a righting arm curve with the following characteristics:

(1) If the tank barge is in river service, the area under the righting arm curve must be at least 5 foot-degrees (1.52 meter-degrees) up to the smallest of the following angles:

(i) The angle of maximum righting arm.

(ii) The downflooding angle.

(2) If the tank barge is in lakes, bays and sounds or Great Lakes summer service, the area under the righting arm curve must be at least 10 foot-degrees (3.05 meter-degrees) up to the smallest of the following angles:

(i) The angle of maximum righting arm.

(ii) The downflooding angle.

(3) If the tank barge is in ocean or Great Lakes winter service, the area under the righting arm curve must be at least 15 foot-degrees (4.57 meter-degrees) up to the smallest of the following angles:

(i) The angle of maximum righting arm.

(ii) The downflooding angle.

(b) If the vertical center of gravity of the cargo is below the weather deck at the side of the tank barge amidships, it must be shown by design calculations that the barge has at least the following metacentric height (GM) in feet (meters) in each condition of loading and operation:

$$GM = \frac{(K)(B)}{fe}$$

where—
K = 0.3 for river service.
K = 0.4 for lakes, bays and sounds and Great Lakes summer service.
K = 0.5 for ocean and Great Lakes winter service.
B = beam in feet (meters).
fe = effective freeboard in feet (meters).

(c) the effective freeboard is given by—

fe = f + fa ; or

fe = d, whichever is less.

where—
f = the freeboard to the deck edge amidships in feet (meters).
fa = (1.25)(a/L)((2b/B)–1)(h); or
fa = h, whichever is less.
where—
a = trunk length in feet (meters).
L = LOA in feet (meters)
b = breadth of a watertight trunk in feet (meters).
B = beam of the barge in feet (meters).
h = height of a watertight trunk in feet (meters).
d = draft of the barge in feet (meters).

(d) For the purpose of this section, downflooding angle means the static angle from the intersection of the vessel's centerline and waterline in calm water to the first opening that does not close watertight automatically.

§ 172.095 Intact longitudinal stability.

Each tank barge must be shown by design calculations to have a longitudinal metacentric height (GM) in feet (meters) in each condition of loading and operation, at least equal to the following:

$$GM = \frac{0.02(L)^2}{d}$$

where—
L=LOA in feet (meters).
d=draft in feet (meters).

§ 172.100 Watertight integrity.

(a) Except as provided in paragraph (b) of this section, each Type I or II hopper barge hull must have a weathertight weather deck.

(b) If a Type I or II barge hull has an open hopper, the fully loaded barge must be shown by design calculations to have at least 2 inches (50 mm) of positive GM when the hopper space is flooded to the height of the weather deck.

(c) When doing the calculations required by this section, credit may be given for the buoyancy of the immersed portion of cargo tanks if the tank securing devices are shown by design calculations to be strong enough to hold the tanks in place when they are subjected to the buoyant forces resulting from the water in the hopper.

§ 172.103 Damage stability.

Each tank barge must be shown by design calculations to meet the survival conditions in § 172.110 assuming the damage specified in § 172.104 to the hull type specified in Table 151.05 of Part 151 of this chapter.

§ 172.104 Character of damage.

(a) *Type I barge hull not in an integrated tow.* If a Type I hull is required and the barge is not a box barge designed for use in an integrated tow, design calculations must show that the barge can survive damage at any location including the intersection of a transverse and a longitudinal bulkhead.

(b) *Type I barge hull in an integrated tow.* If a Type I barge hull is required and the barge is a box barge designed for operation in an integrated tow, design calculations must show that the barge can survive damage—

(1) At any location on the bottom of the tank barge except on a transverse watertight bulkhead; and

(2) At any location on the side of the tank barge including on a transverse watertight bulkhead.

(c) *Type II barge hull.* If a Type II hull is required, design calculations must show that a barge can survive damage at any location except on a transverse watertight buklkhead.

§ 172.105 Extent of damage.

For the purpose of § 172.103, design calculations must include both side and bottom damage, applied separately. Damage must consist of the most disabling penetration up to and including penetrations having the following dimensions:

(a) Side damage must be assumed to be as follows:

(1) Longitudinal extent—6 feet (183 centimeters).

(2) Transverse extent—30 inches (76 centimeters).

(3) Vertical extent—from the baseline upward without limit.

(b) Bottom damage must be assumed to be 15 inches (38 centimeters) from the baseline upward.

§ 172.110 Survival conditions.

(a) Paragraphs (c) and (d) of this section apply to a hopper barge and paragraphs (e) through (i) apply to all other tank barges.

(b) A barge is presumed to survive assumed damage if it meets the following conditions in the final stage of flooding:

(c) A hopper barge must not heel or trim beyond the angle at which—

(1) the deck edge is first submerged; or

(2) If the barge has a coaming that is at least 36 inches (91.5 centimeters) in height, the intersection of the deck and the coaming is first submerged, except as provided in paragraph (d) of this section.

(d) A hopper barge must not heel beyond the angle at which the deck edge is first submerged by more than "fa" as defined in § 172.090(c).

(e) Except as provided in paragraphs (h) and (i) of this section, each tank barge must not heel beyond the angle at which—

(1) The deck edge is first submerged; or

(2) If the barge has one or more watertight trunks, the deck edge is first submerged by more than "fa" as defined in § 172.090(c).

(f) Except as provided in paragraphs (h) and (i) of this section, a tank barge must not trim beyond the angle at which—

(1) The deck edge is first submerged; or

(2) If the barge has one or more watertight trunks, the intersection of the deck and the trunk is first submerged.

(g) If a tank barge experiences simultaneous heel and trim, the trim requirements in paragraph (f) of this section apply only at the centerline.

(h) Except as provided in paragraph (i) of this section, in no case may any part of the actual cargo tank top be underwater in the final condition of equilibrium.

(i) If a barge has a "step-down" in hull depth on either or both ends and all cargo tank openings are located on the higher deck level, the deck edge and tank top in the stepped-down area may be submerged.

Subpart F—Special Rules Pertaining to a Ship That Carries a Hazardous Liquid Regulated Under Subchapter O of This Chapter

§ 172.125 Specific applicability.

This subpart applies to each tankship that carries a cargo listed in Table I of Part 153 of this chapter, except that it does not apply to a tankship whose cargo tanks are clean and gas free.

§ 172 Definitions.

"Length" or "L" means load line length (LLL).

§ 172.130 Calculations.

(a) Each tankship must be shown by design calculations to meet the survival conditions in § 172.150 in each condition of loading and opoeration assuming the damage specified in § 172.133 for the hull type prescribed in Part 153 of this chapter.

(b) If a cargo listed in Table I of Part 153 of this chapter is to be carried, the vessel must be at least the hull type specified in Part 153 of this chapter for that cargo.

§ 172.133 Character of damage.

(a) If a type I hull is required, design calculations must show that the vessel can survive damage at any location.

(b) If a type II hull is required, design calculations must show that a vessel—

(1) Longer than 492 feet (150 meters) in length can survive damage at any location; and

(2) Except as specified in paragraph (d) of this section, 492 feet (150 meters) or less in length can survive damage at any location.

(c) If a Type III hull is required, design calculations must show that a vessel—

(1) Except as specified in paragraph (d) of this section, 410 feet (125 meters) in length or longer can survive damage at any location; and

(2) Less than 410 feet (125 meters) in length can survive damage at any location except to an aft machinery space.

(d) A vessel described in paragraph (b)(2) or (c)(1) of this section need not be designed to survive damage to a main transverse watertight bulkhead

bounding an aft machinery space. The machinery space is calculated as a single floodable compartment.

