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PORT STATE CONTROL COMMITTEE INSTRUCTION 58/2025/12

GUIDELINES FOR ON THE INTERNATIONAL CONVENTION ON LOAD LINES

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1. INTRODUCTION

1.1. General

This document is intended to provide guidance on the International Load Lines Convention 1966 (LL66) and its Protocol of 1988 during inspections.

1.2. Application

The Load Lines (LL) Convention applies to:

- new ships for the Convention having a length of 24 m and upwards, and
- existing ships for the Convention having 150 gross tonnage or more,

engaged in international voyages.

A Load Line Certificate shall be issued to every ship which has been surveyed and marked in accordance with the Convention. See Annex 1 for guidance on the type of ship.

Compliance with LL66/Annex I/Ch. II might be recorded in the non-compulsory document "Record of Conditions of assignment"[1]. Although commonly found on vessels, the Record of Conditions of Assignment is not required to be onboard by the Convention.

Article 6 of LL66 regulates exemptions, such as in the case of novel design and where a ship which is normally not engaged on international voyages but which, in exceptional circumstances, is required to undertake a single international voyage. In case the vessel has been exempted from any of the provisions of this Convention, the PSCO should check that a valid Load Line Exemption Certificate is on board.

2. INSPECTION OF A SHIP

2.1 Initial Inspection

According to Article 19(9) of the LL Convention, the endorsed International Load Line Certificate will cease to be valid if:

- material alterations have taken place in the hull or superstructures of the ship such as would necessitate the assignment of an increased freeboard,
- the fittings and appliances for the protection of openings, guard rails, freeing ports and means of access to crew's quarters are not maintained in an effective condition,
- the structural strength of the ship is deemed to have been lowered to such an extent that the ship is unsafe to operate at the assigned freeboard.

During an initial inspection, overall check of the ship hull, as far as could be seen, is to be carried out by the PSCO from the pier or quay in case of boarding the ship from that side, and the opposite side from main deck. This visual inspection can be carried out from the boat in case of boarding the vessel at sea.

[1] The assigning authorities use a record of conditions of assignment to check the watertight integrity of the hull, superstructures, vent heights, overboard discharges, closures, and other conditions required for load line assignment. A copy of the record should be kept on board (although it is not compulsory) and is valid for the life of the vessel provided no changes are made to the vessel.

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2.1.1. Specific documentation regarding structural requirements.

According to LL66 2008 Amend/Annex I/Ch. I/Reg. 1, ships built to the rules of a Classification Society recognized by the ship's flag may be considered as having sufficient strength.

LL66 2003 Amend/Annex I/Ch. II/Reg. 10(1) states that the Master of the ship shall be supplied with sufficient information in an approved form to avoid the creation of any unacceptable stresses when loading and ballasting the ship (unless the Administration deems this information unnecessary for the particular ship). The PSCO's should verify that this information is available on board, or sight proof that the Administration does not require it.

Evidence of thickness measurements in renewal surveys shall be on board ships covered by Enhanced Survey Programme (ESP) or Condition Assessment Scheme (CAS).

For further guidance, please refer to PSCC Instruction "Guidelines for PSCO's on checking ship's hull for thickness measurement on ships other than those covered by ESP and CAS".

2.1.2. Stability and strength data.

LL66 2003 Amend/Annex I/Ch. II/Reg. 10.1) and 2) states that the Master shall be supplied with sufficient information, in an approved form, giving guidance for the stability of the ship under varying conditions of service and to avoid the creation of unacceptable stresses.

Note that:

- In accordance with LL66 2008 Amend/Annex I/Ch. I/Reg. 1.3., ships built before 1 July 2010 shall comply with an intact stability standard acceptable to the Administration. Ships built on or after 1 July 2010 shall, as a minimum, comply with the requirements of part A of the Intact Stability Code (IS 2008). 2008 IS Code/ Part A /Ch. 3 has incorporated the specific IS requirements for passenger ships, oil tankers of 5,000 dwt and above, cargo ships carrying timber deck cargoes, cargo ships carrying grain in bulk and high-speed craft.

- Regarding damage stability LL66 2003 Amend/Annex I/Ch. III/Reg. 27 has specific requirements for damage stability of some ship types (A, B-60 and B-100). These damage stability requirements are usually included in the Stability booklets or incorporated in the approval of damage stability requirements in SOLAS, MARPOL or in other instruments developed by the Organization (IMO).

- If the vessel is assigned a timber freeboard as per LL66 2003 Amend/Annex I/Ch. IV/Reg. 44(7), provision shall be made for margins of stability if the vessel is carrying timber deck cargoes. In this regard, stability requirements as per 2011 TDC Code (Timber Deck Cargoes) may be considered in the approved stability booklet.

