

SECOND SCHEDULE

INTERNATIONAL CONVENTION RESPECTING LOAD LINES, 1930

CHAPTER I

ARTICLE 1

General Obligation of Convention

So that the load lines prescribed by this Convention shall be observed, the Contracting Governments undertake to give effect to the provisions of this Convention, to promulgate all regulations, and to take all other steps which may be necessary to give this Convention full and complete effect. The provisions of this Convention are completed by Annexes, which have the same force and take effect at the same time as this Convention. Every reference to this Convention implies at the same time a reference to the Rules annexed thereto. Article 2

Scope of Convention

1. This Convention applies to all ships engaged on international voyages, which belong to countries the Governments of which are Contracting Governments, or to territories to which this Convention is applied under Article 21, except—

(a) ships of war; ships solely engaged in fishing; pleasure yachts and ships not carrying cargo or passengers;

(b) ships of less than 150 tons gross. 2. Ships when engaged on international voyages between the near neighbouring ports of two or more countries may be exempted by the Administration to which such ships belong from the provisions of this Convention, so long as they shall remain in such trades, if the Governments of the countries in which such ports are situated shall be satisfied that the sheltered nature and conditions of such voyages between such ports make it unreasonable or impracticable to apply the provisions of this Convention to ships engaged in such trades. 3. All agreements and arrangements relating to load line or matters appertaining thereto at present in force between Contracting Governments shall continue to have full and complete effect during the terms thereof as regards—

(a) ships to which this Convention does not apply;

(b) ships to which this Convention applies in respect of matters for which it has not expressly provided. To the extent, however, that such agreements or arrangements conflict with the provisions of this Convention, the provisions of this Convention shall prevail. Subject to any such agreement or arrangement—

(a) all ships to which this Convention does not apply; and

(b) all matters which are not expressly provided for in this Convention;

shall remain subject to the legislation of each Contracting Government to the same extent as if this Convention had not been made. Article 3

Definitions

In this Convention, unless expressly provided otherwise—

(a) a ship is regarded as belonging to a country if it is registered by the Government of that country;

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(b) the expression " Administration " means the Government of the country to which the ship belongs;

(c) an " international voyage " is a voyage from a country to which this Convention applies to a port outside such country, or conversely, and for this purpose, every colony, overseas territory, protectorate or territory under suzerainty or mandate is regarded as a separate country;

(d) the expression " Rules " means the Rules contained in Annexes I, II and III;

(e) a " new ship " is a ship, the keel of which is laid on or after the 1st July, 1932, all other ships being regarded as existing ships;

(f) the expression " steamer " includes any vessel propelled by machinery. Article 4

Cases of " Force Majeure."

No ship, which is not subject to the provisions of this Convention at the time of its departure on any voyage, shall become subject to the provisions of this Convention on account of any deviation from its intended voyage due to stress of weather or any other cause of force majeure. In applying the provisions of this Convention, the Administration shall give due consideration to any deviation or delay caused to any ship owing to stress of weather or to any other cause of force majeure.

CHAPTER II

ARTICLE 5

General Provisions

No ship to which this Convention applies shall proceed to sea on an international voyage after the date on which this Convention comes into force, unless the ship, being—

A.—a new ship,

(a) has been surveyed in accordance with the provisions of Annex I;

(b) complies with the provisions of Part II of Annex I; and

(c) has been marked in accordance with the provisions of this Convention. B.—an existing ship,

(a) has been surveyed and marked (whether before or after this Convention comes into force) in accordance with the conditions prescribed either in paragraph A of this Article or in one of the sets of Rules for the Assignment of Load Line particularised in Annex IV; and

(b) complies with the provisions of Part II of Annex I in principle, and also in detail, so far as is reasonable and practicable, having regard to the efficiency of (i) the protection of openings; (ii) guard rails; (iii) freeing ports, and (iv) means of access to crews' quarters provided by the existing arrangements, fittings and appliances on the ship. Article 6

Provisions for Steamers carrying Timber Deck Cargoes

1. A steamer which has been surveyed and marked under Article 5 shall be entitled to be surveyed and marked with a timber load line under Part V of Annex I if, being—

A.—a new ship, it complies with the conditions and provisions prescribed in Part V of Annex I;

B.—an existing ship, it complies with the conditions and provisions of Part V of Annex I other than Rule LXXX, and also in principle, so far as is reasonable and practicable, with the conditions and provisions prescribed by Rule LXXX. provided that in assigning a timber load line to an existing ship the Administration shall make such addition to the freeboard as shall be

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reasonable, having regard to the extent to which such ship falls short of full compliance with the conditions and provisions prescribed in Rule LXXX. 2. A steamer when using the timber load line shall comply with Rules LXXXIV, LXXXV, LXXXVI, LXXXVLU and LXXXIX. Article 7

Provisions for Tankers

A steamer which has been surveyed under Article 5 shall be entitled to be surveyed and marked as a tanker under Part VI of Annex I if, being—

- A.—a new ship, it complies with the conditions and provisions prescribed in Part VI of Annex I;
B.—an existing ship, it complies with the conditions and provisions in Rules XCIH, XCVI, XCVH, XCVIII and XCIX, and also in principle so far as is reasonable and practicable with Rules XCIV, XCV and C, provided that in assigning a tanker load line to an existing ship the Administration shall make such addition to the free-board as shall be reasonable having regard to the extent to which such ship falls short of full compliance with the conditions and provisions prescribed in Rules XCIV, XCV and C. Article 8

Provisions for Ships of Special Types

For steamers over 300 feet in length, possessing constructional features similar to those of a tanker which afford extra invulnerability against the sea, a reduction in freeboard may be granted. The amount of such reduction shall be determined by the Administration in relation to the freeboard assigned to tankers, having regard to the degree of compliance with the conditions of assignment laid down for these ships, and the degree of subdivision provided. The freeboard assigned to such a ship shall in no case be less than would be assigned to the ship as a tanker. Article 9

Survey

The survey and marking of ships for the purpose of this Convention shall be carried out by officers of the country to which the ships belong, provided that the Government of each country may entrust the survey and marking of its ships either to Surveyors nominated for this purpose, or to organisations recognised by it. In every case the Government concerned fully guarantees the completeness and efficiency of the survey and marking. Article 10

Zones and Seasonal Areas

A ship to which this Convention applies shall conform to the conditions applicable to the zones and seasonal areas described in Annex II to this Convention. A port standing on the boundary line between two zones shall be regarded as within the zone from or into which the ship arrives or departs.

CHAPTER III

ARTICLE 11

Issue of Certificates

A certificate, called "International Load Line Certificate," shall be issued to every ship which has been surveyed and marked in accordance with this Convention, but not otherwise. An

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International Load Line Certificate shall be issued either by the Government of the country to which the ship belongs or by any person or organisation duly authorised by that Government, and in every case the Government assumes full responsibility for the certificate. Article 12

Issue of Certificates by another Government

The Government of a country to which this Convention applies may, at the request of the Government of any other country to which this Convention applies, cause any ship which belongs to the last-mentioned country, or (in the case of an unregistered ship) which is to be registered by the Government of that country, to be surveyed and marked, and, if satisfied that the requirements of this Convention are complied with, issue an international Load Line Certificate to such ship, under its own responsibility. Any certificate so issued must contain a statement to the effect that it has been issued at the request of the Government of the country to which the ship belongs, or of the Government by whom the ship is to be registered, as the case may be, and it shall have the same force and receive the same recognition as a certificate issued under Article 11 of this Convention. Article 13

Form of Certificate

The International Load Line Certificates shall be drawn up in the official language or languages of the country by which they are issued. The form of the certificate shall be that of the model given in Annex III, subject to such modifications as may, in accordance with Rule L)(VIII), be made in the case of ships carrying timber deck cargoes. Article 14

Duration of Certificates

1. An International Load Line Certificate shall, unless it is renewed in accordance with the provisions of paragraph 2 of this Article, expire at the end of such period as may be specified therein by the Administration which issues it: but the period so specified shall not exceed five years from the date of issue. 2. An International Load Line Certificate may be renewed from time to time by the Administration which issued it for such period (not exceeding five years on any occasion) as the Administration thinks fit, after a survey not less effective than the survey required by this Convention before the issue of the certificate, and any such renewal shall be endorsed on the certificate. 3. An Administration shall cancel any International Load Line Certificate issued to a ship belonging to its country :

A. If material alterations have taken place in the hull and superstructures of the ship which affect the calculations of freeboard. B. If the fittings and appliances for the (i) protection of openings, (ii) guard rails, (iii) freeing ports and (iv) means of access to crews' quarters are not maintained in as effective a condition as they were in when the certificate was issued. C. If the ship is not inspected periodically at such times and under such conditions as the Administration may think necessary for the purpose of securing that the hull and superstructures referred to in Condition A are not altered and that the fittings and appliances referred to in Condition B are maintained as therein provided throughout the duration of the certificate. Article 15

Acceptance of Certificates

International Load Line Certificates issued under the authority of a Contracting Government shall be accepted by the other Contracting Governments as having the same force as the certificates issued by them to ships belonging to their respective countries. Article 16

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Control

1. A ship to which this Convention applies, when in a port of a country to which it does not belong, is in any case subject to control with respect to load line as follows: An officer duly authorised by the Government of that country may take such steps as may be necessary for the purpose of seeing that there is on board a valid International Load Line Certificate. If there is such a certificate on board the ship, such control shall be limited to the purpose of securing—

(a) that the ship is not loaded beyond the limits allowed by the certificate;

(b) that the position of the load line on the ship corresponds with the certificate; and

(c) that the ship has not been so materially altered in respect to the matters dealt with in conditions A and B (set out in paragraph 3 of Article 14) that the ship is manifestly unfit to proceed to sea without danger to human life. 2. Only officers possessing the necessary technical qualifications shall be authorised to exercise control as aforesaid, and if such control is exercised under (c) above, it shall only be exercised in so far as may be necessary to secure that the ship shall be made fit to proceed to sea without danger to human life. 3. If control under this Article appears likely to result in legal proceedings being taken against the ship, or in the ship being detained, the consul of the country to which the ship belongs shall be informed as soon as possible of the circumstances of the case. Article 17

Privileges

The privileges of this Convention may not be claimed in favour of any ship unless it holds a valid International Load Line Certificate.