§ 172.135 Extent of damage.

For the purpose of § 172.133—

(a) Design calculations must include both side and bottom damage, applied separately; and

(b) Damage must consist of the penetrations having the dimensions given in Table 172.135 except that, if the most disabling penetrations would be less than the penetrations given in Table 172.135, the smaller penetration must be assumed.

TABLE 172.135.—EXTENT OF DAMAGE

Collision Penetration	
Longitudinal extent	0.495L ⅝ or 47.6 feet ((⅛)L ⅝ or 14.5m) whichever is shorter.
Transverse extent[1]	B/5 or 37.74 feet (11.5m)[2] whichever is shorter.
Vertical extent	From the baseline upward without limit.
Grounding Penetration At the Forward End But Excluding Any Damage Aft of a Point 0.3L Aft of the Forward Perpendicular	
Longitudinal extent	L/10
Transverse extent	B/6 or 32.81 feet (10m) whichever is shorter.
Vertical extent from the baseline upward.	B/15 or 19.7 feet (6m) whichever is shorter.
Grounding Penetration At Any Other Longitudinal Position	
Longitudinal extent	L/10 or 16.41 feet (5m) whichever is shorter.
Transverse extent	16.41 feet (5m)
Vertical extent from the baseline upward.	B/15 or 19.7 feet (6m) whichever is shorter.

[1] Damage applied inboard from the vessel's side at right angles to the centerline at the level of the summer load line assigned under Subchapter E of this chapter.
[2] B is measured amidships.

§ 172.140 Permeability of spaces.

(a) When doing the calculations required in § 172.130, the permeability of a floodable space other than a machinery space must be as listed in Table 172.060(b).

(b) Calculations in which a machinery space is treated as a floodable space must be based on an assumed machinery space permeability of 0.85, unless the use of an assumed permeability of less than 0.85 is justified in detail.

(c) If a cargo tank would be penetrated under the assumed damage, the cargo tank must be assumed to lose all cargo and refill with salt water up to the level of the tankship's final equilibrium waterline.

§ 172.150 Survival conditions.

A tankship is presumed to survive assumed damage if it meets the following conditions in the final stage of flooding:

(a) *Final waterline.* The final waterline, in the final condition of sinkage, heel, and trim, must be below the lower edge of openings such as air pipes and openings closed by weathertight doors or hatch covers. The following types of openings may be submerged when the tankship is at the final waterline:

(1) Openings covered by watertight manhole covers or watertight flush scuttles.

(2) Small watertight cargo tank hatch covers.

(3) A Class 1 door in a watertight bulkhead within the superstructure.

(4) Remotely operated sliding watertight doors.

(5) Side scuttles of the non-opening type.

(b) *Heel angle.* (1) Except as described in paragraph (b)(2) of this section, the maximum angle of heel must not exceed 15 degrees (17 degrees if no part of the freeboard deck is immersed).

(2) The Commander (mmt) will consider on a case by case basis each vessel 492 feet (150 meters) or less in length having a final heel angle greater than 17 degrees but less than 25 degrees.

(c) *Range of Stability.* Through an angle of 20 degrees beyond its position of equilibrium after flooding, a tankship must meet the following conditions:

(1) The righting arm curve must be positive.

(2) The maximum righting arm must be at least 3.95 inches (10 cm).

(3) Each submerged opening must be weathertight.

(d) *Progressive flooding.* Pipes, ducts or tunnels within the assumed extent of damage must be either—

(1) Equipped with arrangements such as stop check valves to prevent progressive flooding to other spaces with which they connect; or

(2) Assumed in the design calculations required by § 172.130 to flood the spaces with which they connect.

(e) *Buoyancy of superstructure.* The buoyancy of any superstructure directly above the side damage is to be disregarded. The unflooded parts of superstructures beyond the extent of damage may be taken into consideration if they are separated from the damaged space by watertight bulkheads and no progressive flooding of these intact spaces takes place.

(f) *Metacentric height.* After flooding, the tankship's metacentric height must be at least 2 inches (50mm) when the ship is in the upright position.

(g) *Equalization arrangements.* Flooding equalization arrangements requiring mechanical operation such as valves or cross-flooding lines may not be assumed to reduce the angle of heel. Spaces joined by ducts of large cross sectional area are treated as common spaces.

(h) *Intermediate stages of flooding.* If an intermediate stage of flooding is more critical than the final stage, the tankship must be shown by design calculations to meet the requirements in this section in the intermediate stage.

Subpart G—Special Rules Pertaining to a Ship That Carries a Bulk Liquefied Gas Regulated Under Subchapter O of This Chapter

§ 172.155 Specific applicability.

This subpart applies to each tankship that has on board a bulk liquefied gas listed in Table 4 of § 154 of this chapter as cargo, cargo residue, or vapor.

§ 172.160 Definitions.

As used in this subpart—

(a) "Length" or "L" means the load line length (LLL).

(b) "MARVS" means the Maximum Allowable Relief Valve Setting of a cargo tank.

§ 172.165 Intact stability calculations.

(a) Design calculations must show that 2 inches (50mm) of positive metacentric height can be maintained by each tankship when it is being loaded and unloaded.

(b) For the purpose of demonstrating compliance with the requirements of paragraph (a), of this section, the effects of the addition of water ballast may be considered.

§ 172.170 Damage stability calculations.

(a) Each tankship must be shown by design calculations to meet the survival conditions in § 172.195 in each condition of loading and operation assuming the damage specified in § 172.175 for the hull type specified in Table 4 of Part 154 of this chapter.

(b) If a cargo listed in Table 4 of Part 154 of this chapter is to be carried, the vessel must be at least the ship type specified in Table 4 of Part 154 of this chapter for the cargo.

§ 172.175 Character of damage.

(a) If a type IG hull is required, design calculations must show that the vessel can survive damage at any location.

(b) If a type IIG hull is required, design calculations must show that a vessel—

(1) Longer than 492 feet (150 meters) in length can survive damage at any location; and

(2) 492 feet (150 meters) or less in length can survive damage at any location except the transverse bulkheads bounding an aft machinery space. The machinery space is calculated as a single floodable compartment.

(c) If a vessel has independent tanks type C with a MARVS of 100 psi (689

kPa) gauge or greater, is 492 feet (150 meters) or less in length, and Table 4 of Part 154 of this chapter allows a type IIPG hull, design calculations must show that the vessel can survive damage at any location, except as prescribed in paragraph (e) of this section.

(d) If a type IIIG hull is required, except as specified in paragraph (e) of this section, design calculations must show that a vessel—

(1) 410 feet (125 meters) in length or longer can survive damage at any location; and

(2) Less than 410 feet (125 meters) in length can survive damage at any location, except in the main machinery space.

(e) The calculations in paragraphs (c) and (d) of this section need not assume damage to a transvers bulkhead unless it is spaced closer than the longitudinal extent of collision penetration specified in Table 172.180 from another transverse bulkhead.

(f) If a main transvers watertight bulkhead or transverse watertight bulkhead bounding a side tank or double bottom tank has a step or a recess that is longer than 10 feet (3.05 meters) located within the extent of penetration of assumed damage, the vessel must be shown by design calculations to survive damage to this bulkhead. The step formed by the after peak bulkhead and after peak tank top is not a step for the purpose of this regulation.

§ 172.180 Extent of damage.

For the purpose of § 172.170—

(a) Design calculations must include both side and bottom damage, applied separately; and

(b) Damage must consist of the penetrations having the dimensions given in Table 172.180 except that, if the most disabling penetrations would be less than the penetrations given in Table 172.180, the smaller penetration must be assumed.