The PSCO should ensure that the approved Stability Booklet and strength data, if needed, is on board and where required, and an approved Loading Manual is on board.

If the PSCO from general impression or observations on board has clear grounds for believing that the ship, its equipment or its crew does not substantially meet the requirements, the PSCO should proceed to a more detailed inspection, as in the following sections.

2.2 Clear grounds

"Clear grounds" to conduct a more detailed inspection may include but not limited to:

1. The absence of equipment or arrangements required by the LL66;
2. Evidence from a review that the ship's Load Line Certificate or Certificates are clearly invalid;
3. Evidence that documentation required by LL66 and listed in previous item (Initial Inspection) is not on board, incomplete, not maintained or falsely maintained;
4. Evidence from the PSCO's general impressions and observations that serious hull or structural deterioration or deficiencies exist that may place at risk the structural, watertight or weather tight integrity of the ship;

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5. Evidence from the PSCO's general impressions or observations that serious deficiencies exist in the safety construction of the ship as referred to LL66, and
6. Information or evidence that the master or crew is not familiar with the essential operations and maintenance relating to the integrity, stability and protection of the crew in the ship or that such operations have not been carried out.

2.3 More detailed inspection

A more detailed inspection concerning the Load Line items should cover the following checks as a minimum, in order to verify the maintenance conditions of:

- Hull and deck plating
- Bulwarks and guardrails
- Superstructures, deckhouses, exposed engine casings
- Miscellaneous openings in exposed decks
- Cargo hatches and securing devices
- Small hatches and skylights
- Ventilators
- Air pipes
- Sounding pipes
- Side Scuttles and windows
- Shell doors
- Scupper, inlets and discharges
- Walkways (on tankers)

See Annex 2 for additional guidelines for a more detailed inspection.

3. FOLLOW-UP ACTION

3.1 Possible deficiencies

If areas of corrosion or pitting of plating and associated stiffening are observed during the inspection of the hull then any records of thickness measurements, if available, may be taken into account in deciding whether the corrosion represents significant structural deterioration affecting seaworthiness or strength.

Regardless of whether or not there are relevant thickness measurement records on board, if the PSCO considers that there is significant structural deterioration, then the RO or the flag Administration should be consulted to consider the need for a further survey to verify the maintenance of condition after survey.

3.2 Deficiencies warranting detention

The following deficiencies are considered of such a serious nature that they may warrant the detention of the ship involved. This list is not considered exhaustive but is intended to give an exemplification of relevant items:

- Lack of valid Certificates and documents as required by the relevant instruments.
- Significant areas of damage or corrosion, or pitting of plating and associated stiffening in decks and hull affecting seaworthiness or strength to take local loads, unless proper, approved by the Flag/RO, temporary repairs for a voyage to a port for permanent repairs have been carried out.
- Means of freeing water from the deck not in satisfactory/operational condition.
- Absence of sufficient and reliable information, in an approved form, which by rapid and simple means, enables the master to arrange for the loading and ballasting of his ship in such a way

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that a safe margin of stability is maintained at all stages and at varying conditions of the voyage, and that the creation of any unacceptable stresses in the ship's structure are avoided.

- Absent, substantially deteriorated or defective closing devices, hatch closing arrangements and watertight doors.
- Overloading.
- A recognized case of insufficient stability, such for instance when loading condition doesn't fulfil criteria contained in approved stability booklet (part A, IS 2008)
- Absence of or impossibility to read draught and/or freeboard marks.
- Failure to carry out the enhanced survey programme, missing or not in conformity with SOLAS 2005 Amend/ChXI-1/Reg. 2[2] (in case of bulk carriers and oil tankers) and documentation for those vessels subject to CAS missing or not in conformity with MARPOL 2004 Amend (Oct.)/Annex I/Reg. 20.6.

[2] Also Res. A.744(18).

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ANNEX 1 – SHIP TYPES

The ship types according to LL66 as mentioned in the certificate are following:

- Ship Type 'A'
  A ship designed to carry only liquid cargoes in bulk and in which the cargo tanks have only small access openings closed by weather tight gasket covers of steel or equivalent materials.

- Ship Type 'B'
  Any ship that does not comply with the provisions applicable to type 'A' ships.

- Ship Type 'B+'
  A type 'B' ship required to have increased freeboards. Type 'B+' ships have their freeboards increased because their hatch covers in position 1 either comply with the requirements of LL PROT88[3] - LL66 2003 Amend[4]/Annex I/Ch. II/Reg. 15 (other than paragraph (6) re. pontoon covers) or are fitted with securing arrangements under the provisions of LL PROT88 - LL66 2003 Amend/Annex I/Ch. II/Reg. 16(6).

