MSC Guidelines for Review of General Arrangement Plans for Small Passenger Vessels (T)

Procedure Number: H1-07
Revision Date: 3/21/16

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References

a. 46 CFR Subchapter T, Part 177, 178, & 179
c. 21 CFR Subchapter L, Part 1250

Contact Information

If you have any questions or comments concerning this document, please contact the Marine Safety Center by e-mail or phone. Please refer to Procedure Number: H1-07.

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Required Plans for Review

- Plans / Documents to be submitted to MSC:
  - Copy of Application for Inspection Submitted to the cognizant Officer in Charge, Marine Inspections (OCMI), if not already provided, indicating:
    - Hull material
    - Desired passenger count
    - Desired route & inspection subchapter
  - Outboard Profile
  - Inboard Profile
  - Arrangement of Decks

All plans must include sufficient detail to allow for independent verification of compliance with the applicable requirements of 46 CFR Subchapter T.

General Review Guidance

Ensure the vessel complies with the requirements of Subchapter T, including the following applicable items:

General and Structural Fire Protection (46 CFR 177.405-410)
- Machinery and fuel tank spaces must be separated from accommodation spaces so as to prevent the passage of vapors
- Paint and flammable liquid lockers must be constructed of steel or equivalent material, or wholly lined with steel or equivalent material
- Surfaces within 3 ft of a cooking area must have a flame spread rating of 75
- The resin for composite vessels must be fire retardant
  - General-purpose resin may be used if additional requirements of 46 CFR 177.410(c) are met
Escape Requirements (46 CFR 177.500)
- Each space accessible to passengers, or regularly used by crew, must have two widely separated means of escape, at least one of which is not a watertight door
- Only one means of escape is required from a space where:
  - the space has a deck area less that $30 \text{ m}^2 (322 \text{ ft}^2)$;
  - there is no stove, heater or other source of fire in the space;
  - the means of escape is located as far as possible from a machinery space or fuel tank; and
  - if an accommodation space, the single means of escape does not include a deck scuttle or ladder
- A ladder leading to a deck scuttle is not counted as a means of escape, except:
  - from crew spaces, or
  - on vessels $\leq 19.8 \text{ m} (65 \text{ ft})$ and complies with 46 CFR177.500 (k)
- When deck scuttles are counted as a means of escape, they must be $\geq 455 \text{ mm} (18 \text{ in})$ in diameter
- The minimum clear opening of a door or passageway, used as a means of escape, must be $\geq 810 \text{ mm} (32 \text{ in})$ in width
- Doors or passageways for crewmembers must be $\geq 710 \text{ mm} (28 \text{ in})$ in width
- Dead end passageways must be $\leq 6.1 \text{ meters} (20 \text{ ft})$
- The sum of the width of all doors and passageways used as means of escape from a space must be $\geq 8.4 \text{ mm} (0.333 \text{ in})$ multiplied by number of passengers for which the space is designed

Crew Spaces (46 CFR 177.700-710)
- Decks above crew accommodation spaces must be above the deepest load waterline
- Overnight accommodations must be provided for crewmembers if the vessel is operated more than 12 hours in a 24-hour period with the same crew

Passenger Accommodations (46 CFR 177.800-820)
- Ceilings in passenger accommodation spaces must be $\geq 1,880 \text{ mm} (74 \text{ in})$
- Decks above passenger accommodation spaces must be above the deepest load waterline
- Passenger accommodations must not contain electrical generators, high temperature piping, controls for operating the vessel, or any item that could injure a passenger
- Berths must be provided for each overnight passenger, and must meet the requirements of 46 CFR 177.810
- Each passenger overnight accommodation berth must be immediately adjacent to an aisle leading to a means of escape
An aisle alongside a berth must be $\geq 610$ mm (24 in); an aisle joining two or more aisles in an overnight accommodation space must be $\geq 1,060$ mm (42 in) in width.

Seats must be provided for each passenger where fixed seating criterion in 46 CFR 176.113(b)(3) is used.

Seats must be arranged as follows:
- Aisles $\leq 3.8$ m (15 ft) in length must be $\geq 610$ mm (24 in) in width
- Aisles $> 3.8$ m (15 ft) in length must be $\geq 760$ mm (30 in) in width
- Where seats are in rows, the distance from seat front to seat front must be $\geq 760$ mm (30 in)

Rails and Guards (46 CFR 177.900-970)
- Rails must be installed around decks accessible to passengers or crew
- Height requirements:
  - Ferries, excursion vessels, or vessels subject to the International Convention of Load Lines (ICLL): $> 1000$ mm (39.5 in),
  - Others: 910 mm (36 in), except
  - Big game angling vessels, the rail may be reduced to $\geq 760$ mm (30 in) in way of a person using specialized angling techniques and equipment
- Rails must be permanently installed with exceptions listed in 46 CFR 177.900(h)
- Deck rails must be designed to withstand a point load of 91 kg (200 lbs) at any point in any direction and uniform load of 74 kg/m (50 lb/ft) applied to top rail in any direction; the point and uniform loads need not be applied simultaneously
- Rail courses must be installed so no open space exceeds 305 mm (12 in)
  - On passenger decks of a ferry or a vessel on an excursion trips, chain link fencing or bars and slats must be installed with no greater than a 4 inch opening
  - Temporary rails or equivalent must be installed in way of vehicle ramps Suitable chains, cables, or other barriers must be installed at ends of vehicle runways