TABLE 172.180.—EXTENT OF DAMAGE

Collision Penetration	
Longitudinal extent	$0.495L^{2/3}$ or 47.6 feet ($(1/3)L^{2/3}$ or 14.5m), whichever is shorter.
Transverse extent [1]	B/5 or 37.74 feet (11.5m) [2] whichever is shorter.
Vertical extent	From the baseline upward without limit.
Grounding Penetration at the Forward End But Excluding Any Damage Aft of a Point 0.3L Aft of the Forward Perpendicular	
Longitudinal extent	$0.495L^{2/3}$ or 47.6 feet ($(1/3)L^{2/3}$ or 14.5m) whichever is shorter.
Transverse extent	B/6 or 32.81 feet (10m) whichever is shorter.
Vertical extent from the molded line of the shell at the centerline	B/15 or 6.6 feet (2m) whichever is shorter
Grounding Penetration At Any Other Longitudinal Position	
Longitudinal extent	L/10 or 16.41 feet (5m) whichever is shorter.
Transverse extent	B/6 or 16.41 feet (5m) whichever is shorter.
Vertical extent from the molded line of the shell at the centerline.	B/15 or 6.6 feet (2m) whichever is shorter.

[1] Damage applied inboard from the vessel's side at right angles to the centerline at the level of the summer load line assigned under Subchapter E of this chapter.
[2] B is measured amidships.

§ 172.185 Permeability of spaces.

(a) When doing the calculations required in § 172.170, the permeability of a floodable space other than a machinery space must be as listed in Table 172.060(b).

(b) Calculations in which a machinery space is treated as a floodable space must be based on an assumed machinery space permeability of 85%, unless the use of an assumed permeability of less than 85% is justified in detail.

(c) If a cargo tank would be penetrated under the assumed damage, the cargo tank must be assumed to lose all cargo and refill with salt water up to the level of the tankship's final equilibrium waterline.

§ 172.195 Survival conditions.

A vessel is presumed to survive assumed damage if it meets the following conditions in the final stage of flooding:

(a) *Final waterline.* The final waterline, in the final condition of sinkage, heel, and trim, must be below the lower edge of an opening through which progressive flooding may take place, such as an air pipe, or an opening that is closed by means of a weathertight door or hatch cover. This opening does not include an opening closed by a—

(1) Watertight manhole cover;

(2) Flush scuttle;

(3) Small watertight cargo tank hatch cover that maintains the high integrity of the deck;

(4) A Class 1 door in a watertight bulkhead within the superstructure;

(5) Remotely operated sliding watertight door; or

(6) A side scuttle of the non-opening type.

(b) *Heel angle.* The maximum angle of heel must not exceed 30 degrees.

(c) *Range of stability.* Through an angle of 20 degrees beyond its position of equilibrium after flooding, a tankship must meet the following conditions:

(1) The righting arm curve must be positive.

(2) The maximum righting arm must be at least 3.94 inches (10 cm).

(3) Each submerged opening must be weathertight.

(d) *Progressive flooding.* If pipes, ducts, or tunnels are within the assumed extent of damage, arrangements must be made to prevent progressive flooding to a space that is not assumed to be flooded in the damaged stability calculations.

(e) *Buoyancy of superstructure.* The buoyancy of any superstructure directly above the side damage is to be disregarded. The unflooded parts of superstructures beyond the extent of damage may be taken into consideration if they are separated from the damaged space by watertight bulkheads and no progressive flooding of these intact spaces takes place.

(f) *Metacentric height.* After flooding, the tank ship's metacentric height must be at least 2 inches (50 mm) when the vessel is in the upright position.

(g) *Equalization arrangements.* Equalization arrangements requiring mechanical aids such as valves or cross-flooding lines may not be considered for reducing the angle of heel. Spaces joined by ducts of large cross-sectional area are treated as common spaces.

(h) *Intermediate stages of flooding.* If an intermediate stage of flooding is more critical than the final stage, the tank vessel must be shown by design calculations to meet the requirements in this section in the intermediate stage.

§ 172.205 Local damage.

(a) Each tankship must be shown by design calculations to meet the survival conditions in paragraph (b) of this section in each condition of loading and operation assuming that local damage extending 30 inches (76 cm) normal to the hull shell is applied at any location in the cargo length:

(b) The vessel is presumed to survive assumed local damage if it does not heel beyond the smaller of the following angles in the final stage of flooding:

(1) 30 degrees.

(2) The angle at which restoration of propulsion and steering, and use of the ballast system is precluded.

PART 173—SPECIAL RULES PERTAINING TO VESSEL USE

Subpart A—General

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173.070 Specific applicability.
173.075 Subdivision requirements.
173.080 Damage stability requirements.
173.085 General subdivisjon requirements.

Subpart E—Towing

173.090 General.
173.095 Towline pull criterion.

Authority: Section 2, 87 Stat. 418 (46 U.S.C. 86); Sec. 2, 49 Stat. 888 as amended (46 U.S.C. 88a); Sec. 5, 49 Stat. 1384 as amended (46 U.S.C. 369); R.S. 4405, as amended (46 U.S.C. 375); Sec. 3, 70 Stat. 152 as amended (46 U.S.C. 390b); Sec. 5, Pub. L. 95-474, 92 Stat. 1480 as amended (46 U.S.C. 391a); Sec. 1, Pub. L. 85-739, 72 Stat. 833, as amended (46 U.S.C. 404); R.S. 4462, as amended (46 U.S.C. 416); Sec. 2, Pub. L. 96-453, 94 Stat. 207 (46 U.S.C. 1295f(c)(2)); Sec. 4, 87 Stat. 462 (43 U.S.C. 1333(d)); Sec. 3, 68 Stat. 675 (50 U.S.C. 198); Sec. 6, 80 Stat. 938 (49 U.S.C. 1655(b)); E.O. 12234, 45 FR 58801; 49 CFR 1.46.

Subpart A—General

§ 173.001 Applicability.

Each vessel that is engaged in one of the following activities must comply with the applicable provisions of this part:

(a) Lifting.
(b) Training (schoolship).
(c) Oceanographic research.
(d) Towing.

Subpart B—Lifting

§ 173.005 Specific applicability.

This subpart applies to each vessel that—

(a) Is equipped to lift cargo or other objects; and

(b) Has a maximum heeling moment due to hook load greater than or equal to—

(0.67)(W)(GM)(F/B) in foot-long tons
(0.21)(W)(GM)(F/B) in meter-metric tons

where—
W = displacement of the vessel with the hook load included in long tons (metric tons).
GM = metacentric height with hook load included in feet (meters).
F = freeboard to the deck edge amidships in feet (meters).
B = beam in feet (meters).

§ 173.007 Location of the hook load.

When doing the calculations required in this subpart, the hook load must be considered to be located at the head of the crane.

§ 173.010 Definitions.

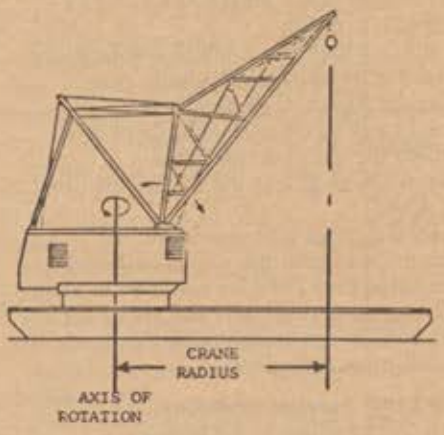
As used in this part—

(a) "Hook load" means the weight of the object lifted by the crane.

