



NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 8-81, CHANGE 1

Subj: Change 1 to NVIC 8-81, "Initial and Subsequent Inspection of Uncertificated Existing Offshore Supply Vessels under P.L. 96-378"

1. PURPOSE. This Circular transmits a change to Navigation and Vessel Inspection Circular 8-81, "Initial and Subsequent Inspection of Uncertificated Existing Offshore Supply Vessels under P.L. 96-378." This change includes guidance pertaining to certification of a category of previously uninspected, self-elevating offshore service vessels, commonly known as liftboats.
  
2. BACKGROUND. As a result of Coast Guard review of a significant number of casualties involving liftboats and liftboat operations, it has been determined that many of them substantially meet the definition of "Offshore Supply Vessel" (OSV) contained in Title 46, U.S. Code, Section 2101 (19), i.e., "a motor vessel of more than 15 gross tons but less than 500 gross tons that regularly carries goods, supplies, or equipment in support of exploration, exploitation, or production of offshore mineral or energy resources and is not a small passenger vessel." Consequently, uninspected liftboats presently operating within this definition are not in compliance with U.S. inspection laws. Authority already exists in Title 46, Code of Federal Regulations (CFR) 90.05-20 and 46 CFR 175.05-2 to inspect OSVs under the provisions of 46 CFR, Subchapters I and T, according to the vessels' gross tonnage. However, since liftboats are self-propelled vessels capable of arriving at an offshore site and jacking up to create a stable work platform above the seas, their unique design combines features shared by both conventional OSVs and self-elevating mobile offshore drilling units (MODUs). As in the case of conventional OSVs, the Coast Guard has initiated a rulemaking project, CGD 86-074, to promulgate regulations specifically addressing the unique design and operation of liftboats. In the interim, this circular expands the provisions of NVIC 8-81 to afford the owners/operators of liftboats a means to conform with inspection laws until such regulations are finalized.

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2. (cont'd) In preparation of the guidance contained in this circular change, it was determined that while liftboats are not MODUs, it was reasonable to combine 46 CFR, Subchapters I and T with those sections of 46 CFR, Subchapter IA which address the unique characteristics of self-elevating units. This has been done in an effort to establish appropriate equivalent standards from existing regulations, pertinent to liftboats, that may be applied during initial and subsequent inspections for certification. The stability standards outlined in new enclosure (3) are derived directly from those previously applied to many liftboats by Commander, Eighth Coast Guard District (mmt) for loadline considerations.

3. SUMMARY OF CHANGES.

- a. Enclosure (2), change 1 contains updated guidance in application of Coast Guard manning standards to all OSVs, including liftboats.
- b. A new enclosure (3) to NVIC 8-81 contains guidance in applying Coast Guard rules and regulations to existing liftboats in the following major areas, due to the specialized construction and operation of these vessels, and not previously addressed in enclosure (1) to the NVIC:

- (1) Freeboard
- (2) Strength
- (3) Stability
- (4) Machinery Piping Systems
- (5) Hydraulic Systems
- (6) Cranes
- (7) Fire-Fighting Equipment
- (8) Lifesaving Equipment
- (9) Operating Manual
- (10) Vessel Operations

4. IMPLEMENTATION.

- a. Owners/operators of self-elevating offshore service vessels meeting the definition of 46 USC 2101 (19) should make application for inspection for certification to the cognizant officer in charge, marine inspection (OCMI) in whose zone the vessel is operating.

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4. a. (cont'd) After application, owners/operators will be contacted concerning plan submittal and inspection procedures. The guidance contained in this circular pertains only to inspection and certification of liftboats presently built, contracted for, or under construction on the date of publication of this change. Additionally, it is based on the most current information available at the time of publication and has been developed from existing regulations. Therefore, some of the standards applied to existing vessels may be changed when final regulations are published. This is particularly true of the guidance pertaining to stability standards.
- b. Except where modified by new enclosure (3), included with this change, the provisions of enclosure (1) to NVIC 8-81 remain applicable to liftboats.
- c. Remove and discard enclosure (2). Insert enclosures (2) and (3), CH-1.