- Ship Type 'B-60'
  A type 'B' ship with freeboards reduced by 60% of the difference between the required tabular freeboard for a type 'B' ship and a type 'A' ship. The reduction in freeboards for type 'B-60' ships is based on the ship complying with additional conditions laid down in the LL66 covering the following:
  - The protection of crew
  - Freeing arrangements
  - Hatch coamings, covers and their height, strength, sealing and securing
  - Damage stability requirements (single compartment standard).

- Ship Type 'B-100'
  A type 'B' ship with freeboards reduced by 100% of the difference between the required tabular freeboard for a type 'B' ship and a type 'A' ship. Type 'B-100' ships must comply with all the conditions for assignment of 'B-60' freeboards but in addition must satisfy the following requirements as if they were a Type 'B' ship:
  - Arrangements for machinery casings.
  - Arrangements for gangways and access.
  - Arrangements of open guard rails and height of upper edge of sheer strake.
  - Damage stability requirements (two compartment standard)

[3] Only for ships built on or after 21-07-1968 and before 01-01-2005

[4] Only for ships built on or after 01-01-2005

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ANNEX 2 – ADDITIONAL GUIDELINES FOR A MORE DETAILED INSPECTION

In carrying out a more detailed inspection the following is to be considered for an in-depth examination at random:

Loading instrument on board

Some types of vessels shall have a stability instrument, approved by the Administration, on board: gas tankers, chemical tankers, oil tankers, bulk carriers with 150m length or above and passenger ships having length of 120 m or more or having three or more main vertical zones.

In a general way, for vessels whose keels are laid on or after 1st July 2010 and length of 24 m. or above, if a stability instrument is used as a supplement to the stability booklet for the purpose of determining compliance with the relevant stability criteria such instrument shall be subject to the approval by the Administration (Intact Stability Code 2008, Res MSC 267(85)).

For ships which have requirements for damage stability (e.g. ship Types: A, B-60, B-100), loading instruments for checking stability should be capable of checking both damage conditions as well as intact (Intact Stability Code, Part B, epigraph 4.1.3) and not rely solely on intact stability computers.

Protection of hatch openings and of other openings

The PSCO is to verify that these items are properly maintained[5]:

Protection of hatch openings:

- Coamings including deck connections, stiffeners, stays and brackets.
- Hatches fitted with portable covers (wood or steel), portable beams[6], carriers and securing devices, steel pontoons, tarpaulins[6], cleats, battens[6] and wedges, including structural integrity and weather tightness.

Protection of other openings:

- Hatchways, manholes and scuttles in the freeboard deck and superstructure decks.
- Machinery casings, companionways and deck houses protecting openings in the freeboard deck or enclosed superstructure decks.
- Port lights and windows together with dead covers or other openings in the vessel's sides or ends below the freeboard deck in cargo ships, or in passenger vessels below the bulkhead deck, or in way of enclosed superstructures.
- Ventilators, air pipes together with flame screens, scuppers and discharges serving spaces on or below the freeboard deck. Particularly in tankers and tank barges: cargo tank openings, including gaskets, covers and coamings, pressure-vacuum relief valves, flame arrestors and cargo, crude oil washing, bunker, ballast and tank vent piping systems above the weather deck and in the cargo pump rooms and pipe tunnels.
- Watertight bulkheads, bulkhead penetrations, end bulkheads of enclosed superstructures and the operation of any doors in same. In passenger vessels opening and their closures in watertight bulkheads below the bulkhead deck with watertight doors.
- Weather tight doors and closing appliances for all of the above including stiffening, dogs, hinges and gaskets, including weather tight gangways in passenger ships.
- Watertight doors in Ro-Ro cargo spaces, including watertight gangways in passenger ships.

[5] Refer to LL PROT88 - LL66 2003 Amend/Annex I/Ch. II/Reg.12,14,15,16,18, 19, 20, 26 (Type A ships) and 44(1).

[6] This item refers to old vessels but may appear.

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All securing devices must be available and in good condition and no cracks, excessive buckling or heavy corrosion should be observed. Corrosion, fractures or buckling are not considered acceptable in watertight doors in Ro-Ro cargo spaces.

In Ro-Ro and special category spaces due consideration is to be given to watertight doors. In this regard, the sealing arrangements must be in good condition:

- packing (including retaining bars or channels and welding, etc),
- rubber (uniform compression, free of paint, free of fractures or buckling, greased for cold climates, etc.),
- functioning (smooth, uniform, proper engagement of bearings, proper working of devices for locking the doors, interlocks, etc.),
- securing and locking devices.