(b) "Crane radius" means the distance illustrated in Figure 173.010.

Figure 173.010

Crane Radius



§ 173.020 Intact stability standards: Counterballasted and non-counterballasted vessels.

(a) Except as provided in paragraph (c) of this section, each vessel that is not equipped to counter-ballast while lifting must be shown by design calculations to comply with this section in each condition of loading and operation and at each combination of hook load and crane radius.

(b) Each vessel must have a righting arm curve with the following characteristics:

(1) If the vessel operates in protected or partially protected waters, the area under the righting arm curve up to the smallest of the following angles must be at least 10 foot-degrees (3.05 meter-degrees):

(i) The angle corresponding to the maximum righting arm.

(ii) The downflooding angle.

(iii) 40 degrees.

(2) If the vessel operates in exposed waters, the area under the righting arm curve up to the smallest of the following angles must be at least 15 foot-degrees (4.57 meter-degrees):

(i) The angle corresponding to the maximum righting arm.

(ii) The downflooding angle.

(iii) 40 degrees.

(c) If the vessel's hull proportions fall within any one of the following limits, in lieu of complying with paragraph (b) of this section the vessel owner may demonstrate in the presence of the OCMI that the vessel will not heel beyond the limits specified in paragraph (d) of this section:

(1) Beam to depth—3.40 to 4.75.

(2) Length to beam—3.20 to 4.50.

(3) Draft to depth—0.60 to 0.85.

(d) For the purpose of paragraph (c) of this section, the following limits of heel apply with the vessel at its deepest operating draft:

(1) Protected and partially protected waters and Great Lakes in summer—heel to main deck immersion or bilge emergence, whichever occurs first.

(2) Exposed waters and Great Lakes in winter—heel permitted to one-half of the freeboard or one-half of the draft, whichever occurs first.

§ 173.025 Additional intact stability standards: Counterballasted vessels.

(a) Each vessel equipped to counterballast while lifting must be shown by design calculations to be able to withstand the sudden loss of the hook load, in each condition of loading and operation and at each combination of hook load and crane radius.

(b) When doing the calculations required by this section, the hook load and counterballast heeling moments and vessel righting moments, as plotted on graph 173.025, must define areas that satisfy the following equation:

Area II > Area I + K

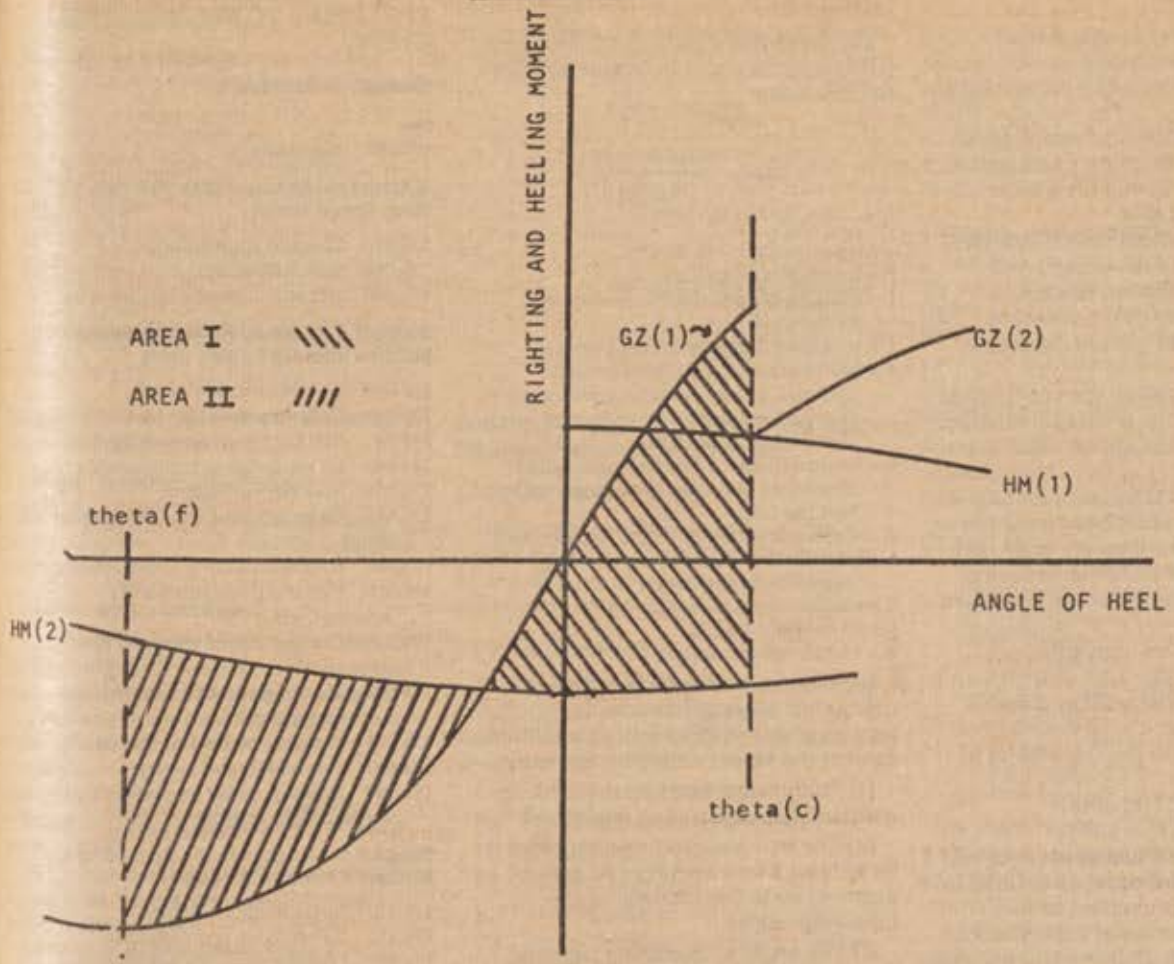
where—
(1) K = O for operation on protected waters and 7 foot-degrees (2.13 meter-degrees) for operation on partially protected and exposed waters.
(2) Areas I and II are shown on graph 173.025.

(c) Each heeling moment curve must be defined by —

HM = HMO cos (T)

where—
HM = heeling moment.
HMO = heeling moment at 0 degrees of heel.
T = angle of heel

GRAPH 173.025



where,

GZ(1) is the righting moment curve at the displacement corresponding to the vessel without hook load.

GZ(2) is the righting moment curve at the displacement corresponding to the vessel with hook load.

HM(1) is the heeling moment curve due to the combined heeling moments of the hook load and the counterballast at the displacement with hook load.

HM(2) is the heeling moment curve due to the counterballast at the displacement without hook load.

theta(c) is the angle of static equilibrium due to the combined hook load and counterballast heeling moments.

theta(f) is the downflooding angle on the counterballasted side of the vessel.

Subpart C—School Ships

§ 173.050 Specific applicability.

Each nautical school ship, inspected under Subchapter R of this chapter, must comply with this subpart.

§ 173.055 Public nautical school ships.

Each public nautical school ship must comply with—

(a) Section 171.070(a) of this subchapter as a passenger vessel carrying 400 or less passengers;

(b) Section 171.070(e) of this subchapter;

(c) Section 171.072 of this subchapter; and

(d) Section 171.073 of this subchapter.

§ 173.060 Civilian nautical school ships.

Each civilian nautical school ship must comply with Part 171 of this subchapter as though it were a passenger vessel. In addition to regular passengers, for the purpose of complying with Part 171, the following will also count as passengers:

(a) A student.

(b) A cadet.

(c) An instructor who is not also a member of the crew.