*J. W. Kime*

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

Encl: (1) Enclosure (2) to NVIC 8-81, CH-1  
(2) Enclosure (3) to NVIC 8-81, CH-1

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MANNING OF OFFSHORE SUPPLY VESSELS

The following minimum manning examples reflect current statutory and regulatory requirements applicable to any vessel meeting the statutory definition of an offshore supply vessel.

Less Than 100 Gross Tons:

1 Master	2 Deckhands
1 Mate	

If the vessel is away from a shoreside dock, or has persons in addition to the crew on board, or both, for not more than 12 hours in any 24 hour period, the crew may be reduced to:

1 Master	2 Deckhands
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When appropriate, and under conditions specified by the OCMI, an additional endorsement permitting a reduction from the 24 hour manning may be made on the Certificate of Inspection for a vessel of less than 100 gross tons which moors to a safe offshore mooring buoy for 12 or more hours in any 24 hour period.

At Least 100 Gross Tons But Less Than 200 Gross Tons: \*

1 Master	2 Able Seamen
2 Mates	1 Ordinary Seaman
**Chief Engineer	**Oiler(s)
**Assistant Engineer(s)	

200 Gross Tons or More: \*

1 Master	2 Able Seamen
2 Mates	1 Ordinary Seaman
1 Chief Engineer	**Oiler(s)
**Assistant Engineer(s)	

\* When the vessel is on a voyage of less than 600 miles, the crew may be reduced by one mate and one able seaman.

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\*\*Variables

The engineering manning is controlled by the statutes 46 USC 8101, 8301, and 8304. On vessels of less than 200 gross tons, there is no requirement for a licensed engineer (chief or assistant) or oilers (QMEDs). However, one or more may be required under 46 USC 8101 if the engineroom is not automated to an acceptable degree or the OCMI determines it necessary for safe operation of the vessel. On vessels of 200 gross tons or more, 46 USC 8304 requires at least a chief engineer, irrespective of the degree of automation. Other assistant engineer(s) and/or QMEDs may also be required by the OCMI under the provisions of 46 USC 8101 if necessary to enable the vessel to safely operate. In general, OSVs are normally automated to such a degree that a licensed engineer or QMEDs will not be required on those vessels in the less than 200 gross ton category, and an assistant engineer or QMEDs will not be required on those of 200 gross tons and above.

Cancelled by NVIC 8-91, dated 2/28/81

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GUIDANCE PERTAINING TO INITIAL AND SUBSEQUENT INSPECTION OF EXISTING LIFTBOATS

In addition to the items listed in enclosure (1) of NVIC 8-81, the following items will be given specific attention during initial and subsequent inspections for certification of existing liftboats, due to their specialized construction and operation, in order to apply the appropriate existing standards indicated.

FREEBOARD. Vessels required to have a loadline are to comply with the provisions of 46 CFR, Subchapter E. Vessels not required to meet loadline regulations are to maintain a minimum freeboard of 2 feet amidships. The vessel's stability letter will restrict operation in the floating mode to wave heights not exceeding 2 times the unit's freeboard unless it can be demonstrated by calculation or model test that the vessel may be safely operated in a higher sea state. The purpose of this restriction is to avoid the adverse effects of excessive water on deck.

STRENGTH. All units should be analyzed for strength using the guidelines of the American Bureau of Shipping (ABS) Rules for Building and Classing Mobile Offshore Drilling Units, 1985 edition, contained in Section 4. In absence of any recognized industry leg strength standard, the K factor or effective length factor which accounts for support conditions at the ends of the unsupported length of column may be assumed to be no less than 2. Additionally, the primary supporting structure is to be analyzed using the loading conditions stipulated by the ABS Rules for Building and Classing Mobile Offshore Drilling Units, 1985 edition, sections 3.5 and 3.9, and take into consideration the allowable stresses of the effective structural elements outlined in section 3.11. The stress calculations should consider the most adverse combinations of loading.

