Maritime & Coastguard Agency

MARINE GUIDANCE NOTE

MGN XXX (M)

The Merchant Shipping (Load Line) Regulations 2017

Notice to all Shipowners, Masters, Assigning Authorities and Surveyors

This notice should be read with the Merchant Shipping (Load Line) Regulations 2017

Summary

This MGN provides guidance and clarification on the Merchant Shipping (Load Line) Regulations 2017, which incorporate the International Load Line Convention 1966 and Protocol 1988 in their most recently amended form into UK law. They should be read in conjunction with the international text contained in Annexes I, II and III of the Convention/Protocol **[which may be found at xxxxxxxxxx].**

This MGN deals only with the international load line requirements. Future amendments to the international requirements in Annexes I, II and III will be incorporated into UK law by way of ambulatory reference.

1. Introduction

Clarification of Convention/Protocol requirements

1.1 The Merchant Shipping (Load Line) Regulations 2017 (SI 2017/XXXX) refer to the text of Annexe I, Annex II and Annex III to the International Load Line Convention 1966 (ILLC 1966) and Protocol 1988 (ILLP 1988) as updated from time to time, and incorporating all amendments to date into UK law". All future amendments to the technical Annexes (Annex I to III) will be incorporated by ambulatory reference. (There are four annexes to the ILLC/ILLP but Annex IV does not create any technical requirements within the scope of the international load line regime.)Annex I is further divided into Chapters I to IV. No additional Statutory Instruments (SIs), or amendments to existing SIs will be necessary to bring amendments to the technical requirements into force. It is possible for the Secretary of State to make an SI to prevent an amendment, or part of an amendment, coming into force. However, this is expected to happen rarely, if ever, as the amendments being incorporated will be international obligations with which the UK ships operating internationally will be bound by anyway. (Future amendments to the Articles of the ILLC/ILLP will not be incorporated by ambulatory reference.)

1.2 It is recognised that not all text of international instruments provide sufficient clarity for the requirements to be fully understood and implemented domestically. This includes situations,

for example, where the international obligation provides that a shipowner or shipbuilder does something to the satisfaction of the Administration. This MGN therefore provides additional guidance and clarification (Table 1 in section 2) to assist the reader with compliance on the obligations contained in the regulations of Annex I of the ILLC/ ILLP where this is considered necessary.

1.3 Certain aspects of the regime will not be amended by ambulatory reference and are contained in the Merchant Shipping (Ambulatory Reference) (Load Line) Regulations 2017. Examples include powers to grant exemptions and equivalences, and provision for offences/penalties for non-compliance.

1.4 Some aspects of the ILLC 1966 and ILLP 1988 have International Association of Classification Societies (IACS) Unified Interpretations (UI) which are relevant to them. For the Convention Regulations which are listed in Table 1, relevant IACS UIs are cross referenced, but not all Regulations with UIs associated with them are listed in Table 1. However, Table 2 in section 3 of this MGN lists all Convention Regulations which have UIs associated with them, together with a cross reference to the relevant UI.

Stability information

1.5 Regulation 10(1) of Annex I to the Convention and Protocol require information on the stability of the vessel to be supplied to the Master, and regulation 10(2) creates a need for the flag State administration to specify the format required for the provision of that information. Section 4 of this MGN clarifies the form that information is to take.

Draught of Water and Freeboard/ Particulars of Loading Notice

1.6 Regulation 12 of the Merchant Shipping (Load Line) Regulations 2017 prohibits submersion of a ship's load line in specified circumstances. The Draught of Water and Freeboard Notice at Annex A enables the Master to provide evidence that the necessary calculations have been made after loading and prior to sailing.

1.7 NB: In the context of regulation 12(2) of the Merchant Shipping (Load Line) Regulations 2017, "unit density" means the density of fresh water when uncontaminated with salt water or other substance causing the density of the water in question to vary from the normal density of "pure" fresh water.

Record of Particulars

1.8 The Record of Particulars provided by the Assigning Authority must be held on board the ship to which they relate.

1.9 Article 9 of the Convention/ Protocol states *"Nothing in the present Convention shall prevent an Administration from making specific approvals for experimental purposes in respect of a ship to which the Convention applies"* and *"An Administration which makes any such approval shall communicate to the Organization for circulation to the Contracting Governments particulars thereof"*. Being an Article, this is not transposed by Ambulatory Reference, but is represented by regulation 9 of the Merchant Shipping (Load Line) Regulations 2017, which requires the SoS to advise the IMO of any exemptions or equivalences granted for experimental purposes in respect of arrangements which are not strictly compliant with the ILLC/ILLP standards, but which the UK maritime administration believes there is merit in trialling.

2. Clarification and guidance on specific Regulations within Annex I, to the International Load Line Convention 1966 and Protocol of 1988

2.1 The following guidance and clarification is provided on the international Regulations specified (Annex I). Guidance/ clarification is not provided on every regulation in Annex I, but only where it is considered necessary. This MGN only repeats the text of the Convention/Protocol when it is considered that the international text benefits from clarification or further amplification. It should therefore be read in conjunction with the international text which may be found at **[insert link here].**

Table 1 - Clarification and guidance on specific Regulations within Annex I, to the International Load Line Convention 1966 and Protocol of 1988