Subpart D—Oceanographic Research

§ 173.070 Specific applicability.

Each oceanographic vessel, inspected under Subchapter U of this chapter, except a barge that is less than 300 gross tons, must comply with this subpart.

§ 173.075 Subdivision requirements.

(a) Each oceanographic vessel must comply with the subdivision requirements in §§ 171.070, 171.072, and 171.073 of this subchapter as if it were a passenger vessel carrying 400 or less passengers.

(b) Each vessel must have a collision bulkhead.

§ 173.080 Damage stability requirements.

Each oceanographic vessel must comply with § 171.080 of this subchapter as a category Z vessel.

§ 173.085 General subdivision requirements.

Each oceanographic vessel must comply with the following:

(a) Section 171.085(c)(1), (d) and (g) of this subchapter.

(b) Section 171.105 (a) through (g) of this subchapter except that a reduction or elimination of the required inner bottom is allowed if—

(1) The inner bottom would interfere with the mission of the vessel; and

(2) As a result of other design features, the ability of the vessel to withstand side and bottom damage is not reduced.

(c) Section 171.106 of this subchapter.

(d) Section 171.108 of this subchapter.

(e) Section 171.109 of this subchapter.

(f) Section 171.111 of this subchapter.

(g) Section 171.113 of this subchapter.

(h) The collision bulkhead must not be penetrated by more than one pipe that carries liquid to or from the forepeak tank. This pipe must have a screwdown valve that is—

(1) Operative from above the bulkhead deck; and

(2) Attached to the bulkhead inside the forepeak tank.

(i) Section 171.116 (b), (c), and (e) of this subchapter.

(j) Section 171.117(c) of this subchapter.

(k) Each port light in a space located below the freeboard deck, as defined in § 42.13–15(i) of this chapter, or in a space within an enclosed superstructure must be fitted with a hinged inside dead cover.

(l) Section 171.118 (b) and (c) of this subchapter.

(m) Section 171.122 (a) through (d) and (f) of this subchapter.

(n) Section 171.135 of this subchapter.

(o) A ventilation duct or forced draft duct may not penetrate a main transverse watertight bulkhead unless—

(1) The penetration is watertight;

(2) The penetration is located as near the vessel's centerline as possible; and

(3) The bottom of the duct is not more than—

(i) 18 inches (45.7 cm) below the bulkhead deck; and

(ii) 4 feet (121.9 cm) above the final waterline after damage determined in § 173.080.

Subpart E—Towing

§ 173.090 General.

This subpart applies to each vessel that is equipped for towing.

§ 173.095 Towline pull criterion.

(a) In each towing condition, each vessel must be shown by design calculations to meet the requirements of either paragraph (b) or (c) of this section.

(b) the vessel's metacentric height (GM) must be equal to or greater than the following:

$$GM = \frac{[N][P \times D]^{2/3}[s][h]}{K\Delta[f/B]}$$

where—

N = number of propellers.

P = shaft power per shaft in horsepower (kilowatts).

D = propeller diameter in feet (meters).

s = that fraction of the propeller circle cylinder which would be intercepted by the rudder if turned to 45 degrees from the vessel's centerline.

h = vertical distance from propeller shaft centerline at rudder to towing bitts in feet (meters).

Δ = displacement in long tons (metric tons).

f = minimum freeboard along the length of the vessel in feet (meters).

B = molded beam in feet (meters).

K = 38 in English units.

K = 13.93 in metric units.

(c) When a heeling arm curve, calculated in accordance with paragraph (d) of this section, is plotted against the vessel's righting arm curve—

(1) Equilibrium must be reached before the downflooding angle; and

(2) The residual righting energy must be at least 2 foot-degrees (.61 meter-degrees) up to the smallest of the following angles:

(i) The angle of maximum righting arm.

(ii) The downflooding angle.

(iii) 40 degrees.

(d) The heeling arm curve specified in paragraph (c) of this section must be calculated by the following equation:

$$HA = \frac{2\,[N][P \times D]^{2/3}[s][h][\cos\,\theta]}{K\Delta}$$

where—

HA = heeling arm.

θ = angle of heel.

N, P, D, K, s, h, and Δ are as defined in paragraph (b) of this section.

(e) For the purpose of this section, downflooding angle means the static angle from the intersection of the vessel's centerline and waterline in calm water to the first opening that does not close watertight automatically.

(f) For the purpose of this section, at each angle of heel, a vessel's righting arm may be calculated considering either—

(1) The vessel is permitted to trim free until the trimming moment is zero; or

(2) The vessel does not trim as it heels.

PART 174—SPECIAL RULES PERTAINING TO SPECIFIC VESSEL TYPES

Subpart A—General

Sec.

174.005 Applicability.

Subpart B—Special Rules Pertaining to Deck Cargo Barges

174.010 Specific applicability.

174.015 Intact stability.

174.020 Alternate intact stability criterion

Subpart C—Special Rules Pertaining to Mobile Offshore Drilling Units

174.030 Specific applicability.

174.035 Definitions.

174.040 Stability requirements: general.

174.045 Intact stability requirements.

174.050 Stability on bottom.

174.055 Calculation of wind heeling momen (Hm).

174.065 Damage stability requirements.

174.070 General damage stability assumptions.

174.075 Compartments assumed flooded: general.

174.080 Flooding on self-elevating and surface type units.

174.085 Flooding on column stabilized units

174.090 Permeability of spaces.

174.100 Appliances for watertight and weathertight integrity.

Subpart D—Special Rules Pertaining to Nuclear Powered Vessels

174.110 Specific applicability.

174.115 Subdivision requirements.

174.120 Damage stability requirements.

174.125 Additional subdivision requirements.

Subpart E—Special Rules Pertaining to Tugboats and Towboats

174.140 Specific applicability.

174.145 Intact stability requirements.

Subpart F—Special Rules Pertaining to Ocean Thermal Energy Conversion Plantships and Floating Facilities

174.150 Specific applicability.

174.155 Stability requirements.

174.160 Normal operating condition.

174.165 Tension tendon tethered facilities.

174.170 Stability test.

Authority: Section 2, 87 Stat. 418 (46 U.S.C. 86); Sec. 2, 49 Stat. 888 as amended (46 U.S.C. 88a); Sec. 5, 49 Stat. 1384 as amended (46 U.S.C. 369); R.S. 4405, as amended (46 U.S.C. 375); Sec. 3, 70 Stat. 152 as amended (46 U.S.C. 390b); Sec. 5, Pub. L. 95–474, 92 Stat. 1480 as amended (46 U.S.C. 391a); Sec. 1, Pub. L. 85–739, 72 Stat. 833, as amended (46 U.S.C. 404); R.S. 4462, as amended (46 U.S.C. 416); Sec. 2, Pub. L. 96–453, 94 Stat. 207 (46 U.S.C. 1295f(c)(2)); Sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d); Sec. 3, 68 Stat. 675 (50 U.S.C. 198); Sec. 6, 80 Stat. 938 (49 U.S.C. 1655(b)); E.O. 12234, 45 FR 58801; and 49 CFR 1.46, except as otherwise noted.

Subpart A—General

§ 174.005 Applicability.

Each of the following vessels must comply with the applicable provisions of this part:

(a) Deck cargo barge.

(b) Mobile offshore drilling unit (MODU) inspected under Subchapter IA of this chapter.

(c) Nuclear powered vessel.

(d) Tugboat and towboat inspected under Subchapter I of this chapter.

(e) Ocean Thermal Energy Conversion plantship and floating facility inspected under Subchapter I of this chapter.