STABILITY. The stability of an existing liftboat is considered adequate if a U.S. Coast Guard Stability Letter or Stability Statement was issued to the vessel and the vessel has not been materially altered since the letter or statement was issued. The vessel owner/operator should state in writing to the cognizant officer in charge, marine inspection (OCMI) that the vessel has not been altered or modified.

If stability of a liftboat has not been evaluated by the Coast Guard, one of the two following criteria should be met. Lightship values that are required to perform the calculations for either criteria may be obtained from an inclining experiment or derived from a detailed weight takeoff verified by a deadweight survey witnessed by the Coast Guard.

1. Unrestricted Operation. A vessel will be permitted to have an unrestricted area of operation if all the provisions of 46 CFR 174, Subpart C are met, within the full range of leg positions encountered while jacking.

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2. Restricted Operation. A vessel unable to meet the criteria for unrestricted operation, but capable of meeting the following provisions, will be restricted to operation within 12 hours of a harbor of safe refuge or a location where it may be elevated to survive 100 knots of wind, at a water depth specified by the stability letter. The loading condition center of gravity (KG) for all loading conditions may not exceed the maximum KG when the wind heeling moment curve is superimposed over the vessel's righting moment curve for:
- a. A 70 knot wind heeling moment criteria for the survival condition and a 60 knot wind heeling moment criteria for normal operating conditions with a 1.4 area ratio requirement when performing the calculations stated in 46 CFR 174.055.
  - b. A 10 degree range of positive stability between the first intercept and second intercept angle, or the angle of heel at which downflooding of the vessel would occur, whichever angle is less.
  - c. At least 5 foot degrees of residual righting energy between the first and second intercept angle, or the angle of heel at which downflooding of the vessel would occur, whichever angle is less.
  - d. In meeting subparagraphs a. through c. above, the minimum metacentric height (GM) is to be 1 foot for all leg positions including the full range of leg positions encountered while jacking.

If a liftboat cannot meet these stability options, a modified criteria may be accepted by the Coast Guard when tied to operating restrictions. Restrictions may include:

1. Decreased route;
2. Maximum allowable water depth permitted for operation;
3. Approved emergency evacuation procedures; and/or
4. Curtailment or change in operation based upon environmental factors including wave height.

MACHINERY PIPING SYSTEMS. Firemain, bilge, and ballast systems should be capable of operation at all times, including the elevated mode. Any arrangement necessary for drawing raw water suction should be permanent.

HYDRAULIC SYSTEMS. Hydraulic jacking systems and other miscellaneous systems should substantially comply with the provisions of 46 CFR 58.30. All jacking systems should be demonstrated to be "fail-safe." A failure of the jacking system should initiate an audible and visual alarm to alert vessel personnel.

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CRANES. All cranes installed aboard liftboats should comply with the guidelines specified in NVIC 4-78.

FIRE-FIGHTING EQUIPMENT. All liftboats should be equipped with a firemain system meeting the requirements of 46 CFR 95.10.

LIFESAVING EQUIPMENT. Primary lifesaving equipment meeting the requirements of 46 CFR 94 should be provided based on vessel tonnage and operating route. Additionally, each life raft required on the vessel should meet the requirements of 46 CFR 108.506 (c). Modification of this requirement may be permitted if it can be demonstrated, to the satisfaction of the Commandant, that an alternate means for safe abandonment of the vessel is provided for all emergency situations.

OPERATING MANUAL. Each unit should be provided with a Coast Guard approved operating manual which is readily usable by vessel personnel and substantially complies with the provisions of 46 CFR 109.121.

VESSEL OPERATIONS. All vessel operations should comply with the requirements of 46 CFR 109, as applicable.

Cancelled by NVIC 8-91, dated 21 MAR 1991.