CHAPTER IV

ARTICLE 18

Equivalents

Where in this Convention it is provided that a particular fitting, or appliance, or type thereof, shall be fitted or carried in a ship, or that any particular arrangement shall be adopted, any Administration may accept in substitution therefor any other fitting, or appliance, or type thereof, or any other arrangement, provided that such Administration shall have been satisfied that the fitting, or appliance, or type thereof, or the arrangement substituted is in the circumstances at least as effective as that specified in this Convention. Any Administration which so accepts a new fitting, or appliance, or type thereof, or new arrangement shall communicate the fact to the other Administrations, and, upon request, the particulars thereof. Article 19

Laws, Regulations, Reports

The Contracting Governments undertake to communicate to each other—

(1) the text of laws, decrees, regulations and decisions of general application which shall have been promulgated on the various matters within the scope of this Convention;

(2) all available official reports or official summaries of reports in so far as they show the results of the provisions of this Convention, provided always that such reports or summaries are not of a confidential nature. The Government of the United Kingdom of Great Britain and Northern Ireland is invited to serve as an intermediary for collecting all this information and for bringing it to the knowledge of the other Contracting Governments. Article 20

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Modifications, Future Conferences

1. Modifications of this Convention which may be deemed useful or necessary improvements may at any time be proposed by any Contracting Government to the Government of the United Kingdom of Great Britain and Northern Ireland, and such proposals shall be communicated by the latter to all the other Contracting Governments, and if any such modifications are accepted by all the Contracting Governments (including Governments which have deposited ratifications or accessions which have not yet become effective) this Convention shall be modified accordingly.

2. Conferences for the purpose of revising this Convention shall be held at such times and places as may be agreed upon by the Contracting Governments. A Conference for this purpose shall be convoked by the Government of the United Kingdom of Great Britain and Northern Ireland whenever, after this Convention has been in force for five years, one-third of the Contracting Governments express a desire to that effect.

CHAPTER V

ARTICLE 21

Application to Colonies

1. A Contracting Government may, at the time of signature, ratification, accession or thereafter, by a notification in writing addressed to the Government of the United Kingdom of Great Britain and Northern Ireland, declare its desire that this Convention shall apply to all or any of its Colonies, overseas territories, protectorates or territories under suzerainty or mandate, and this Convention shall apply to all the territories named in such notification, two months after the date of the receipt thereof, but, failing such notification, this Convention will not apply to any such territories.

2. A Contracting Government may at any time by a notification in writing addressed to the Government of the United Kingdom of Great Britain and Northern Ireland express its desire that this Convention shall cease to apply to all or any of its colonies, overseas territories, protectorates or territories under suzerainty or mandate to which this Convention shall have, under the provisions of the preceding paragraph, been applicable for a period of not less than five years, and in such case the Convention shall cease to apply twelve months after the date of the receipt of such notification by the Government of the United Kingdom A.D. 1932 of Great Britain and Northern Ireland to all territories mentioned—therein.

3. The Government of the United Kingdom of Great Britain and Northern Ireland shall inform all the other Contracting Governments of the application of this Convention to any Colony, overseas territory, protectorate or territory under suzerainty or mandate under the provisions of paragraph 1 of this Article, and of the cessation of any such application under the provisions of paragraph 2, stating in each case the date from which this Convention has become or will cease to be applicable. Article 22

Authentic Texts.—Ratification

This Convention, of which both the English and French texts shall be authentic, shall be ratified. The instruments of ratification shall be deposited in the archives of the Government of the United Kingdom of Great Britain and Northern Ireland, which will notify all the other signatory or acceding Governments of all ratifications deposited and the date of their deposit. Article 23

Accession

A Government (other than the Government of a territory to which Article 21 applies) on behalf of which this Convention has not been signed, shall be allowed to accede thereto at

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any time after the Convention has come into force. Accessions shall be effected by means of notifications in writing addressed to the Government of the United Kingdom of Great Britain and Northern Ireland, and shall take effect three months after their receipt. The Government of the United Kingdom of Great Britain and Northern Ireland shall inform all signatory and acceding Governments of all accessions received and of the date of their receipt. Article 24

Date of Coming in Force

This Convention shall come into force on the 1st July, 1932, as between the Governments which have deposited their ratifications by that date, and provided that at least five ratifications have been deposited with the Government of the United Kingdom of Great Britain and Northern Ireland. Should five ratifications not have been deposited by that date, this Convention shall come into force three months after the date on which the fifth ratification is deposited. Ratifications deposited after the date on which this Convention has come into force shall take effect three months after the date of their deposit. Article 25

Denunciation

This Convention may be denounced on behalf of any Contracting Government at any time after the expiration of five years from the date on which the Convention comes into force in so far as that Government is concerned. Denunciation shall be effected by a notification in writing addressed to the Government of the United Kingdom of Great Britain and Northern Ireland, which will notify all the other contracting Governments of all denunciations received and of the date of their receipt. A denunciation shall take effect twelve months after the date on which notification thereof is received by the Government of the United Kingdom of Great Britain and Northern Ireland. FINAL PROTOCOL At the moment of signing the International Load Line Convention concluded this day, the under-mentioned Plenipotentiaries have agreed on the following :—

I Ships engaged solely on voyages on the Great Lakes of North America and ships engaged in other inland waters are to be regarded as outside the scope of the Convention. II This Convention is not applied to the existing ships of the United States of America and of France of the lumber schooner type propelled by power, with or without sails, or by sails alone. III The Government of the United Kingdom of Great Britain and Northern Ireland shall convoke a Conference of the Contracting Governments of the countries to which tankers belong, upon request of the United States of America, at any time within the five-year period mentioned in Article 20, for the purpose of discussing matters relating to tanker freeboard. The Contracting Governments will not raise any objection to the provisions contained in this Convention in regard to tanker load line being altered as may be determined at such Conference, provided that the conclusions then reached are communicated forthwith to the Governments signatory to the present Convention and that no objection is received by the Government of the United Kingdom of Great Britain and Northern Ireland within six months of the despatch of such communication. In witness whereof the Plenipotentiaries have drawn up this Final Protocol which shall have the same force and the same validity as if the provisions thereof had been inserted in the text of the Convention to which it belongs. Done at London this fifth day of July, 1930, in a single copy which shall be deposited in the archives of the Government of the United Kingdom of Great Britain and Northern Ireland, which shall transmit certified true copies thereof to all signatory Governments. ANNEX I Rules for determining Maximum Load Lines of Merchant Ships Part I—General The Rules necessarily assume that the nature and stowage of the cargo, ballast, &c, are such as to secure sufficient stability for the ship. Rule I

Definitions

Steamer.—The term " steamer " includes all ships having sufficient means for mechanical propulsion, except where provided with sufficient sail area for navigation under sails alone. A ship fitted with mechanical means of propulsion and with sail area insufficient for navigation under sails alone may be assigned a load line under Part III of these Rules. A lighter, barge or other ship without independent means of propulsion, when towed, is to be assigned a load line under Part III of these Rules. Sailing Ship.—The term " sailing ship " includes all ships provided with sufficient sail area for navigation under sails alone, whether or not fitted with mechanical means of propulsion. Flush Deck Ship.—A flush deck ship is one which has no superstructure on the freeboard deck. Superstructure.—A superstructure is a decked structure on the freeboard deck extending from side to side of the ship. A raised quarter deck is considered a superstructure. Freeboard.—The freeboard assigned is the distance measured vertically downwards at the (ride of the ship amidships from the upper edge of the deck line to the upper edge of the load line mark. Freeboard Deck.—The freeboard deck is the deck from which the freeboard is measured, and is the uppermost complete deck having permanent means of closing all openings in weather portions of the deck in accordance with Rules VIII to (VI. It is the upper deck in flush deck ships and ships with detached superstructures. In ships having discontinuous freeboard decks within superstructures which are not intact, or which are not fitted with Class 1 closing appliances, the lowest line of the deck below the superstructure deck is taken as the freeboard deck. Amidships.—Amidships is the middle of the length of the summer load water-line, as denned in Rule XXXII. Rule II

Deck Line

The deck line is a horizontal line twelve inches in length and one inch in breadth. It is to be marked amidships on each side of the ship, and its upper edge is to pass through the point where the continuation outwards of the upper surface of the freeboard deck intersects the outer surface of the shell. (See figure 1.) Where the deck is partly sheathed amidships, the upper edge of the deck line is to pass through the point where the continuation outwards of the upper surface of the actual sheathing at amidships intersects the outer surface of the shell. Rule III

Load Line Disc

The load line disc is twelve inches in diameter and is intersected by a horizontal line eighteen inches in length and one inch in breadth, the upper edge of which passes through the centre of the disc. The disc is to be marked amidships below the deck line. Rule IV

Lines to be used in connection with the Disc

The lines which indicate the maximum load line in different circumstances and in different seasons (see Annex II) are to be horizontal lines, nine inches in length and one inch in breadth, which extend from, and are at right angles to, a vertical line marked 21 inches forward of the centre of the disc (see figure 1). The following are the lines to be used :—

Summer Load Line.—The Summer load line is indicated by the upper edge of the line which passes through the centre of the disc and also by a line marked S. Winter Load Line.—The Winter load line is indicated by the upper edge of a line marked W. Winter North Atlantic Load Lin.—The Winter North Atlantic load line is indicated by the upper edge of a line marked WNA. Tropical Load Line.—The Tropical Load Line is indicated by the upper edge of a line marked T. Fresh Water Load Lines.—The Fresh Water load line in Summer is indicated by the upper edge of a line marked F. The difference between the Fresh Water load line in summer and

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the Summer load line is the allowance to be made for loading in Fresh Water at the other load lines. The Tropical Fresh Water load line is indicated by the upper edge of a line marked T.F.(1)

$$F = A - \frac{(A - B)(C_s - 23)}{100} \dots\dots \left(v \right)$$

$$F = A - \frac{(A - B)(C_s - 23)}{100} \dots\dots \left(v \right)$$

Rule V

Mark of Assigning Authority

The Authority by whom the load lines are assigned may be indicated by letters measuring about 4½ inches by 3 inches marked alongside the disc and above the centre line. Rule VI

Details of Marking

The disc, lines and letters are to be painted in white or yellow on a dark ground or in black on a light ground. They are also to be carefully cut in or centre-punched on the sides of iron and steel ships, and on wood ships they are to be cut into the planking for at least one-eighth of an inch. The marks are to be plainly visible, and, if necessary, special arrangements are to be made for this purpose. Rule VII

Verification of Marks

The International Load Line Certificate is not to be delivered to the ship until a surveyor of the Assigning Authority (acting under the provisions of Article 9 of this Convention) has certified that the marks are correctly and permanently indicated on the ship's sides. Part II Conditions of Assignment of Load Lines The assignment of load lines is conditional upon the ship being structurally efficient and upon the provision of effective protection to ship and crew. Rules VIII to XXXI apply to ships to which minimum freeboards are assigned. In ships to which greater freeboards than the minimum are assigned, the protection is to be relatively as effective.