International Load Line Convention/ Protocol		Guidance/ clarification of application in UK context
Regulation No.	Obligation	
Regulation 1(3)	*"Ships constructed before 1 July 2010 shall comply with an intact stability standard acceptable to the administration"*.	**Ships of 24 metres or more in length (as defined in the Convention as amended) constructed on or after 21 July 1968 but prior to 1 July 2010** need as a minimum to comply with the technical standards in Annex I as modified by the 1988 Protocol (ie., the international standards in force immediately before 1 January 2005). The minimum criteria are described in Load Line Instructions to Surveyors (ItS) 2.3.2 (see Note 1 for link) full details of which are given in Part 5 of ItS (see Note 2 for link) **Ships of 150 gross tonnes or more constructed prior to 21 July 1968** need as a minimum to comply with the standards in force before 21 July 1968. These may be found in ItS 5.6.5 2. The intact stability standards applied by the UK to ships of 24 metres in length or more constructed on or after 21 July 1968 but before 1 July 2010 were based on IMO Resolution A.749(18) (as amended by IMO Resolution MSC.75(69)), a recommendatory rather than mandatory Code. The intact stability standards generally applied to UK Ships of 150 gross tons or more constructed prior to 21 July 1968

		were based on the recommendations in IMO Resolution A.167(ES.IV).
Regulation 2(3)	*"Additional freeboard may be required as determined by the Administration"*	**Sailing ships and tugs –** freeboards calculated as prescribed in the Convention may be increased by, and to the extent, the Secretary of State may determine.
Regulation 2(4)	"*Ships of wood or of composite construction, or of other materials the use of which the Administration has approved, or ships whose constructional features are such as to render the application of the provisions of this Annex unreasonable or impracticable, shall be assigned freeboards as determined by the Administration*".	**Ships of wood, composite construction or of other materials –** freeboards to be assigned to these ships, or ships with constructional features such as to render freeboards calculated in accordance with the Convention unreasonable or impracticable, will be determined by the Assigning Authority. (In this context, "composite construction" means ships built with wooden planking on steel or wrought iron framing.)
Regulation 2(5)	*"Regulations 10 to 26, inclusive, shall apply to every ship to which a minimum freeboard is assigned. Relaxations from these requirements may be granted to a ship to which a greater than minimum freeboard is assigned, on condition that the Administration is satisfied with the safety conditions provided".*	The UK administration follows UI LL.51 Rev 2 in relation to the assigning freeboards greater than the minimum.
Regulation 8	This Regulation requires ships to be *"permanently marked on the sides of the ships to the satisfaction of the Administration"*.	The UK acceptable standard in this is in accordance with IACS Unified Interpretation (UI) LL.4 which includes *" … welding of the marks on the sides if the ship provided the usual precautions as to material, electrodes, etc., are observed."*
Regulation 9		Regulation 9 of the Merchant Shipping (Load Line) Regulations 2017 (taken from Article 9 of the ILLC/ILLP) requires the SoS to advise the IMO of any exemptions or equivalences granted for experimental purposes in respect of arrangements which are not strictly compliant with the ILLC/ILLP standards, but which the UK maritime administration believes there is merit in trialling.

Regulation 10(2)	That the information to be provided to the Master in Regulation 10(1) must be *" … in a form that is approved by the Administration or Recognised Organization"*.	For ships built prior to 1 July 2010, the UK requires that the information is provided in the form of a Stability Book, the form and content of which is prescribed in Annex C. Ships constructed on or after 1 July 2010 must comply with the 2008 Intact Stability (IS) Code (see MSC.270(85)) which contains (in Part B, Regulation 3.6) recommendations on the form and content of the approved stability information to be provided to the master. Although MSC.270(85) strictly only requires adherence to the mandatory requirements in part A of the 2008 IS Code, we recommend that all the sections of the Code relevant to the provision of approved stability information to the master be applied. For ships constructed on or after 1 July 2010, the 2008 IS Code supersedes earlier IMO Resolutions, such as A.167(ES.IV) and A.749(18) and Schedule 6 of MSN 1752(M) in this respect.
Regulation 11	*"Bulkheads at exposed ends of enclosed superstructures shall be of an acceptable level of strength".*	For the UK, "an acceptable level of strength" in this context means complying with the highest standard of structural strength required by the Rules of an Assigning Authority" (reference Instructions to Surveyors 2.2.1).
Regulation 12(2)	*"Unless otherwise permitted by the administration, doors shall open outwards to provide additional security against the impact of the sea"*.	The UK will only permit deviation from this standard in specific circumstances of practical need, determined on a case by case basis by the Assigning Authority, and only if satisfied that an equivalent level of safety to an outward-opening door is achieved. Where, in exceptional circumstances, the doors are permitted to open inwards, the framing of the door panel and the securing arrangements of the door will be specifically considered.
Regulation 14(1)	*"The construction and means for securing the weathertightness of cargo and other hatchways in position 1*	It should be noted that "new ships", as defined in the Merchant Shipping (Load Line) Regulations 2017, (i.e., for

	and 2 shall be at least equivalent to the requirements of regulation 16, unless the application of regulation 15 to such hatchways is granted by the Administration."	UK registered ships, those built after 21 July 1968) are expected to comply with the requirements of regulation 16 of Annex I to the Convention/Protocol. Also, the application of regulation 15 of Annex I to the Convention/Protocol will only be granted to other ships where there is a specific need such as for historic or replica vessels and the Secretary of state is satisfied that a minimum level of safety is achieved. Owners, Masters and Skippers are also reminded that proceeding to sea with improperly fitting hatch covers, defective cleats, wedges, battens or tarpaulins constitutes non-compliance with the "Conditions of Assignment" and as such is an offence under Regulation 27(1) of the Merchant Shipping (Load Lines) Regulations 2017.
Regulation 14(2)	*"Coamings and hatchway covers to exposed hatchways on decks above the superstructure deck shall comply with the requirements of the Administration"*.	The UK requirement in this context is simply that such coamings and hatchway covers shall comply with the requirements of the Assigning Authority, taking into account their position as defined in Annex I regulation 13 (in association with its Unified Interpretation (ref. IMO MSC.1/Circ.1535)).
Regulation 14-1(2)	*"In the case of hatchways which comply with regulation 16(2) through (5), the height of these coamings may be reduced, or the coamings omitted entirely, on condition that the Administration is satisfied that the safety of the ship is not thereby impaired in any sea conditions."*	The UK will accept coamings of reduced height provided that they can withstand the wave loadings in regulations 16(2) through (4) and not exceed the stress levels in 16(5); in other words they should be at least as strong and seaworthy as the hatch covers they support. Coamings may be omitted entirely provided that the hatch covers and securing arrangements are tested for weathertightness in any sea condition.