Random operation of cargo hatch covers may also be requested to be carried out if not interfering with cargo operations in cargo holds. Checking that means of closure are of easy operation may also be carried out especially in watertight bulkheads below bulkhead deck.

In case the PSCO has grounds to believe that the weather or water tightness may be impaired, a hose test may be requested. However, the PSCO should not request this test if the master determines that it could endanger the safety of the ship, crew, passengers, or cargo. For example, the test should be avoided near cargo hatchways if there is a risk of damage or adverse reactions with the cargo, or near instrument panels. Records of Ultrasonic or hose tests of hatch covers during last renewal or intermediate survey, if available, can be considered for evaluating the weather tightness.

In addition to this, random measurement of coaming heights may be carried out in case the PSCO has grounds for believing that they are not in accordance with the record of conditions of freeboard assignment.

Sea valves and overboard discharges, including their attachment to shell[7]

A general examination of machinery and associated piping is to be carried out.

The PSCO should inspect externally and, if needed, randomly operate valves (working closely with the crew to ensure safety) to check those controls for main and auxiliary sea inlet and discharge valves in manned or unmanned machinery spaces[8] are easily accessible. They should also ensure that the hull and distance pieces around the valves are in good condition and that the valves have indicators showing whether they are open or closed. Additionally, on passenger vessels, shell connections, cargo ports, ash and rubbish chutes below the bulkhead deck must be in good condition.

Materials, type of valves, position and fittings should be accepted based on the record of the conditions of assignment of freeboard and therefore no further investigation is required unless clear grounds for non-compliance are found.

Vessel's hull, bulkheads and deck

Deck is to be inspected and in particular the following areas may be taken in consideration:

- Oil tankers with pump room bulkheads may be examined for signs of leakage or fractures.
- Ships with structure changing from longitudinal to transverse primary members at engine room bulkhead (mainly bulk carriers) may be inspected for signs of leakage from deep fuel oil tanks bounding the bulkhead or fractures.

In case that the main deck or the ship's hull is found with cracks, buckling or excessive wastage and no evidence of flag Administration or RO being aware of these defects, or if the condition of the hull and associated structure in general give rise to concern, the flag State/RO should be consulted to consider

[7] Refer to LL PROT88 - LL66 2003 Amend/Annex I/Ch. II/Reg. 22.

[8] For unmanned machinery spaces, valves are not required to be operated remotely provided the inboard end line is ≥0.01 LWL above sea water line and controls for the valve are compliant with SOLAS II-1 R 48.3.

the need for a more detailed survey. Specification of repairs is for the RO and Flag to propose and present to the PSCO to his/her satisfaction.

Significant areas of damage in decks and hull affecting seaworthiness or strength to take local loads may justify the detention of the ship. However, damage that does not affect seaworthiness, or damage that has been temporarily and effectively repaired and verified by the flag Administration/RO for a voyage to a repair port for permanent repairs, is not a reason to detain the ship.

Areas which should be given special attention concerning corrosion problems are permanent sea water ballast tanks, top side tanks (bulk carriers), edges of openings, areas around draining openings and areas of stress concentrations.

If there are clear grounds of vessel cargo holds, ballast tanks or voids being in a poor condition, these compartments may be internally examined if needed provided safe access is guaranteed in accordance with the Port States national risk assessments and procedures.

In special cases, such as aluminum vessels, parts prone to rapid deterioration, especially areas near dissimilar metals, should be in good condition. If an internal examination is conducted in cargo spaces, whether dry or liquid, or any other space deemed necessary by the PSCO, special attention is to be given to bilges and drain wells.

If the PSCO considers that there is significant structural deterioration, then the RO or flag State should be consulted. The flag State / RO surveyor may then propose repairs to be carried out. However, if the PSCO has clear doubts over the proposals of the flag State / RO and the strength of the hull, PSCO may ask to demonstrate by calculation that the structure of the ship remains in compliance with its rules.

Means of protection for crew and means of access[9]

Efficient bulwarks or guard rails of at least one metre height from the deck (with stanchions, wires or chains at openings in between guard rails) on quarters, machinery spaces, deck and parts used for the work[10] of the ship must be found in good condition. Special requirements for protection of the crew on vessels carrying timber on deck are also to be considered if the vessel is assigned a timber freeboard.

In case of tanker ships the compliance with SOLAS 2005 Amend/Ch. II-1/Reg. 3-3 (Safe access to tanker bows, applicable to new and existing tankers[11]) is incorporated in LL66 2003 Amend/Annex I/Ch. II/Reg. 25 and should be verified. Means will be provided to enable the crew to gain safe access to the bow even in severe weather conditions. Such means of access shall be approved by the Administration[12].