Openings in Freeboard and Superstructure Decks

Rule VIII

Cargo and other Hatchways not protected by Superstructures

The construction and fitting of cargo and other hatchways in exposed positions on freeboard and superstructure decks are to be at least equivalent to the standards laid down in Rules IX to XVI. Rule IX

(1) 3 Where sea-going steamers navigate a river or inland water, deeper loading is permitted corresponding to the weight of fuel, &c, required for consumption between the point of departure and the open sea.

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Hatchway Coamings

The height of hatchway coamings on freeboard decks is to be at least 24 inches above the deck. The height of coamings on superstructure decks is to be at least 24 inches above the deck if situated within a quarter of the ship's length from the stem, and at least 18 inches if situated elsewhere. Coamings are to be of steel, are to be substantially constructed and, where required to be 24 inches high, are to be fitted with an efficient horizontal stiffener placed not lower than 10 inches below the upper edge, and fitted with efficient brackets or stays from the stiffener to the deck, at intervals of not more than 10 feet. Where end coamings are protected, these requirements may be modified. Rule X

Hatchway Covers

Covers to exposed hatchways are to be efficient, and where they are made of wood, the finished thickness is to be at least 2 3/8 inches in association with a span of not more than 5 feet. The width of each bearing surface for these hatchway covers is to be at least 2 1/2 inches. Rule XI

Hatchway Beams and Fore-and-Afters

Where wood hatchway covers are fitted the hatchway beams and fore-and-afters are to be of the scantlings and spacing given in Table 1 where coamings 24 inches high are required, and as given in Table 2 where coamings 18 inches high are required. Angle bar mountings on the upper edge are to extend continuously for the full length of each beam. Wood fore-and-afters are to be steel shod at all bearing surfaces. Table 1 (Coamings 24 inches in height.) Hatchway Beams and Fore-and-Afters for Ships 200 feet or more in length. (2) Hatchway Beams.

Breadth of Hatchway.	Mounting	Beams		Beams		Beams		Beams		Beams		Beams	
		with Fore-and-Afters.	without Fore-and-Afters.	with Fore-and-Afters.	without Fore-and-Afters.	with Fore-and-Afters.	without Fore-and-Afters.	with Fore-and-Afters.	without Fore-and-Afters.	with Fore-and-Afters.	without Fore-and-Afters.	with Fore-and-Afters.	without Fore-and-Afters.
Spacing Centre to Centre.	Spacing Centre to Centre.												
6'	0'	8'	0'	10'	0'	4'	0'	5'	0'				
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
10' 0"	3 x	3 x	.40A	11 x	.30P	12 x	.32P	14 x	.34p	9 x	.46Bp	10 x	.50Bp
12' 0"	3 x	3 x	.40A	12 x	.32P	14 x	.34p	17 x	.36p	11 x	.50Bp	12 x	.50Bp

- (2) 4 In ships not exceeding 100 feet in length, the depths of beams which are formed of plates and angles may be 60 per cent. of the depths given above; the depths of beams and steel fore-and-afters formed of bulb angle or bulb plate section may be 80 per cent. of the depths given above; the thickness of plates, bulb angles and bulb plates should correspond to the thickness tabulated for the reduced depths with a minimum thickness of .30 inch; the depths and breadths of wood fore-and-afters may be 80 per cent. of those given in the tables for side fore-and-afters, but the centre fore-and-afters must be not less than 6 1/2 inches wide. In ships between 100 feet and 200 feet in length, the sizes of the beams and fore-and-afters are to be determined by linear interpolation.

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14' 0"	3 x	3 x	.42A	14 x	.34P	17 x	.36pP	20 x	.38p	12 x	.50Bp	12 x	.32p
16' 0"	3x	3 x	.42A	16 x	.36P	19 x	.38P	22 x	.38P	12 x	.32P	14 x	.34p
18' 0"	4 x	3 x	.44A	18 x	.36P	21 x	.38P	25 x	.40P	14 x	.34p	16 x	.36p
20' 0"	4 x	3 x	.44A	20 x	.38P	24 x	.40P	28 x	.42p	15 x	.34p	18 x	.36p
22' 0"	4 x	3 x	.46A	22 x	.38P	26 x	.42P	30 x	.44P	16 x	.36P	19 x	.36P
24' 0"	5 x	3 x	.46A	23 x	.40P	28 x	.42P	32 x	.44P	17 x	.36P	20 x	.38p
26' 0"	5 x	3 x	.48A	24 x	.40P	29 x	.42P	34 x	.46P	18 x	.36P	21 x	.38p
28' 0"	6 x	3 x	.50A	25 x	.40P	31 x	.44P	36 x	.48P	19 x	.38P	22 x	.38p
30' 0"	6 x	3 x	.52A	26 x	.42P	32 x	.44P	38 x	.48P	20 x	.38P	23 x	.40P

Fore-And -Afters

Length of Fore-And-Afters.	Angle of Plate Side Fore-And-Afters.	Spacing Centre to Centre.	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins
3' 0"	4' 0"	5' 0"	3' 0"	4' 0"	5' 0"	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins
6' 0"	2 1/2 x	2 1/2 x	.366	.366	.387	.386	3	.386	3	.387	3	.38						
8' 0"	2 1/2 x	2 1/2 x	.387	.428	.449	.447	3 1/2 x	.428	3	.449	3	.44						
10' 0"	2 1/2 x	2 1/2 x	.408	.509	.5011	.508	3 1/2 x	.509	3 1/2 x	.5011	3 1/2 x	.50						

Wood
 Centre
 Fore-

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Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.		Fore-and-Afters.	
Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.		Spacing Centre to Centre.	
D	B	D	B	D	B	D	B	D	B	D	B	D	B	D	B	D	B	D	B	D	B
3' 0"	4' 0"	5' 0"	6' 0"	8' 0"	10' 0"	12' 0"	14' 0"	16' 0"	18' 0"	20' 0"	22' 0"	24' 0"	26' 0"	28' 0"	30' 0"	32' 0"	34' 0"	36' 0"	38' 0"	40' 0"	42' 0"
6 1/2	7 1/2	8 1/2	9 1/2	10 1/2	11 1/2	12 1/2	13 1/2	14 1/2	15 1/2	16 1/2	17 1/2	18 1/2	19 1/2	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	27 1/2
8 1/2	9 1/2	10 1/2	11 1/2	12 1/2	13 1/2	14 1/2	15 1/2	16 1/2	17 1/2	18 1/2	19 1/2	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	27 1/2	28 1/2	29 1/2
10 1/2	11 1/2	12 1/2	13 1/2	14 1/2	15 1/2	16 1/2	17 1/2	18 1/2	19 1/2	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	27 1/2	28 1/2	29 1/2	30 1/2	31 1/2

A = Plain angle. BP = Bulb plate. P = Plate. D = Depth. B = Breadth. Depths for hatchway beams are at the middle of the length and are measured from the top mounting to the lower edge. Depths for fore-and-afters are measured from the under side of the hatch covers to the lower edge. Sizes for intermediate lengths and spacing are obtained by interpolation. Where plates are specified, two angles, of the size given for mountings, are to be fitted at the upper and at the lower part of the beam. Where bulb plates are specified, two angles, of the size given for mountings, are to be fitted at the upper part of the beam or fore-and-after. Where bulb angles are specified, one angle, of the size given for mountings, is to be fitted at the upper part of the section. Where the specified flanges of an angle are of different dimensions, the larger flange is to be horizontal.

Table 2 (Coamings 18 inches in height.) Hatchway Beams and Fore-and-Afters for Ships 200 feet or more in length. (3) Hatchway Beams.

Breadth of Hatchway.	Mountings	Beams with Fore-and-Afters.	Beams without Fore-and-Afters.
Spacing Centre to Centre.	Spacing Centre to Centre.		

(3) 5 In ships not exceeding 100 feet in length, the depths of beams which are formed of plates and angles may be 60 per cent. of the depths given above; the depths of beams and steel fore-and-afters formed of bulb angle or bulb plate section may be 80 per cent. of the depths given above; the thickness of plates, bulb angles and bulb plates should correspond to the thickness tabulated for the reduced depths with a minimum thickness of .30 inch; the depths and breadths of wood fore-and-afters may be 80 per cent. of those given in the tables for side fore-and-afters, but the centre fore-and-afters must be not less than 6J inches wide. In ships between 100 feet and 200 feet in length, the sizes of the beams and fore-and-afters are to be determined by linear interpolation.

Status: This is the original version (as it was originally enacted).

8' 0"	2 1/2	2 1/2	.386	.387	.407	.426	3	.387	7	.407	3	.42
	x	x	x	x	1/2	x	x		x	1/2	1/2	
10' 0"	2 1/2	2 1/2	.407	.448	.469	.507	3	.448	3	.569	3	.50
	x	x	x	x	x	x	x	x	1/2	x	1/2	x

Wood
 Centre
 Fore-
 and-
 Afters.

Spacing
 Centre
 to
 Centre.

3' 0"	4' 0"	5' 0"	6' 0"	7' 0"	8' 0"	9' 0"	10' 0"	11' 0"	12' 0"	13' 0"	14' 0"	15' 0"
D	B	D	B	B	D	B	D	B	D	B	D	B
ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins	ins

6' 0"	5	7	5	7	6	7	5	5	5	5	6	5
			1/2						1/2			
8' 0"	6	7	6	7	7	7	6	5	6	6	7	6
			1/2						1/2			
10' 0"	7	7	7	7	8	7	7	6	7	7	8	7
			1/2					1/2				

A = Plain angle. BP = Bulb plate. P = Plate. D = Depth. B—Breadth. Depths for hatchway beams are at the middle of the length and are measured from the top mounting to the lower edge. Depths for fore-and-afters are measured from the under side of the hatch covers to the lower edge. Sizes for intermediate lengths and spacing are obtained by interpolation. Where plates are specified, two angles, of the sizes given for mountings, are to be fitted at the upper and at the lower part of the beam. Where bulb plates are specified, two angles, of the size given for mountings, are to be fitted at the upper part of the beam or fore-and-after. Where bulb angles are specified, one angle, of the size given for mountings, is to be fitted at the upper part of the section. Where the specified flanges of an angle are of different dimensions, the larger flange is to be horizontal.