Regulation 15(7)	*"The strength and stiffness of covers made of materials other than mild steel shall be equivalent to those of mild steel to the satisfaction of the Administration."*	To satisfy the UK Administration, covers made of wood must be in compliance with regulation 15(2) of the Convention/ Protocol, and where the span exceeds 1.5 metres, the UK requires thickness of covers to be increased by 4 millimetres for each 100 millimetres above the span of 1.5 metres. For tarpaulin covers, these must comply with the requirements in regulation 15(11). Any other material will be considered on a case by case basis. The UK follows UI LL.20 Rev 1 hatch beams and cover stiffeners of variable cross section.
Regulation 15(11)	*"At least two layers of tarpaulin in good condition shall be provided for each hatchway in position 1 or 2. The tarpaulins shall be waterproof and of ample strength. They shall be of a material of at least an approved standard weight and quality."*	This will be determined on a case by case basis by the Assigning Authority.
Regulation 16(1)	*"All hatchways in position 1 and 2 shall be fitted with hatch covers of steel or other equivalent material. Except as provided in regulation 14(2), such covers shall be weathertight and fitted with gaskets and clamping devices. The means for securing and maintaining weather-tightness shall be to the satisfaction of the Administration."*	This will be decided on a case by case basis by the Assigning Authority following IACS Recommendation 14. A test of weathertightness should be carried out in accordance with Recommendation 14 at the installation of the hatch and at the subsequent periodical surveys or after substantial repairs.
Regulation 16(6)	*"The means for securing and maintaining weathertightness by other means than gaskets and clamping shall be to the satisfaction of the Administration."*	This will be decided on a case by case basis by the Assigning Authority following IACS Recommendation 14. A test of weathertightness should be carried out in accordance with Recommendation 14 at the installation of the hatch and at the subsequent periodical surveys or after substantial repairs.

Regulation 17(4)	*"Where due to ship size and arrangement this is not practicable, lesser heights for machinery space and emergency generator room ventilator coamings, fitted with weathertight closing appliances in accordance with regulation 19(4), may be permitted by the Administration in combination with other suitable arrangements to ensure an uninterrupted, adequate supply of ventilation to these spaces."*	This will be decided on a case by case basis by the Assigning Authority. A lower height may be approved provided that the Surveyor is satisfied that the closing appliances and other relevant circumstance justify it.
Regulation 19(3)	*"Ventilators in position 1 the coamings of which extend to more than 4.5 m above the deck, and in position 2 the coamings of which extend to more than 2.3 m above the deck, need not be fitted with closing arrangements unless specifically required by the Administration."*	This will be decided on a case by case basis by the Assigning Authority. Closing appliances need not be fitted unless the fitting of such an appliance is considered necessary by the Assigning Authority in order to provide adequate protection.
Regulation 19(5)	*"In exposed locations, the height of coamings may be increased to the satisfaction of the Administration."*	Where the coaming for any ventilator referred to in regulation 19(1) is situated in a position in which it will be specially exposed to weather and sea, the height of the coaming should be increased by such an amount as is necessary to provide adequate protection having regard to its position. This will be decided on a case by case basis by the Assigning Authority.
Regulation 20(2)	*"Where these heights may interfere with the working of the ship, a lower height may be approved, provided that the Administration is satisfied that the closing arrangements and other circumstances justify a lower height."*	The heights may be reduced if: a) the working of the ship would be unreasonably impaired if those heights were adhered to; and b) the closing arrangements will ensure that the lower height is adequately compensated. This will be decided on a case by case basis by the Secretary of State.

Regulation 21(1)	*"Cargo ports and other similar openings in the sides of ships below the freeboard deck shall be fitted with doors so designed as to ensure the same watertightness and structural integrity as the surrounding shell plating. Unless otherwise granted by the Administration, these opening shall open outwards."*	This will be decided on a case by case basis by the Secretary of State, but variation will only be permitted in exceptional circumstances. The UK will only permit inward opening doors in specific circumstances of practical need, determined on a case by case basis, and only if satisfied that an equivalent level of safety to an outward-opening door is achieved. Where, in exceptional circumstances, the doors are permitted to open inwards, the framing of the door panel and the securing arrangements of the door will be specifically considered.
Regulation 21(2)	*"Unless otherwise permitted by the Administration, the lower edge of openings referred to in paragraph (1) shall not be below a line drawn parallel to the freeboard deck at side, which is at its lowest point at least 230 mm above the upper edge of the uppermost load line."*	This will be decided on a case by case basis by the Secretary of State, but variation will only be permitted in exceptional circumstances.
Regulation 21(5)	*"Arrangements for bow doors and their inner doors, side doors and stern doors and their securings shall be in compliance with the requirements of a recognised organization, or with the applicable national standards of the Administration which provide an equivalent level of safety."*	The UK accepts IACS Unified interpretation SC 220 (previously LL.32), which relates to vehicle ferries, ro-ro ships and others ships of a similar type, for this purpose. This will be determined by the Assigning Authority.
Regulation 22(6)	*"All shell fittings and the valves required by this regulation shall be of steel, bronze or other approved ductile material. Valves of ordinary cast iron or similar material are not acceptable. All pipes to which this regulation refers shall be of steel or other equivalent material to the satisfaction of the Administration."*	
Regulation 23(1)	*"Sidescuttles and windows, together with their glasses, deadlights and storm covers, if fitted, shall be of an approved design and substantial construction".*	*The UK accepts side scuttles built to BS ISO 1751:2012.*