Subpart B—Special Rules Pertaining to Deck Cargo Barges

§ 174.010 Specific applicability.

Each barge that carries cargo above the weather deck must comply with this subpart.

§ 174.015 Intact stability.

(a) Except as provided in § 174.020, in each condition of loading and operation, each barge must be shown by design calculations to have an area under the righting arm curve up to the angle of maximum righting arm, the downflooding angle, or 40 degrees, whichever angle is smallest, equal to or greater than—

(1) 15 foot-degrees (4.57 meter-degrees) for ocean and Great Lakes winter service; and

(2) 10 foot-degrees (3.05 meter-degrees) for lakes, bays, sounds, and Great Lakes summer service.

(b) For the purpose of this section, downflooding angle means the static angle from the intersection of the vessel's centerline and waterline in calm water to the first opening that does not close watertight automatically.

§ 174.020 Alternate intact stability criterion.

A barge need not comply with § 174.015 and Subparts C and E of Part 170 of this chapter if it has the following characteristics:

(a) The weather deck is watertight.

(b) The barge's hull proportions fall within any one of the ratios in categories (A) through (D) in Table 174.020.

(c) The maximum cargo height is 30 feet (9.25 meters) or a value equal to the depth of the barge amidships, whichever is less.

TABLE 174.020

Category	Beam/depth ratio	Draft/depth ratio
A	3.00 to 3.74	Equal to or less than 0.70.
B	3.75 to 3.99	Equal to or less than 0.72.
C	4.00 to 4.49	Equal to or less than 0.76.
D	4.50 to 6.00	Equal to or less than 0.80.

Subpart C—Special Rules Pertaining to Mobile Offshore Drilling Units

§ 174.030 Specific applicability.

Each mobile offshore drilling unit (MODU) inspected under Subchapter IA of this chapter must comply with this subpart.

§ 174.035 Definitions.

(a) For the purpose of this subpart the following terms have the same definitions as given in Subchapter IA of this chapter:

(1) "Column stabilized unit".

(2) "Mobile offshore drilling unit".

(3) "Self-elevating unit".

(4) "Surface type unit".

(b) For the purpose of this subpart—

(1) "Downflooding" means the entry of seawater through any opening that cannot be rapidly closed watertight, into the hull, superstructure, or columns of an undamaged unit due to heel, trim, or submergence of the unit.

(2) "Downflooding angle" means the static angle from the intersection of the unit's centerline and waterline in calm water to the first opening through which downflooding can occur when subjected to a wind heeling moment (Hm) calculated in accordance with § 174.055.

(3) "Normal operating condition" means a condition of a unit when loaded or arranged for drilling, field transit, or ocean transit.

(4) "Severe storm condition" means a condition of a unit when loaded or arranged to withstand the passage of a severe storm.

§ 174.040 Stability requirements: general.

Each unit must be designed to have at least 2 inches (50mm) of positive metacentric height in the upright equilibrium position for the full range of drafts, whether at the operating draft for navigation, towing, or drilling afloat, or at a temporary draft when changing drafts.

§ 174.045 Intact stability requirements.

(a) Each unit must be designed so that the wind heeling moments (Hm) and righting moments calculated for each of its normal operating conditions and severe storm conditions, when plotted on GRAPH 174.045, define areas that satisfy the equation:

Area (A) > (K) X (Area (B))

where—

(1) K = 1.4 except that if the unit is a column stabilized unit K = 1.3;

(2) Area (A) is the area on GRAPH 174.045 under the righting moment curve between 0 and the second intercept angle or the angle of heel at which downflooding would occur, whichever angle is less; and

(3) Area (B) is the area on GRAPH 174.045 under the wind heeling moment curve between 0 and the second intercept angle or the angle of heel at which downflooding of the unit would occur whichever angle is less.

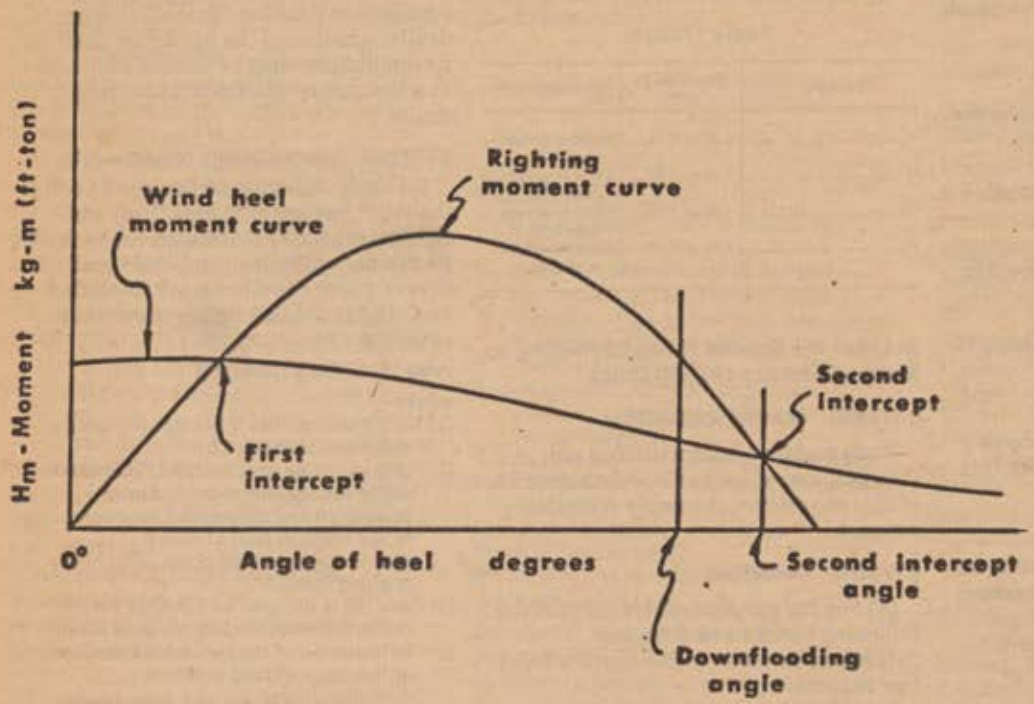
(b) Each righting moment on graph § 174.045 must be positive for all angles greater than 0 and less than the second intercept angle.

(c) For the purposes of this section, openings fitted with the weathertight closing appliances specified in § 174.100(b) are not considered as openings through which downflooding could occur if they can be rapidly closed and would not be submerged below the units' waterline prior to the first intercept angle, except that ventilation intakes and outlets for machinery spaces, crew spaces, and other spaces where ventilation is normally required are considered as openings through which downflooding could occur regardless of location.

(d) Each unit must be designed so that it can be changed from each of its normal operating conditions to a severe storm condition within a minimum period of time consistent with the operating manual required in § 170.130 of this subchapter.

GRAPH 174.045

Intact Stability Curves for a Given Normal Operating or Severe Storm Mode



§ 174.050 Stability on bottom.

Each bottom bearing unit must be designed so that, while supported on the sea bottom with footings or a mat, it continually exerts a downward force on each footing or the mat when subjected to the forces of wave and current and to wind blowing at the velocities described in § 174.055(b)(3).

§ 174.055 Calculation of wind heeling moment (Hm).

(a) The wind heeling moment (Hm) of a unit in a given normal operating condition or severe storm condition is the sum of the individual wind heeling moments (H) calculated for each of the exposed surfaces on the unit; i.e., $Hm = \Sigma H$.