Passengers Permitted (46 CFR 176.113)
- The max number of passengers must be less than the greatest number permitted by length of rail criterion, deck area criterion, fixed seating criterion, or a combination of deck area and fixed seating criterion; see exceptions in 46 CFR 176.113(d)
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Window Construction and Visibility (46 CFR 177.1010-1030)
- Glass and other glazing material used in windows must not break into dangerous fragments if fractured.
- Windows and portholes must be capable of withstanding expected maximum loads.
- Windows and other openings at the operating station must be of sufficient size and in the proper location.
- Glass or other glazing material used in windows at operating station must meet light transmission and other testing requirements of ANSI Z 26.1.

Drainage of Weather Decks (46 CFR 178.410-450)
- Flush deck vessels;
  - Must have a watertight weather deck,
  - Must have no obstructions to overboard drainage,
  - May have solid bulwarks in the forward 1/3rd of the vessel if they do not form a well enclosed on all sides and there is sufficient sheer to ensure drainage aft.
- Cockpit, well deck, and open vessels must meet drainage requirements of 178.420-450.
  - The deck of a cockpit or well deck vessel that operates on a partially protected waters or exposed waters must be more than 10 inches above the deepest load waterline; otherwise it will need to comply with damaged stability and Type II subdivision standards in Subchapter S.

Collision Bulkhead (46 CFR 179.210, 310, 46 CFR 171.085)
- Each vessel >65 ft must have a collision bulkhead.
- A vessel <65 ft must have a collision bulkhead if it carries more than 49 passengers and:
  - operates on exposed waters, or
  - is >40 ft and operates on partially protected waters and/or exposed waters, or
  - is constructed of wood on or after March 11, 2001, and operates in cold water.
- The collision bulkhead must be at least 5% of the length between perpendiculars (LBP) aft of the forward perpendicular.
- The collision bulkhead must be no more than 15% of the LBP aft of the forward perpendicular.
- The collision bulkhead must not have any watertight doors in it.

If the vessel is required to meet damaged stability criteria, then the collision bulkhead may be located at any point further aft than 5 percent of the LBP from the forward perpendicular, provided it passes damaged stability requirements.
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Watertight bulkheads for subdivision (46 CFR 179.212-220, 320)
- All vessels greater than 65 ft must comply with subdivision requirements of Subchapter S
- A vessel <65 ft must comply with subdivision requirements of 179.220 or Subchapter S if,
  - it carries more than 49 passengers, or
  - is constructed of wood after March 11, 2001, and operates in cold water

Watertight Doors (46 CFR 179.330)
- Watertight doors in bulkheads are not permitted unless the vessel will remain within 20 miles of shore and;
  - The door separates a machinery and accommodation space and the OCMI determines the door will be closed except when a person is passing through the door or;
  - The Commandant determines that due to the arrangement the door will be closed except when a person is passing through the door
- See 170.255 for exceptions for Class 1 watertight doors in offshore oil industry vessels
- Watertight door locations shall be in accordance with 46 CFR 179.330

Watertight integrity (46 CFR 179.360)
- Hatches exposed to weather must be watertight
- The following hatches may be weathertight;
  - Hatch on a watertight trunk at least 1 ft above the weather deck
  - A hatch in a cabin top
  - A hatch on a vessel operating on protected waters
- A weathertight door must be provided for each deck house or companionway opening with permanent watertight coamings as below;
  - On exposed or partially protected route, there must be a 6 inch coaming
  - On a protected route there must be a 3 inch coaming

Ensure that potable water tanks on the vessel comply with the requirements of 21 CFR Subchapter L, 46 CFR 1250.82, including the following applicable items:

- Potable water tanks must be independent of any tanks holding non-potable water or other liquids.
- Potable water tanks must be independent of the shell of the ship unless:
  - The bottom of the tank is at least 2 feet above the maximum load waterline,
  - She seams in the shell are continuously welded, and
There are no rivets in that part of the shell which forms a side of the tank.

Toilets or urinals are not permitted directly above a deck which forms the tanktop of a potable water tank.

In accordance with 46 CFR 175.550, the cognizant OCMI may give special consideration to authorizing departures from the specific requirements of 46 CFR Subchapter T when unusual circumstances or arrangements warrant such departures and an equivalent level of safety is provided. The OCMI of each marine inspection zone in which the vessel intends to operate must approve any special consideration granted to the vessel.

This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended to nor does it impose legally-binding requirements on any party. It represents the Coast Guard’s current thinking on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in applying statutory and regulatory requirements. You can use an alternative approach for complying with these requirements if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative, you may contact the Marine Safety Center, the unit responsible for implementing this guidance.