Regulation 25(2)	*"Guard rails or bulwarks shall be fitted around all exposed decks. The height of the bulwarks or guard rails shall be at least 1 m from the deck, provided that where this height would interfere with the normal operation of the ship, a lesser height may be approved, if the Administration is satisfied that adequate protection is provided."*	Requests for fitting bulwarks or guard rails of lesser height will be dealt with on a case by case basis by the Secretary of State.
Regulation 27(13)(f)	One of the requirements for the Condition of Equilibrium of the ship to be considered satisfactory is that *"The Administration is satisfied that the stability is sufficient during intermediate stages of flooding."*	This is a judgement which will be made based on the expertise of the individual surveyor tasked with the role of assessing the stability of the ship.
Regulation 28	Freeboard Tables in Regulation 28 bear an accompanying note to the effect that *"Ships above 365 metres in length shall be dealt with by the Administration.*	In Regulation 28(1), Freeboard Table for Type 'A' Ships, the UK accepts IACS Unified Interpretation LL.18 Rev.1, which states: (i) Freeboards for Type A ships with lengths between 365 m and 400 m should be determined by the following formula: $f = 221 + 16.10L - 0.02L^2$ where f is the freeboard in millimetres L is the length as defined in Regulation 3(1). (ii) Freeboards for Type A ships with lengths of 400 m and above should be the constant value, 3460 millimetres. In Regulation 28(2), Freeboard Table for Type 'B' Ships, the UK accepts IACS Unified Interpretation LL.18 Rev.1, which states: (i) Freeboards for Type B ships with lengths between 365 m and 400 m should be determined by the following formula: $f = -587 + 23L - 0.0188L^2$ where f is the freeboard in millimetres

		L is the length as defined in Regulation 3(1). (ii) Freeboards for Type B ships with lengths of 400 m and above should be the constant value, 5605 millimetres.
Regulation 39(3)	*"Ships which, to suit exceptional operational requirements, cannot meet the requirements of paragraphs (1) and (2) of this regulation may be given special consideration by the Administration."*	This will be decided on a case by case basis by the Secretary of State.
Regulation 44(6)	*"Timber deck cargo shall be effectively secured throughout its length by a lashing system acceptable to the Administration for the character of the timber carried."*	The UK position is that a ship complying with the IMO Code of Safe Practice for Ships carrying Timber Deck Cargos (Resolution A.715(17), as amended) is deemed compliant with the lashing requirements in this regulation. Deck cargo shall be so secured as to ensure, as far as practicable, that there will be no movements of that cargo relative to the ship in the worst sea and weather conditions which may normally be expected on the voyage; and lashings and all fittings used for their attachment shall be of adequate strength for that purpose.
Regulation 44(9)	*"Where the requirements prescribed in paragraph (8) are impracticable, alternative arrangements satisfactory to the Administration shall be used."*	This will be decided on a case by case basis by the Secretary of State.

1 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/287962/loli_pt2.pdf

2 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/287965/loli_pt5.pdf

3. IACS Unified Interpretations (UI) and Unified Requirements (URs) relevant to the ILLC/ ILLP

3.1 The following Table shows any articles and regulations within the ILLC/ ILLP which have UIs or URs associated with them.

Table 2 - International Load Line Convention 1966 and Protocol of 1988 Regulations which have IACS Unified Interpretations or Unified Requirements applicable to them

International Load Line Convention/ Protocol Article/ Regulation No.	Applicable IACS Unified Interpretation or Requirement
Annex A:	
Article 2(6) to (8)	LL.71 Rev 1 – Similar stage of construction
Article 4(4)	LL.1 - Application
Article 18	LL.19 – Form of Certificates
Annex B, Annex I:	
Regulation 2(5)&(6)	LL.51 Rev 2 – Freeboards greater than minimum
Regulation 2(6) to (8)	LL.71 Rev 1 - Similar stage of construction
Regulation 3(5)(c)	LL.48 Rev 2 – Moulded depth and Freeboard calculation
Regulation 3(6)(b)	LL.2 Rev 1 – Depth of Freeboard
Regulation 3(9)	LL.48 Rev 2 – Moulded depth and Freeboard calculation LL.68 (see also LL.3/Circ.162, paragraph 3) – Position of freeboard deck on float on/ float off barge carriers
Regulation 8	LL.4 Rev 1 – Details of marking
Regulation 11	UR(S) 3 – Strength of End Bulkheads of Superstructures and Deckhouses
Regulation 12	UR(S) 8 & 16 – Bow Doors and Inner Doors UR(S) 9 & 15 – Side Shell Doors and Stern Doors
Regulation 12(4)	LL.5 Rev 1 - Doors
Regulation 15(3) to (7)	LL.20 Rev 1 – Hatch beams and cover stiffeners of variable cross section
Regulation 15(12)	LL.40 Rev 2 – Security of hatchway covers
Regulation 16(1)	LL.20 Rev 1 – Hatch beams and cover stiffeners of variable cross section LL.6 Rev 3 – Hatchways closed by weathertight covers of steel or other equivalent material fitted with gaskets and clamping devices UR(S) 14 – Hatch Cover Securing and Tightness UR(S) 21 & 30 – Evaluation of Scantlings of Hatch Covers and Hatch Coamings of Cargo Holds of Bulk Carriers, Ore Carriers and Combination Carriers UR(S) 21A – Evaluation of Scantlings of Hatch Covers and Hatch Coamings and Closing Arrangements of Cargo Holds of Ships UR(S)26 – Strength and Securing of Small Hatches on the Exposed Fore Deck
Regulation 16(5)	LL.66 (see also LL.3/Circ. 162 paragraph 2 – Hatch cover stress/ deflection calculation)
Regulation 16(6)	UR(S) 14 – Hatch Cover Securing and Tightness
Regulation 17(2)	LL.7 Non-protected machinery spaces.
Regulation 18(2)	LL.8 Rev 1 – Miscellaneous openings in freeboard and superstructure decks UR(S)26 – Strength and Securing of Small Hatches on the Exposed Fore Deck