(b) Each wind heeling moment (H) must be calculated using the equation:

$H = k(v)^2(Ch)(Cs)(A)(h)$

where—

(1) H = wind heeling moment for an exposed surface on the unit in foot-pounds (kilogram-meters);

(2) k = 0.00338 lb./(ft.^{2}-knots^2) (0.0623 (kg-sec^2)/m^4);

(3) v = wind velocity of—

(i) 70 knots (36 meters per second) for normal operating conditions.

(ii) 100 knots (51.5 meters per second) for severe storm conditions.

(iii) 50 knots (25.8 meters per second) for damage conditions.

(4) A = projected area in square feet (squrae meters) of an exposed surface on the unit;

(5) Ch = height coefficient for "A" from Table 174.055(a);

(6) Cs = shape coefficient for "A" from Table 174.055(b); and

(7) h = the vertical distance in feet (meters) from the center of lateral resistance of the underwater hull to the center of wind pressure on "A".

(c) When calculating "A" in the equation described in paragraph (b) of this section—

(1) The projected area of each column or leg; if the unit has columns or legs, must not include shielding allowances;

(2) Each area exposed as a result of heel must be included;

(3) The projected area of a cluster of deck houses may be used instead of the projected area of each individual deck house in the cluster; and

(4) The projected area of open truss work may be calculated by taking 30% of the projected areas of both the front and back sides of the open truss work rather than by determining the projected area of each structural member of the truss work.

TABLE 174.055(a).—CH VALUES

Feet		Meters		Ch.
Over	Not exceeding	Over	Not exceeding	
0	50	0.0	15.3	1.00
50	100	15.3	30.5	1.10
100	150	30.5	46.0	1.20
150	200	46.0	61.0	1.30
200	250	61.0	76.0	1.37
250	300	76.0	91.5	1.43
300	350	91.5	106.5	1.48
350	400	106.5	122.0	1.52
400	450	122.0	137.0	1.56
450	500	137.0	152.5	1.60
500	550	152.5	167.5	1.63
550	600	167.5	183.0	1.67
600	650	183.0	198.0	1.70
650	700	198.0	213.5	1.72
700	750	213.5	228.5	1.75
750	800	228.5	244.0	1.77
800	850	244.0	256.0	1.79
Above 850.		Above 256		1.80

NOTE: The "Ch" value in this table, used in the equation described in section § 174.055(b), corresponds to the value of the vertical distance in feet (meters) from the water surface at the design draft of the unit to the center of area of the "A" value used in the equation.

TABLE 174.055(b).—CS VALUES

Shape	Cs.
Cylindrical shapes	0.5
Hull (surface type)	1.0
Deckhouse	1.0
Cluster of deckhouses	1.1
Isolated structural shapes (cranes, angles, channels, beams, etc.)	1.5
Under deck areas (smooth surfaces)	1.0
Under deck areas (exposed beams and girders)	1.3
Rig derrick (each face and open truss works)	1.25

NOTE: The "Cs" value in this table, used in the equation described in § 174.055(b), corresponds to the shape of the projected "A" in the equation.

§ 174.065 Damage stability requirements.

(a) Each unit must be designed so that, while in each of its normal operating conditions and severe storm conditions, its final equilibrium waterline would remain below the lowest edge of any opening through which additional flooding could occur if the unit were subjected simultaneously to—

(1) Damage causing flooding described in §§ 174.075 through 174.085; and

(2) A wind heeling moment calculated in accordance with § 174.055(b) using a wind velocity of 50 knots (25.8 meters per second).

(b) Each unit must have a means to close off each pipe, ventilation system, and trunk in each compartment described in § 174.080 or § 174.085 if any portion of the pipe, ventilation system, or trunk is within 5 feet (1.5 meters) of the hull.

174.070 General damage stability assumptions.

For the purpose of determining compliance with § 174.065, the assumptions are made that during flooding and the resulting change in the unit's waterline—

(a) The unit is not anchored or moored; and

(b) No compartment on the unit is ballasted or pumped out to compensate for the flooding described in §§ 174.075 through 174.085.

§ 174.075 Compartments assumed flooded: general.

The individual flooding of each of the compartments described in §§ 174.080 and 174.085 must be assumed for the purpose of determining compliance with § 174.065 (a). Simultaneous flooding of more than one compartment must be assumed only when indicated in §§ 174.080 and 174.085.

§ 174.080 Flooding on self-elevating and surface type units.

(a) On a surface type unit or self-elevating unit, all compartments within 5 feet (1.5 meters) of the hull of the unit between two adjacent main watertight bulkheads, the bottom shell, and the uppermost continuous deck or first superstructure deck where superstructures are fitted must be assumed to be subject to simultaneous flooding.

(b) On the mat of a self-elevating unit, all compartments of the mat must be assumed to be subject to individual flooding.

§ 174.085 Flooding on column stabilized units.

(a) Watertight compartments that are outboard of, or traversed by, a plane which connects the vertical centerlines of the columns on the periphery of the unit, and within 5 feet (1.5 meters) of an outer surface of a column or footing on the periphery of the unit, must be assumed to be subject to flooding as follows:

(1) When a column is subdivided into watertight compartments by horizontal watertight flats, all compartments in the column within 5 feet (1.5 meters) of the unit's waterline before damage causing flooding must be assumed to be subject to simultaneous flooding.

(2) When a column is subdivided into watertight compartments by vertical watertight bulkheads, each two adjacent compartments must be assumed subject to simultaneous flooding if the distance between the vertical watertight bulkheads, measured at the column periphery, is equal to or less than one-eighth of the column perimeter at the draft under consideration.

(3) When a column is subdivided into watertight compartments by horizontal watertight flats and vertical watertight bulkheads, those compartments that are within the bounds described in paragraph (a)(2) of this section and within 5 feet (1.5 meters) of the unit's waterline before damage causing flooding must be assumed to be subject to simultaneous flooding.

(b) Each compartment in a footing must be assumed to be subject to individual flooding when any part of the compartment is within 5 feet (1.5 meters) of the unit's waterline before damage causing flooding.

§ 174.090 Permeability of spaces.

When doing the calculations required in § 174.065—

(a) The permeability of a floodable space, other than a machinery space, must be as listed in Table 174.090; and

(b) Calculations in which a machinery space is treated as a floodable space must be based on an assumed machinery space permeability of 85%, unless the use of an assumed permeability of less than 85% is justified in detail.

TABLE 174.090.—PERMEABILITY

Spaces and tanks	Permeability (percent)
Storeroom spaces	60
Accommodation spaces	95
Voids	95
Consumable liquid tanks	95 or 0.[1]
Other liquid tanks	95 or 0.[2]

[1] Whichever results in the more disabling condition.
[2] If tanks are partially filled, the permeability must be determined from the actual density and amount of liquid carried.

§ 174.100 Appliances for watertight and weathertight integrity.

(a) Appliances to insure watertight integrity include watertight doors, hatches, scuttles, bolted manhole covers, or other watertight closures for openings in watertight decks and bulkheads.

(b) Appliances to insure weathertight integrity include weathertight doors and hatches, closures for air pipes, ventilators, ventilation intakes and outlets, and closures for other openings in deckhouses and superstructures.

(c) Each internal opening equipped with appliances to insure watertight integrity that is used intermittently during operation of the unit while afloat must meet the following:

(1) Each door, hatch, and scuttle must—

(i) Be remotely controlled from a normally manned control station, and be operable locally from both sides of the bulkhead; or

(ii) If there is no means of remote control there must be an alarm system that signals whether the appliance is open or closed both locally at each appliance and in a normally manned control station.

(2) Each closing appliance must remain watertight under the design water pressure of the watertight boundary of which it is a part.