Rule XII

Carriers or Sockets

Carriers or sockets for hatchway beams and fore-and-afters are to be of steel at least 1/2 inch thick, and are to have a width of bearing surface of at least 3 inches. Rule XIII

Status: This is the original version (as it was originally enacted).

Cleats

Strong cleats at least 2 ½ inches wide are to be fitted at intervals of not more than 2 feet from centre to centre; the end cleats are to be placed not more than 6 inches from each corner of the hatchway. Rule XIV

Battens and Wedges

Battens and wedges are to be efficient and in good condition. Rule XV

Tarpaulins

At least two tarpaulins in good condition, thoroughly waterproofed and of ample strength, are to be provided for each hatchway in an exposed position on freeboard and superstructure decks. The material is to be guaranteed free from jute, and of the standard weight and quality laid down by each Administration. Rule XVI

Security of Hatchway Covers

At all hatchways in exposed positions on freeboard and superstructure decks ring bolts or other fittings for lashings are to be provided. Where the breadth of the hatchway exceeds 60 per cent. of the breadth of the deck in way of the hatchway, and the coamings are required to be 24 inches high, fittings for special lashings are to be provided for securing the hatchway covers after the tarpaulins are battened down. Rule XVII

Cargo and other Hatchways in the Freeboard Deck within Superstructures which are fitted with Closing Appliances less efficient than Class 1

The construction and fitting of such hatchways, are to be at least equivalent to the standards laid down in Rule XVIII. Rule XVIII

Hatchway Coamings and Closing Arrangements

Cargo, coaling and other hatchways in the freeboard deck within superstructures which are fitted with Class 2 closing appliances are to have coamings at least 9 inches in height and closing arrangements as effective as those required for exposed cargo hatchways whose coamings are 18 inches high. Where the closing appliances are less efficient than Class 2, the hatchways are to have coamings at least 18 inches in height, and are to have fittings and closing arrangements as effective as those required for exposed cargo hatchways. Rule XIX

Machinery Space Openings in Exposed Positions on Freeboard and Raised Quarter Decks

Such openings are to be properly framed and efficiently enclosed by steel casings of ample strength, and where the casings are not protected by other structures their strength is to be specially considered. Doors in such casings are to be of steel, efficiently stiffened, permanently attached, and capable of being closed and secured from both sides. The sills of openings are to be at least 24 inches above the freeboard deck and at least 18 inches above the raised quarter deck. Fiddley, funnel and ventilator coamings are to be as high above the deck as is reasonable and practicable. Fiddley openings are to have strong steel covers permanently attached in their proper positions. Rule XX

Status: This is the original version (as it was originally enacted).

*Machinery Space Openings in Exposed Positions on
Superstructure Decks other than Raised Quarter Decks*

Such openings are to be properly framed and efficiently enclosed by strong steel casings. Doors in such cases are to be strongly constructed, permanently attached, and capable of being closed and secured from both sides. The sills of the openings are to be at least 15 inches above superstructure decks. Fiddley, funnel and ventilator coamings are to be as high above the deck as is reasonable and practicable. Fiddley openings are to have strong steel covers permanently attached in their proper positions. Rule XXI

*Machinery Space Openings in the Freeboard Deck within Superstructures
which are fitted with Closing Appliances less efficient than Class I*

Such openings are to be properly framed and efficiently enclosed by steel casings. Doors in such casings are to be strongly constructed, permanently attached, and capable of being securely closed. The sills of the openings are to be at least 9 inches above the deck where the superstructures are closed by Class 2 closing appliances, and at least 15 inches above the deck where the closing appliances are less efficient than Class 2. Rule XXII

Flush Bunker Scuttles

Flush bunker scuttles may be fitted in superstructure decks, and where so fitted are to be of iron or steel, of substantial construction, with screw or bayonet joints. Where a scuttle is not secured by hinges, a permanent chain attachment is to be provided. The position of flush bunker scuttles in small ships in special trades is to be dealt with by each Assigning Authority. Rule XXIII

Companionways

Companionways in exposed positions on freeboard decks and on decks of enclosed superstructures are to be of substantial construction. The sills of the doorways are to be of the heights specified for hatchway coamings (see Rules IX and XVILI). The doors are to be strongly constructed and capable of being closed and secured from both sides. Where the companionway is situated within a quarter of the ship's length from the stem, it is to be of steel and riveted to the deck plating. Rule XXIV

Ventilators in Exposed Positions on Freeboard and Superstructure Decks

Such ventilators to spaces below freeboard decks or decks of superstructures which are intact or fitted with Class 1 closing appliances are to have coamings of steel, substantially constructed, and efficiently connected to the deck by rivets spaced four diameters apart centre to centre, or by equally effective means. The deck plating at the base of the coaming is to be efficiently stiffened between the deck beams. The ventilator openings are to be provided with efficient closing arrangements. Where such ventilators are situated on the freeboard deck, or on the superstructure deck within a quarter of the ship's length from the stem, and the closing arrangements are of a temporary character, the coamings are to be at least 36 inches in height; in other exposed positions on the superstructure deck they are to be at least 30 inches in height. Where the coaming of any ventilator exceeds 36 inches in height, it is to be specially supported and secured. Rule XXV

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Air Pipes

Where the air pipes to ballast and other tanks extend above freeboard or superstructure decks, the exposed parts of the pipes are to be of substantial construction; the height from the deck to the opening is to be at least 36 inches in wells on freeboard decks, 30 inches on raised quarter decks, and 18 inches on other superstructure decks. Satisfactory means are to be provided for closing the openings of the air pipes.

Openings in the Sides of Ships

Rule XXVI

Gangway, Cargo and Coaling Ports, &c

Openings in the sides of ships below the freeboard deck are to be fitted with watertight doors or covers which, with their securing appliances, are to be of sufficient strength. Rule XXVII

Scuppers and Sanitary Discharge Pipes

Discharges led through the ship's sides from spaces below the freeboard deck are to be fitted with efficient and accessible means for preventing water from passing inboard. Each separate discharge may have an automatic non-return valve with a positive means of closing it from a position above the freeboard deck, or two automatic non-return valves without positive means of closing, provided the upper valve is situated so that it is always accessible for examination under service conditions. The positive action valve is to be readily accessible and is to be provided with means for showing whether the valve is open or closed. Cast iron is not to be accepted for such valves where attached to the sides of the ship. Conditional upon the type and the location of the inboard ends of such openings, similar provisions may be prescribed by the Assigning Authority as to discharges from spaces within enclosed superstructures. Where scuppers are fitted in superstructures not fitted with Class I closing appliances they are to have efficient means for preventing the accidental admission of water below the freeboard deck. Rule XXVIII

Side Scuttles

Side scuttles to spaces below the freeboard deck or to spaces below the superstructure deck of superstructures closed by Class 1 or Class 2 closing appliances are to be fitted with efficient inside deadlights permanently attached in their proper positions so that they can be effectively closed and secured watertight. Where, however, such spaces in superstructures are appropriated to passengers other than steerage passengers or to crew, the side scuttles may have portable deadlights stowed adjacent to the side scuttles, provided they are readily accessible at all times on service. The side scuttles and deadlights are to be of substantial and approved construction. Rule XXIX

Guard Rails

Efficient guard rails or bulwarks are to be fitted on all exposed portions of freeboard and superstructure decks. Rule XXX

Freeing Ports

Where bulwarks on the weather portions of freeboard or superstructure decks form " wells," ample provision is to be made for rapidly freeing the decks of water and for draining them. The

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minimum freeing port area on each side of the ship for each well on the freeboard deck and on the raised quarter-deck is to be that given by the following scale; the minimum area for each well on any other superstructure deck is to be one-half the area given by the scale. Where the length of the well exceeds .7 L, the scale may be modified. Scale of Freeing Port Area

Length of Bulwarks in " Well " in Feet.	Freeing Port Area on each side in Square Feet.
15	8.0
20	8.5
25	9.0
30	9.5
35	10.0
40	10.5
45	11.0
50	11.5
55	12.0
60	12.5
65	13.0
Above 65	1 square foot for each additional 5 feet length of bulwark.

The lower edges of the freeing ports are to be as near the deck as practicable and preferably not higher than the upper edge of the gunwale bar. Two-thirds of the freeing port area required is to be provided in the midship half of the well. In ships with less than the standard sheer the freeing port area is to be suitably increased. All such openings in the bulwarks are to be protected by rails or bars spaced about 9 inches apart. If shutters are fitted to freeing ports, ample clearance is to be provided to prevent jamming. Hinges are to have brass pins. Rule XXXI

Protection of Crew

Gangways, lifelines or other satisfactory means are to be provided for the protection of the crew in getting to and from their quarters. The strength of houses for the accommodation of crew on flush deck steamers is to be equivalent to that required for superstructure bulkheads. Part III—Load Line for Steamers. Rule XXXII

Length (L)

The length used with the Rules and Freeboard Table is the length in feet on the summer load water-line from the foreside of the stem to the afterside of the rudder post. Where there is no rudder post, the length is measured from the foreside of the stem to the axis of the rudder stock. For ships with cruiser stems, the length is to be taken as 96 per cent. of the total length on the designed summer load water-line or as the length from the fore side of the stem to the axis of the rudder stock if that be the greater. Rule XXXIII

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Breadth (B)

The breadth is the maximum breadth in feet amidships to the moulded line of the frame in iron or steel ships, and to the outside of the planking in wood or composite ships. Rule XXXIV

Moulded Depth

The moulded depth is the vertical distance in feet, measured amidships, from the top of the keel to the top of the freeboard deck beam at side. In wood and composite ships the distance is measured from the lower edge of the keel rabbet. Where the form at the lower part of the midship section is of a hollow character, or where thick garboards are fitted, the depth is measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel. Rule XXXV Depth for Freeboard (D) The depth used with the Freeboard Table is the moulded depth plus the thickness of stringer plate, or plus $S = \frac{100 - 10L}{100} (T \text{ in feet}) = \frac{100 - 10L}{100} (T \text{ in metres})$ if that be greater, where—