Regulation 19(4)	LL.58 Rev 1 – Machinery space and emergency generator room ventilator coaming heights LL.52 Rev 1 – Weathertight closing appliances for ventilators UR(S) 27 – Strength Requirements for Fore Deck Fittings and Equipment
Regulation 19(5)	LL.36 Rev 2 – Minimum wall thickness of ventilator pipes UR(S) 27 – Strength Requirements for Fore Deck Fittings and Equipment
Regulation 20(3) to (4)	LL.36 Rev 2 – Minimum wall thickness of ventilator pipes LL.49 Rev 1 – Air pipe closing devices UR(S) 27 – Strength Requirements for Fore Deck Fittings and Equipment
Regulation 21	UR(S) 8 & 16 – Bow Doors and Inner Doors UR(S) 9 & 15 – Side Shell Doors and Stern Doors
Regulation 21(5)	SC220 (formerly LL.32), LL.62, LL.12, LL.46.
Regulation 24	LL.13, LL.44 & LL60 (Now all included in the text of Regulation 24)
Regulation 24(1)(g)	LL.59 Rev 1 – Cargo manifold gutter bars – freeing arrangements and intact stability
Regulation 25(2)	LL.14 (corr.1 Oct 2015) – Guard rail required for first tier deckhouses and for superstructures' ends
Regulation 25(3)(b)	LL.47 Rev 3 – Alternative arrangements concerning stantions of increased breadth (see also LL.3/Circ. 194).
Regulation 25, Table 25-1	LL.50 Rev 5 – Deviations from requirements in Table 25-1 (Now partially included in the Table)
Regulation 26(6)	LL.59 Rev 1 – Cargo manifold bars – freeing arrangements and intact stability (see also LL.3/Circ. 194)
Regulation 27(3)	LL.75 (see also LL.3/Circ.194) – Types of ship
Regulation 27(7)	LL.6 Rev 3 – Hatchways closed by weathertight covers of steel or other material fitted with gaskets and clamping devices
Regulation 27(8)	UR(S) 17 – Longitudinal Strength of Hull Girder in Flooded Condition for Non-CSR Bulk Carriers UR(S) 18 – Evaluation of Scantlings of Corrugated Transverse Watertight Bulkheads in Non-CSR Bulk Carriers Considering Hold Flooding UR(S) 19 – Evaluation of Scantlings of the Transverse Watertight Corrugated Bulkhead between Cargo Holds Nos. 1 and 2, with Cargo Hold No. 1 Flooded, for Existing Bulk Carriers
Regulation 27(8)(d)	LL.75 (see also LL.3/Circ.194) – Types of ship
Regulation 27(12)	LL.69 Rev 1 (see also LL.3/Circ. 162(2) – Treatment of the forecastle, which is located over the foremost cargo hold for damage stability calculation
Regulation 27(14)	LL.34 Corr.1 – Freeboards for lighters and barges
Regulation 27(14)(c)	LL.42 Rev 1 – Access openings on barges
Regulation 28(1)	LL.18 Rev 1 – Freeboard Tables for Type A Ships
Regulation 28(2)	LL.18 Rev 1 – Freeboard Tables for Type B Ships
Regulation 29	LL.41 Rev 1 - Trunks
Regulation 31	LL.41 Rev 1 - Trunks
Regulation 32	LL.48
Regulation 34	LL.15 (see also LL.3/Circ.162 paragraph 1) – Length of superstructure

	LL.37 - Relating to superstructure sloping bulkheads
Regulation 35	LL.41 Rev 1 – Trunks (LL.37, LL.54, LL.54, LL.25?)
Regulation 36	LL.41 Rev 1 – Trunks (LL.26, LL.27?)
Regulation 37	LL.41 Rev 1 – Trunks
Regulation 38	LL.41 Rev 1 – Trunks (LL.29, LL.16, LL.30, LL.31?)
Regulation 39	LL.38
Regulation 40(1)	LL.48 Rev 2 - Moulded depth and Freeboard calculation

More Information

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Annex A

STABILITY INFORMATION

Part I – Information to be provided for the Master

The information relating to the stability of a ship to be provided for the master shall include the particulars specified below.

1. The ship's name, official number, port of registry, gross and register tonnages, principal dimensions, displacement, deadweight and draught to the Summer load line.

2. A profile view and, if necessary, plan views of the ship drawn to scale showing all compartments, tanks, storerooms and crew and passenger accommodation spaces, with their position relative to mid-ship.

3. (1) The capacity and the longitudinal and vertical centre of gravity of every compartment available for the carriage of cargo, fuel, stores, feedwater, domestic or water ballast.

(2) In the case of a vehicle ferry, the vertical centre of gravity of compartments designated for the carriage of vehicles shall be based on the estimated centres of gravity of the vehicles and not on the volumetric centres of the compartments.

4. (1) The estimated total weight and the longitudinal and vertical centre of gravity of each such total weight of –

(a) the passengers and their effects; and

(b) the crew and their effects.

(2) In estimating such centres of gravity, passengers and crew shall be assumed to be distributed about the ship in the spaces they will normally occupy, including the highest decks to which either or both have access.

5. (1) The estimated weight and the disposition and centre of gravity of the maximum amount of deck cargo which the ship may reasonably be expected to carry on an exposed deck.

(2) In the case of deck cargo, the arrival condition shall include the weight of water likely to be absorbed by the cargo. (For timber deck cargo the weight of water absorbed shall be taken as 15 per cent of the weight when loaded.)

6. A diagram or scale showing –

(a) the load line mark and load lines with particulars of the corresponding freeboards; and

(b) the displacement, tonnes per centimetre immersion, and deadweight corresponding to a range of mean draughts extending between the waterline representing the deepest load line and the waterline of the ship in light condition.

