

Marine Safety Center Guidelines for Liftboat and MODU Operating Manual Review

Procedure Number T1-38

Revision Date: 07/01/03

References

- a. 46 CFR 109.121; Operating Manual (MODU)
 - b. 46 CFR 134.170; Operating Manual (Liftboat)
 - c. Navigation and Vessel Inspection Circular 8-91, "Initial and Subsequent Inspection of Existing, Uncertificated Offshore Supply Vessels, including Liftboats"
 - d. COMDTINST M16000.9, Marine Safety Manual, Volume II, Material Inspection, Chapter 35, Section C.10; Operating Manual
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Disclaimer

These guidelines were developed by the Marine Safety Center staff as an aid in the preparation and review of vessel plans and submissions. They were developed to supplement existing guidance. They are not intended to substitute or replace laws, regulations, or other official Coast Guard policy documents. The responsibility to demonstrate compliance with all applicable laws and regulations still rests with the plan submitter. The Coast Guard and the U. S. Department of Homeland Security expressly disclaim liability resulting from the use of this document.

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 the Procedure Number: T1-38

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General Review Guidance

- ❑ Ensure that the submitted MODU operating manual contains the following items (46CFR109.121):
 - ❑ A table of contents
 - ❑ A general index
 - ❑ Limiting design data for each mode of operation, including draft, air gap, wave height, wave period, wind, current, temperature, and other environmental factors
 - ❑ Instructions on the use of stability data
 - ❑ Lightweight data with a comprehensive listing of the inclusions and exclusions of semi-permanent equipment
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- ❑ Guidance for the routine recording of lightweight alterations
- ❑ Information identifying the type, location, and quantities of permanent ballast
- ❑ Hydrostatic curves or tables
- ❑ A capacity plan showing the capacities and the vertical, longitudinal, and transverse centers of gravity of tanks and bulk material stowage spaces
- ❑ Tank sounding tables or curves showing capacities, the vertical, longitudinal, and transverse centers of gravity in graduated intervals, and the free surface data of each tank
- ❑ Stability information setting forth the maximum allowable height of the center of gravity in relation to draft data, displacement, and other applicable parameters unique to the design of the unit to determine compliance with the intact and damage stability criteria
- ❑ Examples of loading conditions for each mode of operation and instructions for developing other acceptable loading conditions
- ❑ Guidance for operating the unit while changing its mode of operation and for preparing the unit to make a move and, for self-elevating units in the transit mode, information for preparing the unit to avoid structural damage during heavy weather, including the positioning and securing of legs, cantilever structures, and heavy cargo or large equipment which might shift position
- ❑ A description of any inherent operational limitations for each mode of operation and for each change in mode of operation
- ❑ Guidance for the person in charge to determine the cause of unexpected list and trim before taking corrective action
- ❑ A general description of the unit, including major dimensions, tonnages, dry bulk capacities, damage stability standard to which designed, hook load capacity, rotary table capacity, set back load capacity, drilling derrick capacity, the maximum deadweight in pounds and kilograms, and the rotor size in feet and meters of the helicopter used for the design of the helicopter deck
- ❑ The maximum allowable deck loadings either listed or shown on a plan
- ❑ Information on the use of special cross flooding fittings for each operating condition which, if damage occurs, may require crossflooding for survival (surface units only) and the location of any valves that may require closure to prevent progressive flooding (all units)
- ❑ Guidance for preparing the unit for passage of a severe storm and the specific actions and approximate length of time to complete them or to attain a designated level of preparedness
- ❑ A description, a schematic, and guidance for operation of the ballast system and of the alternate means of bilge system operation, together with

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a description of their limitations, such as spaces not connected to the bilge system

- ❑ General arrangement plans showing the location of: watertight and weathertight compartments, and openings in the hull and structure; vents, closures, and mechanical, ventilating, and electrical emergency shutdowns; flooding alarms and fire and gas detectors; access to different compartments and decks
 - ❑ A list of emergency shutdowns and guidance on restarting all mechanical, ventilating, and electrical equipment after activation of the emergency shutdowns
 - ❑ Procedures for evacuating the unit
 - ❑ A plan describing the hazardous locations described in 111.105-33
 - ❑ A schematic diagram of the emergency power system
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Liftboats Certificated Under Subchapter I

Ensure that the submitted Liftboat operating manual contains the following items (Navigation and Vessel Inspection Circular 8-91):