T is the mean thickness of the exposed deck clear of deck openings, and

S is the total length of superstructures as defined in Rule XL. Where the topsides are of unusual form, D is the depth of a midship section having vertical topsides, standard round of beam and area of topside section equal to that in the actual midship section. Where there is a step or break in the topsides (e.g., as in the Turret Deck ship) 70 per cent. of the area above the step or break is included in the area used to determine the equivalent section. In a ship without an enclosed superstructure covering at least .6 L amidships, without a complete trunk or without a combination of intact partial superstructures and trunk extending all fore and aft, where D is less than L/15, the depth used with the Table is not to be taken as less than L/15 Rule XXXVI

Coefficient of Fineness (c)

The coefficient of fineness used with the Freeboard Table is given by—

$$F = 1 - \frac{(1-B)(Cs-S)}{123-S} \dots\dots (vi)$$

$$F = 1 - \frac{(1-B)(Cs-S)}{123-S} \dots\dots (vi)$$

where A is the ship's moulded displacement in tons (excluding bossing) at a mean moulded draught d_1 which is 85 per cent. of the moulded depth. The coefficient c is not to be taken as less than .68. Rule XXXVII

Strength

The Assigning Authority is to be satisfied with the structural strength of ships to which freeboards are assigned. Ships which comply with the highest standard of the rules of a Classification Society recognised by the Administration, shall be regarded as having sufficient strength for the minimum freeboards allowed under the Rules. Ships which do not comply with the highest standard of the rules of a Classification Society recognised by the Administration, shall be assigned such increased freeboards as shall be determined by the Assigning Authority, and for guidance the following strength moduli are formulated :—

Material.—The strength moduli are based on the assumption that the structure is built of mild steel, manufactured by the open hearth process (acid or basic), and having a tensile strength of 26 to 32 tons per square inch, and an elongation of at least 16 per cent. on a length of 8 inches. Strength Deck.—The strength deck is the uppermost deck which is incorporated into and forms an integral part of the longitudinal girder within the half-length amidships. Depth to Strength Deck (Ds).—The depth to strength deck is the vertical distance in feet amidships from the top of the keel to the top of the strength deck beam at side. Draught (d).—The draught is the vertical distance in feet amidships from the top of the keel to the centre of the disc. Longitudinal

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Modulus.—The longitudinal modulus I/Y is the moment of inertia I of the midship section about the neutral axis divided by the distance y measured from the neutral axis to the top of the strength deck beam at side, calculated in way of openings but without deductions for rivet holes. Areas are measured in square inches and distances in feet. Below the strength deck, all continuous longitudinal members other than such parts of under deck girders as are required entirely for supporting purposes, are included. Above the strength deck, the gunwale angle bar and the extension of the sheerstrake are the only members included. The required longitudinal modulus for effective material is expressed by f.d.B., where f is the factor obtained from the following table :—

L.	f.	L.	f.
100	1.80	360	9.40
120	2.00	380	10.30
140	2.35	400	11.20
160	2.70	420	12.15
180	3.15	440	13.10
200	3.60	460	14.15
220	4.20	480	15.15
240	4.80	500	16.25
260	5.45	520	17.35
280	6.20	540	18.45
300	6.95	560	19.60
320	7.70	580	20.80
340	8.55	600	22.00

For intermediate lengths, the value of f is determined by interpolation. This formula applies where L does not exceed 600 feet; B is between $\frac{11.5m}{100}$ ($\frac{11.5m}{100}$ or 0, whichever is the less) and $\text{Capacity} = \frac{f}{12}(4A + 2B + 4C)$, both inclusive, and $\frac{100}{m} - \frac{2}{(c + 0.25 + 4.17)}$ is between 10 and 13.5, both inclusive. Frame.—For the purpose of the frame modulus, the frame is regarded as composed of a frame angle and a reverse angle each of the same size and thickness. Frame Modulus.—

The modulus I/Y of the midship frame below the lowest tier of beams is the moment of inertia I of the frame section about the neutral axis divided by the distance y measured from the neutral axis to the extremity of the frame section, calculated without deduction for rivet and bolt holes. The modulus is measured in inch units. The required frame modulus is expressed by

$$\text{Area} = \frac{f}{12}(2a + 1.5b + 4c + 1.5d + 2e)$$

$$\text{Area} = \frac{f}{12}(2a + 1.5b + 4c + 1.5d + 2e)$$

where—

s is the frame spacing in inches. t is the vertical distance in feet measured at amidships from the top of the keel to a point midway between the top of the inner bottom at side and the top of the heel bracket (see Figure 2); where there is no double bottom, t is measured to a point midway between the top of the floor at centre and the top of the floor at side. $F1$ is a coefficient depending on H , which, in ships fitted with double bottoms, is the vertical distance in feet from the middle of the beam bracket of the lowest tier of beams at side to a point midway between

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the top of the inner bottom at side and the top of the heel bracket (see Figure 2). Where there is no double bottom, H is measured to a point midway between the top of the floor at centre and the top of the floor at side. Where the frame obtains additional strength from the form of the ship, due allowance is made in the value of f_1 . F_2 is a coefficient depending on K, which is the vertical distance in feet from the top of the lowest tier of beams at side to a point 7 feet 6 inches above the freeboard deck at side, or, if there is a superstructure, to a point 12 feet 6 inches above the freeboard deck at side (see Figure 2). The values of f_1 and f_2 are obtained from the following tables :—

H in feet	0	7	9	11	13	15	17	19	21	23	25
F1	9	11	12.5	15	19	24	29.5	36	43	51	59

K in feet	0	5	10	15	20	25	30	35	40
F2	0	0.5	10	2.0	30	4.5	6.5	90	12.0

Intermediate values are obtained by interpolation. This formula applies where D is between 15 feet and 60 feet,

both inclusive, B is between and both inclusive, is between 10 and 13.5, both inclusive; and the horizontal distance from the outside of the frame to the centre of the first row of pillars does not exceed 20 feet. In single deck ships of ordinary form, where H does not exceed 18 feet, the frame modulus determined by the preceding method is multiplied by the factor f_3 where

Where the horizontal distance from the outside of the frame to the centre of the first row of pillars exceeds 20 feet, the Assigning Authority is to be satisfied that sufficient additional strength is provided.

Superstructures

Rule XXXVIII

Height of Superstructure

The height of a superstructure is the least vertical height measured from the top of the superstructure deck to the top of the freeboard deck beams minus the difference between D and the moulded depth (see, Rules XXXIV and XXXV). Rule XXXIX

Standard Height of Superstructure

The standard height of a raised quarter deck is 3 feet for ships up to and including 100 feet in length, 4 feet for ships 250 feet in length and 6 feet for ships 400 feet in length and above. The standard height of any other superstructure is 6 feet for ships up to and including 250 feet

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in length and 7 feet 6 inches for ships 400 feet in length and above. The standard height at intermediate lengths is obtained by interpolation. Rule XL

Length of Superstructure (5)

The length of a superstructure is the mean covered length of the parts of the superstructure which extend to the sides of the ship and lie within lines drawn perpendicular to the extremities of the Summer load water-line, as defined in Rule XXXII. Rule XLI

Enclosed Superstructure

A detached superstructure is regarded as enclosed only where—

- (a) the enclosing bulkheads are of efficient construction (see Rule XLII);
- (b) the access openings in these bulkheads are fitted with Class 1 or Class 2 closing appliances (see Rules XLIII and XLIV);
- (c) all other openings in sides or ends of the superstructure are fitted with efficient weathertight means of closing; and
- (d) independent means of access to crew, machinery, bunker and other working spaces within bridges and poops are at all times available when the bulkhead openings are closed. Rule XLII

Superstructure Bulkheads

Bulkheads at exposed ends of poops, bridges and forecastles are deemed to be of efficient construction where the Assigning Authority is satisfied that, in the circumstances, they are equivalent to the following standard for ships with minimum freeboards under which standard the stiffness and plating are of the scantlings given in Table 3, the stiffeners are spaced 30 inches apart, the stiffeners on poop and bridge front bulkheads have efficient end connections, and those on after bulkheads of bridges and forecastles extend for the whole distance between the margin angles of the bulkheads. Table 3

Exposed Bulkheads of Superstructures of Standard Height

Bridge Front Bulkheads. Unprotected Bulkheads of Poops .4 L or more in Length.	Bulkheads of Poops Partially Protected or less in Length than .4 L.	After Bulkheads of Bridges and Forecastles.			
Length of Ship. Feet.	Bulb Angle Stiffeners. Inches.	Length of Ship. Feet.	Plain Angle Stiffeners. Inches.	Length of Ship. Feet.	Plain Angle Stiffeners. Inches.
Under 160	5 ½ x 3 x .30	Under 150	3 x 2 ½ x .30	Under 150	2 ½ x 2 ½ x .26
160	6 x 3 x .32	150	3 ½ x 2 ½ x .32	150	3 x 2 ½ x .28
200	6 ½ x 3 x .34	200	4 x 3 x .34	250	3 ½ x 3 x .30

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240	7 x 3 x .36	250	4 ½ x 3 x .36	350	4 x 3 x .32
280	7 ½ x 3 x .38	300	5 x 3 x .38		
320	8 x 3 x .40	350	5 ½ x 3 x .42		
360	8 ½ x 3 x .42	400	6 x 3 x .44		
400	9 x 3 x .44	450	6 ½ x 3 ½ x .46		
440	9 ½ x 3 ½ x .46	500	7 x 3 ½ x .48		
480	10 x 3 ½ x .48	550	7 x 3 ½ x .50		
520	10 ½ x 3 ½ x .50				
560	11 x 3 ½ x .52				

Length of Ship. Feet.	Bulkhead Plating. Inch.	Length of Ship. Feet.	Bulkhead Plating. Inch.	Length of Ship. Feet.	Bulkhead Plating. Inch.
200 and under.	.3	160 and under.	.24	160 and under.	.20
380 and above.	.44	400 and above.	.38	400 and above.	.30

For ships intermediate in length the thicknesses of bulkhead plating are obtained by interpolation.