7. (1) A diagram or tabular statement showing the hydrostatic particulars of the ship, including the heights of the transverse metacentre and the values of the moment to change trim one centimetre. These particulars shall be provided for a range of mean draughts extending at least between the waterline representing the deepest load line and the waterline of the ship in light condition.

(2) Where a tabular statement is used to comply with subparagraph (1), the intervals between such draughts shall be sufficiently close to permit accurate interpolation.

(3) In the case of ships having raked keels, the same datum for the heights of centres of buoyancy and metacentres shall be used as for the centres of gravity referred to in paragraphs 3, 4 and 5.

8. The effect on stability of free surface in each tank in the ship in which liquids may be carried, including an example to show how the metacentric height is to be corrected.

9. (1) A diagram or table showing cross curves of stability, covering the range of draughts referred to in paragraph 7(1).

(2) The information shall indicate the height of the assumed axis from which the righting levers are measured and the trim which has been assumed.

(3) In the case of ships having raked keels and where a datum other than the top of keel has been used, the position of the assumed axis shall be clearly defined.

(4) Subject to subparagraph (5), only enclosed superstructures and efficient trunks as defined in paragraph 10 of Schedule 4 shall be taken into account in deriving such curves.

(5) The following structures may be taken into account in deriving such curves if the Secretary of State is satisfied that their location, integrity and means of closure will contribute to the ship's stability –

(a) superstructures located above the superstructure deck;

(b) deckhouses on or above the freeboard deck whether wholly or in part only;

(c) hatchway structures on or above the freeboard deck.

(6) Subject to the approval of the Secretary of State in the case of a ship carrying timber deck cargo, the volume of the timber deck cargo, or a part thereof, may be taken into account in deriving a supplementary curve of stability appropriate to the ship when carrying such cargo.

(7) An example shall be included to show how a curve of righting levers (GZ) may be obtained from the cross curves of stability.

(8) In the case of a vehicle ferry or a similar ship having bow doors, ship-side doors or stern doors where the buoyancy of a superstructure is taken into account in the calculation of stability information, and the cross curves of stability are based upon the assumption that such doors are secured weathertight, there shall be a specific warning that such doors must be secured weathertight before the ship proceeds to sea.

10. (1) The diagram and statements referred to in subparagraph (2) shall be provided separately for each of the following conditions of the ship –

(a) *light condition.* If the ship has permanent ballast, such diagram and statements shall be provided for the ship in light condition both with and without such ballast;

(b) *ballast condition both on departure and on arrival*. It is to be assumed that on arrival oil fuel, fresh water, consumable stores and the like are reduced to 10 per cent of their capacity;

(c) *condition on departure and on arrival when loaded to the Summer load line with cargo filling all spaces available for cargo.* Cargo shall be taken to be homogeneous except where this is clearly inappropriate, for example, in cargo spaces which are intended to be used exclusively for the carriage of vehicles or of containers;

(d) *service loaded conditions both on departure and on arrival.*

(2) (a) A profile diagram of the ship drawn to a suitable small scale showing the disposition of all components of the deadweight.

(b) A statement showing the lightweight, the disposition and the total weights of all components of the deadweight, the displacement, the corresponding positions of the centre of gravity, the metacentre and also the metacentric height (GM).

(c) A diagram showing the curve of righting levers (GZ). Where credit is given for the buoyancy of a timber deck cargo the curve of righting levers (GZ) must be drawn both with and without this credit.

(d) A statement showing the elements of stability in the condition compared to the crieria laid down in Schedule 2 paragraph 2(2).

(3) The metacentric height (GM) and the curve of righting levers (GZ) shall be corrected for liquid free surface.

(4) Where there is a significant amount of trim in any of the conditions referred to in subparagraph (1) the metacentric height and the curve of righting levers (GZ) may be required to be determined from the trimmed waterline.

(5) If in the view of the Assigning Authority the stability characteristics in either or both of the conditions referred to in subparagraph (1)(c) are not satisfactory, such conditions shall be marked accordingly and an appropriate warning to the master shall be inserted.

11. A statement of instructions on appropriate procedures to maintain adequate stability in each case where special procedures are applied such as partial or complete filling of spaces designated for cargo, fuel, fresh water or other purposes.

12. The report on the inclining test and of the calculation derived from it to obtain information of the light condition of the ship.

<u>Part II – Ships in Relation to which the Secretary of State's or the Assigning Authority's approval of the stability information is required</u>

13. The ships referred to in regulation 32(3), (4)(a) and (5)(a) of the Regulations are as follows:

(a) an oil tanker over 100 metres in length;

(b) a bulk carrier, or an ore carrier, over 150 metres in length;

(c) a single deck bulk carrier over 100 metres in length but not exceeding 150 metres in length;

(d) a single deck dry cargo ship over 100 metres in length;

(e) a purpose built container ship over 125 metres in length;

(f) a column stabilised mobile offshore drilling unit; or

(g) a column stabilised mobile offshore support unit.

14. In paragraph 13 –

“mobile offshore drilling unit” means a ship capable of engaging in drilling operations for the exploration or exploitation of resources beneath the sea bed such as liquid or gaseous hydrocarbons, sulphur or salt;

“mobile offshore support unit” means a ship used in connection with the offshore petroleum industry to provide ancillary services such as accommodation, cranes or repair facilities; and

“column stabilised” means constructed with the main deck of the unit connected to its underwater hull or footings by columns or caissons.