- ❑ A table of contents and general index
- ❑ A general description of the vessel including major dimensions, tonnages, variable load capacities, hook load capacity, and helicopter deck loading information.
- ❑ Limiting design data for each mode of operation, including draft, air gap, wave height, wave period, wind, current, temperature, and other environmental factors
- ❑ The maximum allowable deck loadings
- ❑ Information concerning the use of any special cross flooding fittings and location of valves that may require closure to prevent progressive flooding
- ❑ Guidance for preparing the unit for passage of a severe storm and what to do when bad weather conditions are forecast, including when critical events or decisions should be accomplished, such as when to leave the area and head for safe refuge, or evacuate the vessel.
- ❑ Guidance for operating the vessel while changing mode, preparing the vessel to move, and information on how to avoid structural damage during heavy weather from shifting loads.
- ❑ Guidance should include information on inherent operational limitations for each mode of operation and for changing modes, including preloading instructions and how to check buoyant legs for flooding, precautionary information of the stability effects of flooded legs, and information on what to do if flooded legs are found or suspected.

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- ❑ A description, diagram, operating guidance for the bilge system and alternate dewatering methods.
- ❑ A general arrangement diagram showing the location of: watertight and weathertight compartments, and openings in the hull and structure; vents, closures, and mechanical, ventilating, and electrical emergency shutdowns; flooding and level alarms and fire and gas detectors; and access to different compartments and decks
- ❑ A list of emergency shutdowns and guidance on restarting all mechanical, ventilating, and electrical equipment after activation of the emergency shutdowns
- ❑ A diagram of hazardous locations (if required, such as on vessels with workover units)
- ❑ A schematic diagram of the emergency power system
- ❑ Stability instructions including lightship data; hydrostatic curves or tables; tank sounding tables or curves showing vertical, longitudinal, and transverse centers of gravity and free surface data on each tank; and information on the maximum allowable height of the center of gravity (KG) in relation to draft or displacement

Liftboats
Certificated Under
Subchapter L

Ensure that the submitted Liftboat operating manual contains the following items (46CFR134.170):

- ❑ A table of contents
- ❑ A general index
- ❑ Design limits for each mode of operation, including draft, air gap, wave height, wave period, wind, current, temperature, and other environmental factors
- ❑ Guidance on operating the vessel while changing mode and while preparing the vessel to make a move, and information on how to avoid structural damage from shifting loads during heavy weather
- ❑ Information on inherent operational limitations for each mode and on changing modes, including preloading instructions
- ❑ Guidance on the proper procedures for discovering the flooding of a normally buoyant leg or leg pad, precautionary information concerning the effects on stability of flooded legs, and what to do upon discovering the flooding of a normally buoyant leg or leg pad
- ❑ Stability information setting forth the maximum allowable height of the center of gravity in relation to draft data, displacement, and other

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applicable parameters unique to the design of the unit to determine compliance with the intact and damage stability criteria, under 174.250 and 174.255

- ❑ Curves of form as required under 170.075(a)(3). A general description of the vessel, including major dimensions, tonnages, and load capacities for the various cargoes, crane hook, and helicopter landing deck.
- ❑ The highest loads allowable on deck
- ❑ Information on the use of special cross flooding fittings and on the location of valves that may require closure to prevent progressive flooding.
- ❑ Guidance on preparing the vessel for heavy weather and on what to do when heavy weather is forecast, including when critical decisions or acts such as leaving the area and heading for a harbor of safe refuge, or evacuating the vessel, should be accomplished.
- ❑ A description, a diagram, operating guidance for the bilge system, and an alternative method of dewatering
- ❑ General arrangement plans showing the location of: watertight and weathertight compartments, and openings in the hull and structure; vents, closures, and mechanical, ventilating, and electrical emergency shutdowns; flooding alarms and fire and gas detectors; access to different compartments and decks
- ❑ A list of shutdown locations for emergencies and guidance on restarting all mechanical, ventilating, and electrical equipment after shutdowns.
- ❑ A diagram of the hazardous locations (if applicable)
- ❑ A diagram of the emergency power system

Ensure that the maximum KG curve corresponds to the curve approved during the stability review

Ensure the environmental conditions and maximum deck load correspond to those approved during the leg strength review

Ensure that loading conditions match those used in the stability calculations