Appliances for Closing Access Openings in Bulkheads at ends of Detached Superstructures

Rule XLIII

Class 1 Closing Appliances

These appliances are of iron and steel, are in all cases permanently and strongly attached to the bulkhead, are framed, stiffened and fitted so that the whole structure is of equivalent strength to the unpierced bulkhead, and are weathertight when closed. The means for securing these appliances are permanently attached to the bulkhead or to the appliances and the latter are so arranged that they can be closed and secured from both sides of the bulkhead or from the deck above. The sills of the access openings are at least 15 inches above the deck. Rule XLIV

Class 2 Closing Appliances

These appliances are (a) strongly framed hard wood hinged doors, which are not more than 30 inches wide nor less than 2 inches thick; or (6) shifting boards fitted for the full height of the opening in channels riveted to the bulkhead, the shifting boards being at least 2 inches thick

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where the width of opening is 30 inches or less, and increased in thickness at the rate of 1 inch for each additional 15 inches of width, or (c) portable plates of equal efficiency.

Temporary Appliances for Closing Openings in Superstructure Decks

Rule XLV Temporary closing appliances for middle line openings in the deck of an enclosed superstructure consist of—

- (a) a steel coaming not less than 9 inches in height efficiently riveted to the deck;
- (b) hatchway covers as required by Rule X, secured by hemp lashings; and
- (c) hatchway supports as required by Rules XI and XII and Table 1 or 2.

Effective Length of Detached Superstructures

Rule XLVI

General

Where exposed bulkheads at the ends of poops, bridges, and forecastles are not of efficient construction (see Rule XLII) they are considered as non-existent. Where in the side plating of a superstructure there is an opening not provided with permanent means of closing, the part of the superstructure in way of the opening is regarded as having no effective length. Where the height of a superstructure is less than the standard its length is reduced in the ratio of the actual to the standard height. Where the height exceeds the standard, no increase is made in the length of the superstructure. Rule XLVLT

Poop

Where there is an efficient bulkhead and the access openings are fitted with Class 1 closing appliances, the length to the bulkhead is effective. Where the access openings in an efficient bulkhead are fitted with Class 2 closing appliances and the length to the bulkhead is .5 L or less, 100 per cent. of that length is effective; where the length is .7 L or more, 90 per cent. of that length is effective; where the length is between .5 L and .7 L, an intermediate percentage of that length is effective; where an allowance is given for an efficient adjacent trunk (see Rule LI), 90 per cent. of the length to the bulkhead is to be taken as effective. 50 per cent. of the length of an open poop or of an open extension beyond an efficient bulkhead is effective. Rule XLVIII

Raised Quarter Deck

Where there is an efficient intact bulkhead, the length to the bulkhead is effective. Where the bulkhead is not intact, the superstructure is considered as a poop of less than standard height. Rule XLIX

Bridge

Where there is an efficient bulkhead at each end, and the access openings in the bulkheads are fitted with Class 1 closing appliances, the length between the bulkheads is effective. Where the access openings in the forward bulkhead are fitted with Class 1 closing appliances and the access openings in the after bulkhead with Class 2 closing appliances, the length between the bulkheads is effective; where an allowance is given for an efficient trunk, adjacent to the after bulkhead (see Rule LI), 90 per cent. of the length is effective. Where the access openings in both bulkheads are fitted with Class 2 closing appliances, 90 per cent. of the length between

the bulkheads is effective. Where the access openings in the forward bulkhead are fitted with Class 1 or Class 2 closing appliances and the access openings in the after bulkhead have no closing appliances, 75 per cent. of the length between the bulkheads is effective. Where the access openings in both bulkheads have no closing appliances, 50 per cent. of the length is effective. 75 per cent. of the length of an open extension beyond the after bulkhead, and 50 per cent. of that beyond the forward bulkhead, are effective. Rule L

Forecastle

Where there is an efficient bulkhead and the access openings are fitted with Class 1 or Class 2 closing appliances, the length to the bulkhead is effective. Where no closing appliances are fitted and the sheer forward of amidships is not less than the standard sheer, 100 per cent. of the length of the forecastle forward of $\frac{1}{2}L$ from the forward perpendicular is effective; where the sheer forward is half the standard sheer or less, 50 per cent. of that length is effective; and where the sheer forward is intermediate between the standard and half the standard sheer, an intermediate percentage of that length is effective. 50 per cent. of the length of an open extension beyond the bulkhead or beyond $\frac{1}{2}L$ from the forward perpendicular is effective. Rule LI

Trunk

A trunk or similar structure which does not extend to the sides of the ship is regarded as efficient provided that—

- (a) the trunk is at least as strong as a superstructure;
- (b) the hatchways are in the trunk deck, and comply with the requirements of Rules VIII to XVI, and the width of the trunk deck stringer provides a satisfactory gangway and sufficient lateral stiffness;
- (c) a permanent working platform fore and aft fitted with guard rails is provided by the trunk deck, or by detached trunks connected to other superstructures by efficient permanent gangways;
- (d) ventilators are protected by the trunk, by watertight covers or by equivalent means;
- (e) open rails are fitted on the weather portions of the free board deck in way of the trunk for at least half their length;
- (f) the machinery casings are protected by the trunk, by a superstructure of standard height, or by a deck house of the same height and of equivalent strength. Where access openings in poop and bridge bulkheads are fitted with Class 1 closing appliances, 100 per cent. of the length of an efficient trunk reduced in the ratio of its mean breadth to B is added to the effective length of the superstructures. Where the access openings in these bulkheads are not fitted with Class 1 closing appliances 90 per cent. is added. The standard height of a trunk is the standard height of a bridge. Where the height of the trunk is less than the standard height of a bridge, the addition is reduced in the ratio of the actual to the standard height; where the height of hatchway coamings on the trunk deck is less than the standard height of coamings (see Rule IX), a reduction from the actual height of trunk is to be made which corresponds to the difference between the actual and the standard height of coamings.

Effective Length of Enclosed Superstructures with Middle Line Openings

Rule LII

Status: This is the original version (as it was originally enacted).

Enclosed Superstructure with Middle Line Openings in the deck not Provided with Permanent Means of Closing

Where there is an enclosed superstructure with one or more middle line openings in the deck not provided with permanent means of closing (see Rules VIII to XVI), the effective length of the superstructure is determined as follows :—

- (1) Where efficient temporary closing appliances are not provided for the middle line deck openings (see Rule XLV), or the breadth of opening is 80 per cent. or more of the breadth B_1 , of the superstructure deck at the middle of the opening, the ship is considered as having an open well in way of each opening, and freeing ports are to be provided in way of this well. The effective length of superstructure between openings is governed by Rules XLVII, XLIX, and L.
- (2) Where efficient temporary closing appliances are provided for middle line deck openings and the breadth of opening is less than $.8 B_1$, the effective length is governed by Rules XLVII, XLIX, and L, except that where access openings in 'tween deck bulkheads are closed by Class 2 closing appliances, they are regarded as being closed by Class 1 closing appliances in determining the effective length. The total effective length is obtained by adding to the length determined by (1) the difference between this length and the length of the ship modified in the ratio of—

where b —
 breadth of deck opening;
 where b is greater than $.5$ it is taken as $.5$.

Deductions for Superstructures

Rule LIII

Deductions for Superstructures

Where the effective length of superstructures is $1.0 L$, the deduction from the freeboard is 14 inches at 80 feet length of ship, 34 inches at 280 feet length, and 42 inches at 400 feet length and above; deductions at intermediate lengths are obtained by interpolation. Where the total effective length of superstructures is less than $1.0 L$ the deduction is a percentage obtained from the following Table :—

Superstructure Line.	Effective Length of Superstructure (E).											
0L	.1L	.2L	.3L	.4L	.5L	.6L	.7L	.8L	.9L	1.0L	Percent.	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent.	
All types with	0	5	10	15	23.5	32	46	63	75.3	87.7	100	A

Status: This is the original version (as it was originally enacted).

forecastle and without detached bridge												
All types with forecastle and detached bridge ⁽⁴⁾	0	6.3	12.7	19	27.5	36	46	63	75.3	87.7	100	B

Sheer

Rule LIV

General

The sheer is measured from the deck at side to a line of reference drawn parallel to the keel through the sheer line at amidships. In ships designed to trim by the stern in service, the sheer may be measured in relation to the load line, provided an additional mark is placed at .25 L forward of amidships, to indicate the assigned load line. This mark is to be similar to the load line disc amidships. In flush deck ships and in ships with detached superstructures the sheer is measured at the freeboard deck. In ships with topsides of unusual form in which there is a step or break in the topsides, the sheer is considered in relation to the equivalent depth amidships (see Rule XXXV). In ships with a superstructure of standard height which extends over the whole length of the freeboard deck, the sheer is measured at the superstructure deck; where the height exceeds the standard, the sheer may be considered in relation to the standard height. Where a superstructure is intact or access openings in its enclosing bulkheads are fitted with Class 1 closing appliances, and the superstructure deck has at least the same sheer as the exposed freeboard deck, the sheer of the enclosed portion of the freeboard deck is not taken into account.

Rule LV

Standard Sheer Profile

The ordinates (in inches) of the standard sheer profile are given in the following Table, where L is the number of feet in the length of the ship :—

Station.	Ordinate.	Factor.
A.P.	.1 L + 10	1
1/6 L from A.P.	.0445 L + 4.45	4
1/3 L from A.P.	.01 L + 1.1	2
Amidships.	0	4

(4) 6 Where the effective length of a detached bridge is less than .2L the Percentages are obtained by interpolation between lines B and A.
 Where no forecastle is fitted the above percentage are reduced by 5.
 Percentages for intermediate lengths of superstructures are obtained by interpolation.

Status: This is the original version (as it was originally enacted).

1/3 L from F.P.	.022 L + 2-2	2
I/O L from F.P.	.089 L + 89	4
F.P.	.2 L + 20	1

A.P. = After end of Summer load water-line. F.P. = Fore end of Summer load water-line. Rule LVI

Measurement of Variations from Standard Sheer Profile

Where the sheer profile differs from the standard, the seven ordinates of each profile are multiplied by the appropriate factors given in the table of ordinates. The difference between the sums of the respective products, divided by 18, measures the deficiency or excess of sheer. Where the after half of the sheer profile is greater than the standard and the forward half is less than the standard, no credit is allowed for the part in excess and the deficiency only is measured. Where the forward half of the sheer profile exceeds the standard, and the after portion of the sheer profile is not less than 75 per cent. of the standard, credit is allowed for the part in excess; where the after part is less than 50 per cent. of the standard no credit is given for the excess sheer forward. Where the after sheer is between 50 per cent. and 75 per cent. of the standard, intermediate allowances may be granted for excess sheer forward. Rule LVII Correction for Variations from Standard Sheer Profile The correction for sheer is the deficiency or excess of sheer (see Rule LVI), multiplied by where S is the total length of superstructure, as defined in Rule XL. Rule LVIII

Addition for Deficiency in Sheer

Where the sheer is less than the standard, the correction for deficiency in sheer (see Rule LVII) is added to the freeboard. Rule LIX

Deduction for Excess Sheer

In flush deck ships and in ships where an enclosed superstructure covers .1 L before and .1 L abaft amidships, the correction for excess of sheer (see Rule LVII) is deducted from the freeboard; in ships with detached superstructures where no enclosed superstructure covers amidships, no deduction is made from the freeboard; where an enclosed superstructure covers less than .1 L before and .1 L abaft amidships, the deduction is obtained by interpolation. The maximum deduction for excess sheer is 1 ½ inches at 100 feet and increases at the rate of 1 ½ inches for each additional 100 feet in the length of the ship.