Draught of Water and Freeboard Notice

MSF 2004 / REV 0605

SHIP _____ **PORT OF REGISTRY** _____ **GROSS TONNAGE** _____

(1) Summer freeboard _____ millimetres corresponding to a mean draught of _____ millimetres

(2) Winter freeboard _____ millimetres corresponding to a mean draught of _____ millimetres

(3) Tropical freeboard _____ millimetres corresponding to a mean draught of _____ millimetres

(4) Winter North Atlantic freeboard _____ millimetres corresponding to a mean draught of _____ millimetres

(5) Allowance for fresh water for all freeboards other than Timber freeboards _____ millimetres

(6) Timber Summer freeboard _____ millimetres corresponding to a mean draught of _____ millimetres

(7) Timber Winter freeboard _____ millimetres corresponding to a mean draught of _____ millimetres

(8) Timber Tropical freeboard _____ millimetres corresponding to a mean draught of _____ millimetres

(9) Timber Winter North Atlantic freeboard _____ millimetres corresponding to a mean draught of _____ millimetres

(10) Allowance for fresh water for Timber freeboards _____ millimetres

NOTES:

1. The particulars to be given above of freeboards and allowances for fresh water to be taken from the load line certificate currently in force in respect of the ship.
2. All freeboards given on the load line certificate must be stated.
3. The mean draught to be given above is the mean of the draughts which would be shown on the scales of measurement on the stem and on the sternpost of the ship if it were so loaded that the upper edge of the load line on each side of the ship appropriate to the particular freeboard were on the surface of the water.
4. Where the draught is shown on the scales of measurement on the stem and on the stem post of the ship in feet the mean draught must be given in millimetres.

1	2	3	4	5	6	7	6	9
DATE	PLACE	ACTUAL DRAUGHT			MEAN FREEBOARD		SIGNATURE OF MASTER AND AN OFFICER	
		FORWARD	AFT	MEAN	ACTUAL	CORRECTED (See Note 3)	MASTER	AN OFFICER

PARTICULARS OF LOADING

Notes

1. The actual mean freeboard (Column 6) is the mean of the freeboards on each side of the ship at the time when the ship is loaded and ready to leave.
2. If the actual mean freeboard is less than the appropriate minimum saltwater freeboard as shown on the load line certificate there must be entered in Column 7 the corrected freeboard arrived at after making any allowances for density of water, rubbish to be discharged overboard and fuel, water and stores to be consumed on any stretch of river or inland water, being allowances duly entered in the ship's official log-book.
3. If the actual mean freeboard is greater than the appropriate salt water freeboard, Column 7 need not be filled in.

(FORMERLY FRE 13)

An executive agency of the Department for Transport

Annex C

INTERNATIONAL CONVENTION ON LOAD LINES, 1966

RECORD OF CONDITIONS OF ASSIGNMENT

Name of ship ……..

Port of registry ……

Nationality ……...

Distinctive number or letters ……

Shipbuilders ……

Yard number ……...

Date of construction/conversion …….

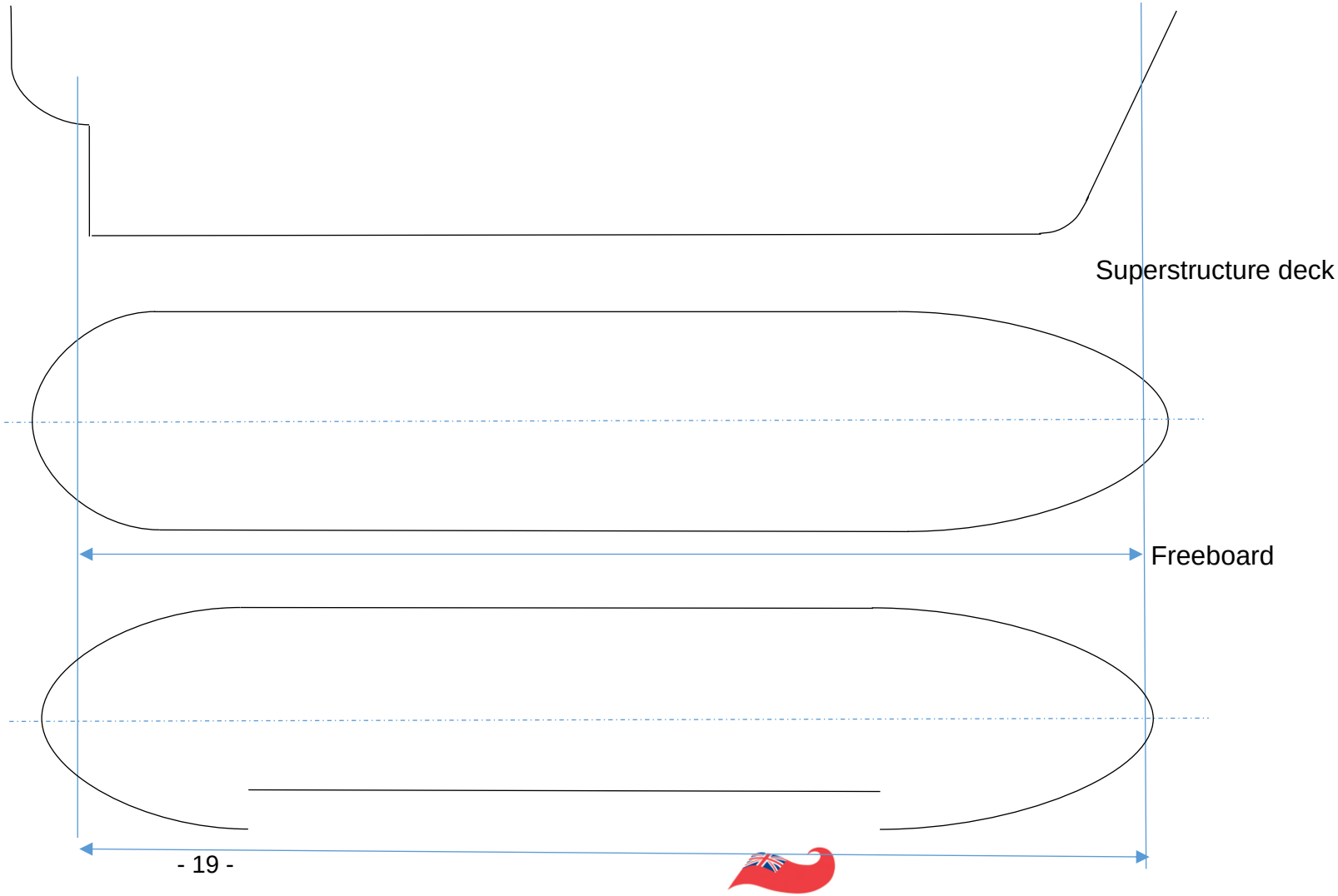
Freeboard assigned as a ship of Type ……..