(d) Each external opening fitted with an appliance to insure weathertight integrity must be located so that it would not be submerged below the final equilibrium waterline if the unit is subjected simultaneously to—

(1) Damage causing flooding described in §§ 174.075 through 174.085; and

(2) A wind heeling moment calculated in accordance with § 174.055 using a wind velocity of 50 knots (25.8 meters per second).

(e) If a unit is equipped with sliding watertight doors, each sliding watertight door must be approved under Subpart 163.001 of Subchapter Q of this chapter.

Subpart D—Special Rules Pertaining to Nuclear Powered Vessels

§ 174.110 Specific applicability.

(a) This part applies to nuclear vessels.

(b) Nuclear vessels are required to comply with Part 37, 79, or 99 of this chapter.

§ 174.115 Subdivision requirements.

Each vessel must comply with the subdivision requirements in §§ 171.070, 171.072, and 171.073 of this subchapter as if it were a passenger vessel carrying more than 1000 passengers.

§ 174.120 Damage stability requirements.

Each vessel must comply with § 171.080 of this subchapter as a category Y vessel.

§ 174.125 Additional subdivision requirements.

Each vessel must comply with the following:

(a) Sections 171.085, 171.090, 171.095, and 171.100 of this subchapter as if it were a passenger vessel of 100 gross tons or more with Type II subdivision.

(b) Sections 171.105, 171.106, 171.108, and 171.109 of this subchapter as if it were a passenger vessel that is—

(1) Greater than 250 feet (76 meters) in LBP;

(2) Greater than 100 gross tons; and

(3) In ocean service.

(c) Sections 171.111 through 171.113 of this subchapter.

(d) Sections 171.116 through 171.118 of this subchapter.

(e) Sections 171.122 and 171.135 of this subchapter.

Subpart E—Special Rules Pertaining to Tugboats and Towboats

§ 174.140 Specific applicability.

Each tugboat and towboat inspected under Subchapter I of this chapter must comply with this subpart.

§ 174.145 Intact stability requirements.

(a) In each condition of loading and operation, each vessel must be shown by design calculations to meet the requirements of paragraphs (b) through (e) of this section.

(b) The area under each righting arm curve must be at least 16.9 foot-degrees (5.15 meter-degrees) up to the smallest of the following angles:

(1) The angle of maximum righting arm.

(2) The downflooding angle.

(3) 40 degrees.

(c) The area under each righting arm curve must be at least 5.6 foot-degrees (1.72 meter-degrees) between the angles of 30 degrees and 40 degrees, or between 30 degrees and the downflooding angle if this angle is less than 40 degrees.

(d) The maximum righting arm shall occur at a heel of at least 25 degrees.

(e) The righting arm curve must be positive to at least 60 degrees.

(f) For the purpose of this section, at each angle of heel, a vessel's righting arm may be calculated considering either—

(1) The vessel is permitted to trim free until the trimming moment is zero; or

(2) The vessel does not trim as it heels.

Subpart F—Special Rules Pertaining to Ocean Thermal Energy Conversion Plantships and Floating Facilities

Authority: Pub. L. 96-320, 94 Stat. 974 (42 U.S.C. 9118, 9119(c), 9153 (a), (b)); 49 CFR 1.46 (ee).

§ 174.150 Specific applicability.

This subpart applies to each Ocean Thermal Energy Conversion plantship and floating facility that must meet Part 106 of this chapter.

§ 174.155 Stability requirements.

(a) Except as modified in this subpart, each plantship and floating facility must meet the following requirements in this subchapter:

(1) Section 170.085.

(2) Section 170.090.

(3) Section 170.120.

(4) Sections 170.174 through 170.190.

(5) Sections 174.030 through 174.100.

(b) Compliance with the remaining provisions in this subchapter is not required.

§ 174.160 Normal operating condition.

For the purpose of this subpart, "Normal operating condition" means a condition of the plantship or floating facility when loaded and arranged for producing energy or when in ocean transit.

§ 174.165 Tension tendon tethered facilities.

Each floating facility of the tension tendon tethered configuration must be designed so that it continually maintains a tension on each tendon when subjected to the forces described in § 174.055 of this subchapter.

§ 174.170 Stability test.

The stability test provided for in Subpart F of Part 170 of this subchapter is not required for a floating facility or plantship if it is shown to the satisfaction of the Commandant that, because of its configuration, testing of the facility or plantship is not practicable and the facility or plantship has inherent adequate stability by design.

PART 177—CONSTRUCTION AND ARRANGEMENT

71. In § 177.05-3, by revising paragraphs (a) and (b) to read as follows:

§ 177.05-3 Plans required for "S" vessels carrying more than 150 passengers, all "L" vessels, and certain other vessels.

(a) *S and L.* The owner or builder must, prior to the start of construction if practicable, or in any case prior to the initial inspection of the vessel, submit for approval to the Officer in Charge, Marine Inspection, of the inspection zone where the vessel is to be inspected, at least two copies of each of the plans listed in § 177.05-1(a).

(b) *S and L.* Additional plans, calculations, and data must be submitted as required by Subchapter S of this chapter.

* * * * *

§ 177.05-3 [Amended]

72. In § 177.05-3, by removing paragraph, (c), (d), and (e).

73. By adding a new Subpart 177.13 to read as follows:

Subpart 177.13—Subdivision and Stability

§ 177.13-1 Requirements.

Each vessel must meet the applicable requirements in Subchapter S of this chapter.

PART 178—WATERTIGHT INTEGRITY AND SUBDIVISION [REMOVED]

74. By removing Part 178.

PART 179—STABILITY [REMOVED]

75. By removing Part 179.

PART 185—OPERATIONS

76. By adding a new Subpart 185.12 to read as follows:

Subpart 185.12—Stability Letter

§ 185.12-1 Posting.

(a) If a stability letter is issued in accordance with the requirements in § 170.120 of this chapter, it must be posted under glass or other suitable transparent material in the pilothouse of the vessel.

(b) If posting is impacticable, the stability letter must be kept on board in the custody of the licensed operator.

PART 189—INSPECTION AND CERTIFICATION

77. In § 189.55-5, by revising paragraph (c) to read as follows:

§ 189.55-5 Plans and specifications required for new construction.

* * * * *

(c) *Subdivision and stability.* Plans required by Part 170 of this chapter.

* * * * *

PART 190—CONSTRUCTION AND ARRANGEMENT

78. By adding a new Subpart 190.03 to read as follows:

Subpart 190.03—Subdivision and Stability

§ 190.03-1 General.

Each vessel must comply with the applicable requirements in Subchapter S of this chapter.

PART 191—SUBDIVISION AND STABILITY [REMOVED]

79. By removing Part 191.

PART 196—OPERATIONS

80. By adding a new Subpart 196.12 to read as follows:

Subpart 196.12—Stability Letter

§ 196.12-1 Posting.

If a stability letter is issued in accordance with the requirements in § 170.120 of this chapter, it must be posted under glass or other suitable transparent material in the pilothouse of the vessel.

81. By adding a new Subpart 196.18 to read as follows.

Subpart 196.18—Prevention of Oil Pollution

§ 196.18-1 General.

Each vessel must be operated to meet the requirements in—

(a) Section 311 of the Federal Water Pollution Control Act, as amended (86 Stat. 816; 33 U.S.C. 1321);

(b) Section 12 of the Oil Pollution Act, 1961, as amended (75 Stat. 404; 33 U.S.C. 1011); and

(c) 33 CFR Parts 151, 155 and 156.

Dated: August 29, 1983.

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[FR Doc. 83-29810 Filed 11-3-83; 8:45 am]

BILLING CODE 4910-14-M