Hound of Beam

Rule LX

Standard Round of Beam

The standard round of beam of the freeboard deck is one-fiftieth of the breadth of the ship. Rule LXI

Status: This is the original version (as it was originally enacted).

Round of Beam Correction

Where the round of beam of the freeboard deck is greater or less than the standard, the freeboard is decreased or increased respectively by one-fourth of the difference between the actual and the standard round of beam, multiplied by the proportion of the length of the freeboard deck not covered by enclosed superstructures. Twice the standard round of beam is the maximum for which allowance is given.

Minimum Freeboard

Rule LXII

Summer Freeboard

The minimum freeboard in Summer is the freeboard derived from the Freeboard Table after corrections for departures from the standards and after deduction for superstructures. The freeboard in salt water measured from the intersection of the upper surface of the freeboard deck with the outer surface of the shell is not to be less than 2 inches. Rule LXIII

Tropical Freeboard

The minimum freeboard in the Tropical Zone is the freeboard obtained by a deduction from the Summer freeboard of J inch per foot of Summer draught measured from the top of the keel to the centre of the disc. The freeboard in salt water measured from the intersection of the upper surface of the freeboard deck with the outer surface of the shell is not to be less than 2 inches. Rule LXIV

Winter Freeboard

The minimum freeboard in Winter is the freeboard obtained by an addition to the Summer freeboard of J inch per foot of Summer draught, measured from the top of the keel to the centre of the disc. Rule LXV

Winter North Atlantic Freeboard

The minimum freeboard for ships not exceeding 330 feet in length on voyages across the North Atlantic, North of latitude 36° N., during the winter months, is the Winter freeboard plus two inches; for ships over 330 feet in length it is the Winter freeboard. Rule LXVI

Fresh Water Freeboard

The minimum freeboard in fresh water of unit density is the freeboard obtained by deducting from the minimum freeboard in salt water inches, where A = displacement in salt water in tons at the Summer load water-line, and

T = tons per inch immersion in salt water at the Summer load water-line. Where the displacement at the Summer load water-line cannot be certified, the deduction is to be J inch per foot of Summer draught measured from the top of the keel to the centre of the disc. Rule LXVII

Freeboard Table for Steamers

Basic Minimum Summer Freeboards for Steamers which Comply with the Standards Laid Down in the Rules.

Status: This is the original version (as it was originally enacted).

L. (Feet)	Freeboard. (Inches)	L. (Feet)	Freeboard. (Inches)	L. (Feet)	Freeboard. (Inches)	L. (Feet)	Freeboard. (Inches)
80	8.0	250	32.3	420	77.8	590	127.0
90	9.0	260	34.4	430	80.9	600	129.5
100	10.0	270	36.5	440	84.0	610	132.0
110	11.0	280	38.7	450	87.1	620	134.4
120	12.0	290	41.0	460	90.2	630	136.8
130	13.0	300	43.4	470	93.3	640	139.1
140	14.2	310	45.9	480	96.3	650	141.4
150	15.5	320	48.4	490	99.3	660	143.7
160	16.9	330	51.0	500	102.3	670	145.9
170	18.3	340	53.7	510	105.2	680	148.1
180	19.8	350	56.5	520	108.1	690	150.2
190	21.4	360	59.4	630	110.9	700	152.3
200	23.1	370	62.4	540	113.7	710	154.4
210	24.8	380	65.4	550	116.4	720	156.4
220	26.6	390	68.4	560	119.1	730	158.5
230	28.5	400	71.5	570	121.8	740	160.5
240	30.3	410	74.6	580	124.4	750	162.5

- (i) The minimum freeboards for flush deck steamers are obtained by an addition to the above Table at the rate of 1/8 inches for every 100 feet of length.
- (ii) The freeboards at intermediate lengths are obtained by interpolation.
- (iii) Where c exceeds .68, the freeboard is multiplied by the factor
- (iv) Where D exceeds the freeboard is increased by R inches, where R is at lengths less than 390 feet, and 3 at 390 feet length and above. In a ship with an enclosed superstructure covering at least .6 L amidships, with a complete trunk, or with a combination of intact partial superstructures and trunk which extends all fore and aft, where D is less than, the freeboard is reduced at the above rate. Where the height of superstructures or trunk is less than the standard height, the reduction is in the ratio of the actual to the standard height.
- (v) Where the actual depth to the surface of the freeboard deck amidships is greater or less than D , the difference between the depths (in inches) is added to or deducted from the freeboard. Part IV Load Lines for Sailing Ships Rule LXVIII Lines to be Used in Connection with the Disc Winter and Tropical load lines are not marked on sailing ships. The maximum load line to which sailing ships may be laden in salt water in Winter and in the Tropical Zone is the centre of the disc (see Figure 3).

LXIX

Status: This is the original version (as it was originally enacted).

Conditions of Assignment of Load Line

The conditions of assignment are those contained in Part II of these Rules. Rule LXX

Computation of Freeboard

Freeboards are computed from the Freeboard Table for Sailing Ships in the same manner as the freeboards for steamers are computed from the Freeboard Table for Steamers, except as follows:—

Rule LXXI

Depth for Freeboard (D)

In sailing ships having a greater rate of rise of floor than 1 ½ inches per foot, the vertical distance from the top of keel (Rule XXXIV), is reduced by half the difference between the total rise of floor at the half-breadth of the ship and the total rise at 1 ½ inches per foot. 2 ½ inches per foot of half-breadth is the maximum rate of rise for which a deduction is made. Where the form at the lower part of the midship section is of a hollow character, or thick garboards are fitted, the depth is measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel. The depth used with the Freeboard Table is to be taken as not L less than. Rule LXXII

Coefficient of Fineness (c)

The coefficient used with the Freeboard Table is to be taken as not less than .62 and not greater than .72. Rule LXXIII

Superstructures in Wood Ships

In wood ships the construction and closing arrangements of superstructures for which deductions are made from the freeboard are to be to the satisfaction of the Assigning Authority Rule LXXIV

Deductions for Superstructures

Where the effective length, pi superstructures is 1.0 L, the deduction from the freeboard is 8 inches at 80 feet length of ship, and 28 inches at 330 feet length and above; deductions at intermediate lengths are obtained by interpolation. Where the total effective length of superstructures is less than 1.0 L, the deduction is a percentage obtained from the following Table :—

Type of Superstructures	Total Effective Lengths of Superstructures (E).		Line.									
	.1 L	.2 L	.3L	.4L	.5L	.6L	.7 L	.8L	.9L	1.0L	%	
0	.1 L	.2 L	.3L	.4L	.5L	.6L	.7 L	.8L	.9L	1.0L	%	
	%	%	%	%	/o	%	%	%	/o	/o	%	

Status: This is the original version (as it was originally enacted).

All types without Bridge	0	7	13	17	23.5	30	47 ½	70	80	90	100	A
All types with Bridge ⁽⁵⁾	0	7	14.7	22	32	42	56	70	80	90	100	B

Rule LXXV

Minimum Freeboards

No addition to the freeboard is required for Winter freeboard, nor is a deduction permitted for Tropical freeboard. An increase in freeboard of 3 inches is made for voyages across the North Atlantic North of latitude 36° N. during the winter months. In computing the fresh water freeboard for a wood ship, the draught is measured from the lower edge of the rabbet of keel to the centre of the disc. Rule LXXVI

Freeboard Table for Sailing Ships

Minimum Summer, Winter, and Tropical Freeboards for Iron and Steel Flush Deck Sailing Ships, which comply with the Standards laid down in the Rules.

L.	Freeboard.	L.	Freeboard.	L.	Freeboard.	L.	Freeboard
Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
80	9.2	140	21.3	200	35.4	270	53.5
90	11.0	150	23.5	210	37.9	280	56.3
100	12.9	160	25.8	220	40.4	290	59.1
110	14.9	170	28.2	230	42.9	300	61.9
120	17.0	180	30.6	240	45.5	310	64.7
130	19.1	190	33.0	250	48.1	320	67.6
				260	50.8	330	70.5

- (i) The freeboards at intermediate lengths are obtained by interpolation.
 - (ii) Where c exceeds .62, the freeboard is multiplied by the factor
 - (iii) Where D exceeds the freeboard is increased by inches.
 - (iv) Where the actual depth to the surface of the freeboard deck amidships is greater or less than D , the difference between the depths (in inches) is added to or deducted from the freeboard. Rule LXXVII Freeboard for Wood Sailing Ships
The freeboard for a wood sailing ship is the final freeboard the ship would obtain if she were of iron and steel, with the addition of such penalties as the Assigning Authority may determine, having regard to the classification,

(5) 7 Where the effective length of Bridge is less than .2 L, the percentages are obtained by interpolation between lines B and A. Percentages for intermediate lengths of superstructures are obtained by interpolation.