Freeing ports[13]

In areas where wells may originate, means for freeing and draining the decks from water must be provided. In this regard the PSCO should verify that these areas are free from obstructions that might impair the proper draining.

Freeboard marks or other marks[14]

Visual inspection is to be carried out as far as feasible to confirm that load line marks (deck line, lines, mark of assigning authority) are the same as those noted in the LL66 Certificate. Marking is to be permanent and in a contrasting color.

[9] Refer to LL PROT88 - LL66 2003 Amend/Annex I/Ch. II/Reg. 25 and 44

[10] As appropriate in accordance with LL Unified interpretations for vessels built after 1982 (LL UI 50) and in accordance with regulation 25-1 for ships under HSSC 88 built after 1 January 2005.

[11] For the purpose of regulation (3-3 and 3-4), tankers include oil tankers as defined in regulation I/ 2, chemical tankers as defined in regulation VII/8.2 and gas carriers as defined in regulation VII/11.2.

[12] The guidelines for safe access to tanker bows were adopted by the Maritime Safety Committee by resolution MSC.62(67).

[13] Refer to LL PROT88 - LL66 2003 Amend/Annex I/Ch. II/Reg. 24.

[14] Refer to LL PROT88- LL66 2003 Amend/Annex I/Ch. II/Reg. 6 to 9 and 45.

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In addition to this PSCO should note that:

- In accordance with LL PROT88 - LL66 2003 Amend/Annex I/Ch. II/Reg. 6.6 where a ship is assigned with a greater than minimum freeboard, so that the load line is marked at a position corresponding to, or lower than, the lowest seasonal load line assigned at minimum freeboard, only the Fresh Water Load Line need to be marked.
- Passenger ships intended for alternating modes of operation may have one or more additional load lines assigned and marked to correspond with the subdivision draughts which the Administration may approve for the alternative service configurations with subdivision load lines assigned, marked and recorded in the Passenger Ship Safety Certificate, and shall be distinguished by the notation C1(P1) for the principal passenger service configuration, and C2(P2), C3(P3).
- High Speed Craft constructed and certified in accordance with HSC 2000 shall be marked with design waterline mark (permanent mark) in accordance with Chapter 2.9.1. of the Code and load line marks in accordance with Chapter 2.9.2 (horizontal bar and ring)
- High Speed Craft constructed and certified in accordance with HSC 1994 shall be marked with design waterline mark[15] in accordance with Chapter 2.9 of the Code.
- Bulk-carriers, general cargo ships and particularly tankers may have concurrent load line assignments. Only one set of markings should be displayed in a contrasting colour on the vessel side. Only the Load line Certificate relating to that mark should be available to be presented. If this is the case the PSCO shall verify that affected certificates (for example IOPP or IEE) due to the change in deadweight or load lines are consistent with the freeboard assigned at the time of the inspection.

In case that clear grounds for non-compliance are found, the PSCO may request measurement of marks and freeboard.

Vessel submerged or loaded beyond the limits allowed by the Certificates[16]

In case the vessel arrives at port with the ring or applicable marks submerged beyond the limits allowed by the Certificates, the vessel is to be considered for detention (unless force majeure is demonstrated). Bulk carriers found loaded with empty or alternate cargo holds, as indicated above, not complying with SOLAS 2004 Amend/Ch. XII/Reg. 5.1 or with heavy cargoes not complying with the restrictions in the booklet required by regulation SOLAS 2008 Amend/Ch.VI/Reg. 7.2 are also to be considered for detention, especially where overstressing of the hull may have occurred. Vessels that are overloaded prior to departure should be considered for detention until the situation is rectified. Care should be taken in these cases as the Convention does not cover submersion of the marks when alongside, which may occur naturally due to cargo operations for example. The marks should not be submerged when the vessel is on a voyage, put to sea or on arrival. Flag Administration and/or RO are to be informed accordingly.

LL PROT88 - LL66 2003 Amend/Annex I/Ch. II/Reg 43(1) and 44 - Special requirements for ships carrying timber.

An examination shall be made of the structural arrangements, fittings and appliances as related to timber load line assignments. Vessel carrying timber cargoes might be in compliance with the Code of Safe Practice for Ships Carrying Timber Deck Cargoes, 2011[17].

[15] Waterline should be distinguished with the notation H.

[16] Refer to LL66/Art 12.

[17] As per Resolution A.1048(27), which revokes A.715(17) or the previous code as per A.287(VIII).