Classification ……..

Date and place of initial survey ……...

A plan of suitable size may be attached to this Report in preference to sketches on this page.

Disposition and dimensions of superstructures, trunks, deckhouses, machinery casings; extent of bulwarks, guard rails and wood sheathing on exposed deck, to be inserted in the diagrams and tables following; together with positions of hatchways, gangways and other means for the protection of the crew; cargo ports, bow and stern doors, sidescuttles, scuppers, ventilators, air pipes, companionways, and other items that would affect the seaworthiness of the ship.



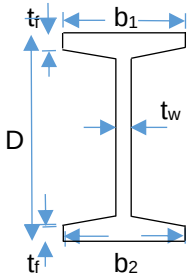
Doorways in superstructures, exposed machinery casings and deckhouses protecting openings in freeboard and superstructure decks (Regulations 12, 17 and 18)

Location	Ref. No. on sketch or plan	Number and size of openings	Height of sills	Closing appliances	
				Type and material	Number of clips
In forecastle bulkhead					
In bridge forward bulkhead					
In bridge after bulkhead					
In raised quarter-deck bulkhead					
In poop bulkhead					
In exposed machinery casings on freeboard or raised quarter-decks					

Doorways in superstructures, exposed machinery casings and deckhouses protecting openings in freeboard and superstructure decks (*continued*)

Location	Ref. No. on sketch or plan	Number and size of openings	Height of sills	Closing appliances	
				Type and material	Number of clips
In exposed machinery casings on superstructure decks					
In machinery casings within superstructures or deckhouses on freeboard deck					
In deckhouses in Position 1 enclosing openings leading below freeboard deck					
In deckhouses in Position 2 enclosing openings leading within enclosed superstructures or below freeboard deck					
In exposed pump-room casings					

Hatchways at positions 1 and 2 closed by portable covers and secured weathertight by tarpaulins and battening devices (Regulation 15)

Position and Reference No. on sketch or plan						
Dimensions of clear opening at top of coaming						
Height of coamings above deck						
PORTABLE BEAMS — Number						
 Spacing						
$b_1 \times t_f$						
$D \times t_w$						
$b_2 \times t_f$						
Bearing surface						
Means of securing each beam						
PORTABLE COVERS — Material						
Thickness						
Direction fitted						
Bearing surface						
Spacing of cleats						
TARPAULINS — No. of layers						
Material						

Hatchways at positions 1 and 2 closed by weathertight covers of steel (or other equivalent material) fitted with gaskets and clamping devices (Regulation 16)

Position and Reference No. on sketch or plan						
Dimensions of clear opening at top of coaming						
Height of coamings above deck						
Type of cover or patent name						
Material						

Machinery space openings and miscellaneous openings in freeboard and superstructure decks (Regulations 17 and 18)

Position and Reference No. on sketch or plan						
Dimensions						
Height of coaming						
COVER — Material						
COVER — How attached						
Number and spacing of toggles						
Position and Reference No. on sketch or plan						
Dimensions						
Height of coaming						
COVER — Material						
COVER — How attached						
Number and spacing of toggles						

Ventilators on freeboard and superstructure decks (positions 1 and 2) (Regulation 19)

Deck on which fitted	Number fitted	Coaming		Type (State patent name if any)	Closing appliances
		Dimensions	Height		

Air pipes on freeboard and superstructure decks (Regulation 20)

Deck on which fitted	Number fitted	Coaming		Type (State patent name if any)	Closing appliances
		Dimensions	Height		

Cargo port and other similar openings (Regulation 21)

Position of port	Dimensions of opening	Distance of lower edge from freeboard deck	Securing devices	Remarks

Scuppers, inlets and discharges (Regulation 22)

State if scupper or discharge	Number	Pipe			From	Vertical distance above top of keel			Number, type and material of discharge valves	Position of controls
		Diameter	Thickness	Material		Discharge		Uppermost valve		
						Outlet in hull	Inboard end			

S – Scupper
D – Discharge

MS – Mild steel
CS – Cast steel
GM – Gun metal
Any other approved material to be designated

SD – Screw-down
ANR – Automatic non-return
SD ANR – Screw-down automatic non-return

Sidescuttles (Regulation 23)

Position	Number fitted	Clear glass size	Fixed or opening	Material		Type of glass and thickness	Standards used and Type No.
				Frame	Deadlight		

Indicate the vertical distance between the freeboard deck and the lower sill of the side-scuttle positioned at the greatest vertical distance below the freeboard deck

Freeing Ports (Regulation 24)

	Length of bulwark	Height of bulwark	Number and size of freeing ports each side	Total area each side	Required area each side
Freeboard deck after well					
Forward well					
Superstructure deck					

State fore and aft position of each freeing port in relation to superstructure end bulkheads — After well; Forward well

Particulars of shutters, bars or rails fitted to freeing ports

Height of lower edge of freeing port above deck

Protection of the crew (Regulations 25 and 26)

State particulars of bulwarks or guard rails on freeboard and superstructure decks

State details of lifelines, walkways, gangways or underdeck passageways where required to be fitted

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Timber deck cargo fittings (Regulations 44)

State particulars of uprights, sockets, lashings, guard rails and lifelines.

Other special features

The conditions of assignment shown on this form are a record of the arrangements and fittings provided on the ship and are in accordance with the requirements of the relevant regulations of the International Convention on Load Lines, 1966.

……...
(Surveyor's signature)

……...
(Date)