Status: This is the original version (as it was originally enacted).

construction, age and condition of the ship. Wood ships of primitive build such as dhows, junks, prahus, &c, are to be dealt with by the Administration so far as is reasonable and practicable under the Rules for Sailing Ships. Part V Load Lines for Steamers carrying Timber Deck Cargoes

Definitions

Timber Deck Cargo.—The term " timber deck cargo " means a cargo of timber carried on an uncovered part of a freeboard or superstructure deck. The term does not include wood pulp or similar cargo. Timber Load Line.—A timber load line is a special load line to be used only when the ship is carrying a timber deck cargo in compliance with the following conditions and regulations:—

Rule LXXVIII

Marks on the Ship's Sides

Timber Load Lines,—The lines which indicate the maximum timber load lines in different circumstances and at different seasons are to be horizontal lines, 9 inches in length and 1 inch in breadth, which extend from, and are at right angles to, a vertical line marked 21 inches abaft the centre of the disc (see Figure 4). They are to be marked and verified similarly to the ordinary load lines (see Rules V to VII). The Summer Timber Load Line is indicated by the upper edge of a line marked LS. The Winter Timber Load Line is indicated by the upper edge of a line marked LW. The Winter North Atlantic Timber Load Line is indicated by the upper edge of a line marked LWNA. The Tropical Timber Load Line is indicated by the upper edge of a line marked LT. The Fresh Water Timber Load Line in Summer is indicated by the upper edge of a line marked LF. The difference between the Fresh Water Timber load line in Summer and the Summer Timber load line is the allowance to be made for loading in fresh water at the other Timber load lines. The Fresh Water Timber load line in the Tropical Zone is indicated by the upper edge of a line marked LTF.(6)

Figure 4.

Supplementary Conditions of Assignment and Regulations for Deeper Loading

Rule LXXIX

Construction of Ship

The structure of the ship is to be of sufficient strength for the deeper draught allowed and for the weight of the deck cargo. Rule LXXX

Superstructures

The ship is to have a fore-castle of at least standard height and at least 7 per cent. of the length of the ship, and, in addition, a poop, or a raised quarter deck with a strong steel hood or deck house fitted aft.

Rule LXXXI

(6) 8 Where seagoing steamers navigate a river or inland water, deeper loading is permitted corresponding to the weight of fuel, &c, required for consumption between the point of departure and the open sea.

Status: This is the original version (as it was originally enacted).

Machinery Casings

Machinery casings on the freeboard deck are to be protected by a superstructure of at least standard height, unless the machinery casings are of sufficient strength and height to permit of the carriage of timber alongside. Rule LXXXII

Double Bottom Tanks

Double bottom tanks where fitted within the midship half length of the ship are to have adequate longitudinal subdivision. Rule LXXXIII

Bulwarks

The ship must be fitted either with permanent bulwarks at least 3 feet 3 inches high, specially stiffened on the upper edge and supported by strong bulwark stays attached to the deck in the way of the beams and provided with necessary freeing ports, or with efficient rails of the same height as the above and of specially strong construction. Rule LXXXIV

Deck Openings covered by Timber Deck Cargo

Openings to spaces below the freeboard deck are to be securely closed and battened down. Ah fittings, such as hatchway beams, fore-and-afters, and covers, are to be in place. Where hold ventilation is needed, the ventilators are to be efficiently protected. Rule LXXXV

Stowage

The wells on the freeboard deck are to be filled with timber stowed as solidly as possible, to at least the standard height of a bridge. On a ship within a seasonal winter zone in winter, the height of the deck cargo above the freeboard deck is not to exceed one-third of the extreme breadth of the ship. All timber deck cargo is to be compactly stowed, lashed and secured, it must not interfere in any way with the navigation and necessary work of the ship or with the provision of a safe margin of stability at all stages of the voyage, regard being given to additions of Weight, such as those due to absorption of water and to losses of weight such as those due to consumption of fuel and stores. Rule LXXXVI

Protection of Crew, Access to Machinery Space, &C

Safe and satisfactory access to the quarters of the crew, to the machinery space and to all other parts used in the necessary work of the ship, is to be available at all times. Deck cargo in way of openings which give access to such parts is to be so stowed that the openings can be properly closed and secured against the admission of water. Efficient protection for the crew in the form of guard rails or life lines, spaced not more than 12 inches apart vertically, is to be provided on each side of the deck cargo to a height of at least 4 feet above the cargo. The cargo is to be made sufficiently level for gangway purposes. Rule LXXXVII

Steering Arrangements

Steering arrangements are to be effectively protected from damage by cargo, and, as far as practicable are to be accessible. Efficient provision is to be made for steering in the event of a breakdown in the main steering arrangements. Rule LXXXVIII

Status: This is the original version (as it was originally enacted).

Uprights

Uprights when required by the nature of the timber are to be of adequate strength and may be of wood or metal; the spacing is to be suitable for the length and character of timber carried, but is not to exceed 10 feet. Strong angles or metal sockets efficiently secured to the stringer plate or equally efficient means are to be provided for securing the uprights. Rule LXXXIX

Lashings

Timber deck cargo is to be efficiently secured throughout its length by independent overall lashings spaced not more than 10 feet apart. Eye plates for these lashings are to be riveted to the sheer-strake at intervals of not more than 10 feet, the distance from an end bulkhead of a superstructure to the first eye plate being not more than 6 feet 6 inches. Additional eye plates may be fitted on the stringer plate. Overall lashings are to be in good condition and are to be not less than 1/2 inch close link chain or flexible wire rope of equivalent strength, fitted with sliphooks and stretching screws, which are to be accessible at all times. Wire rope lashings are to have a short length of long link chain to permit the length of lashings to be regulated. When timber is in lengths less than 12 feet, the spacing of the lashings is to be reduced to suit the length of timber or other suitable provision made. When the spacing of the lashings is 5 feet or less, the size of the lashing may be reduced, but not less than 1/4 inch chain or equivalent wire rope is to be used. All fittings required for securing the lashings are to be of strength corresponding to the strength of the lashings. On superstructure decks, uprights, where fitted, are to be about 10 feet apart and are to be secured by athwartship lashings of ample strength. Rule XC

Plans

Plans showing the fittings and arrangements for stowing and securing timber deck cargoes in compliance with the foregoing conditions and regulations are to be submitted to the Assigning Authority.

Freeboard

Rule XCI

Computation of Freeboard

Where the Assigning Authority is satisfied that the ship is suitable and that the conditions and arrangements are at least equal to the foregoing requirements for the carriage of timber deck cargo, the Summer freeboards computed in accordance with the Rules and Tables in Part III may be modified to give special timber freeboards, by substituting the following percentages for those in Rule LIU :—

Total Effective Length of Superstructures.

	0	.1L	.2L	.3L	.4L	.5L	.6L	.7L	.8L	.9 L	1.0 L
All types	%	%	%	%	%	%	%	%	%	%	%
20	30.75	41.5	52.25	63	69.25	75.5	81.5	87.5	93.75	100	

The Winter Timber freeboard is to be obtained by adding to the Summer Timber freeboard one-third of an inch per foot of the moulded Summer Timber draught. The Winter North Atlantic

Timber freeboards are the Winter North Atlantic freeboards prescribed in Rule LXV. The Tropical Timber freeboard is to be obtained by deducting from the Summer Timber freeboard one-quarter of an inch per foot of the moulded Summer Timber draught. Part VI Load Lines for Tankers

Definition

Tanker.—The term " tanker " includes all steamers specially constructed for the carriage of liquid cargoes in bulk. Rule XCII

Marks on the Ship's Sides

The marks on the ship's sides are to be as provided in the figure in Rule IV.

Supplementary Conditions of Assignment for Deeper Loading

Rule XCIII

Construction of Ship

The structure of the ship is to be of sufficient strength for the increased draught corresponding to the freeboard assigned. Rule XCIV

Forecastle

The ship is to have a forecastle of which the length is not less than 7 per cent. of the length of the ship and the height is not less than the standard height. Rule XCV

Machinery Casings

The openings in machinery casings on the freeboard deck are to be fitted with steel doors. The casings are to be protected by an enclosed poop or bridge of at least standard height, or by a deck house of equal height and of equivalent strength. The bulkheads at the ends of these structures are to be of the scantlings required for bridge front bulkheads. All entrances to the structures from the freeboard deck are to be fitted with effective closing appliances and the sills are to be at least 18 inches above the deck. Exposed machinery casings on the superstructure deck are to be of substantial construction, and all openings in them are to be fitted with steel closing appliances permanently attached to the casings and capable of being closed and secured from both sides; the sills of such openings are to be at least 15 inches above the deck. Fiddley openings are to be as high above the superstructure deck as is reasonable and practicable and are to have strong steel covers permanently attached in their proper positions. Rule XCVI

Gangway

An efficiently constructed permanent gangway of sufficient strength for its exposed position is to be fitted fore and aft at the level of the superstructure deck between the poop and midship bridge, and when crew are berthed forward, from the bridge to the forecastle, or other equivalent means of access may be provided to carry out the purpose of the gangway, such as passages below deck. Rule XCVII

Status: This is the original version (as it was originally enacted).

0	7	14	21	31	41	52	63	75.3	87.7	100
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Rule CIV

Deduction for Excess Sheer

Where the sheer is greater than the standard, the correction for excess sheer (see Rule LVII of Part III, Load Lines for Steamers) is deducted from the freeboard for all tankers. Rule LIX of Part III does not apply except that the maximum deduction for excess sheer is 1J inches at 100 feet and increases at the rate of 1J inches for each additional 100 feet in the length of the ship. Rule CV

Winter North Atlantic Freeboard

The minimum freeboard for voyages across the North Atlantic, north of latitude 36° N., during the winter months, is the Winter Freeboard plus an addition at a rate of 1 inch per 100 feet in length. Rule CVI

Freeboard Table for Tankers

L in Feet.	Freeboard in Inches.	L in Feet.	Freeboard in Inches
190	21.5	400	62.5
200	23.1	410	64.9
210	24.7	420	67.4
220	26.3	430	69.9
230	28.0	440	72.5
240	29.7	450	75.1
250	31.5	460	77.7
260	33.3	470	80.2
270	35.2	480	82.7
280	37.1	490	85.1
290	39.1	500	87.5
300	41.1	510	89.8
310	43.1	520	92.1
320	45.1	530	94.3
330	47.1	540	96.5
340	49.2	550	98.6
350	51.3	560	100.7
360	53.5	570	102.7
370	55.7	580	104.6

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380	57.9	590	106.5
390	60.2	600	108.4

Ships above 600 feet are to be dealt with by the Administration. ANNEX II Boundaries of the Zones and Seasonal Areas

Zones

The southern boundary of the northern " Winter Seasonal" zone is a line drawn from the east coast of North America along the parallel of lat. 36° N. to Tarifa in Spain; from the east coast of Korea along the parallel of lat. 35° N. to the west coast of Honshiu, Japan; from the east coast of Honshiu along the parallel of lat. 35° N. to long. 150° W., and thence along a rhumb line to the west coast of Vancouver Island at lat. 50° N., Fusan (Korea) and Yokohama to be considered as being on the boundary line of the northern " Winter Seasonal " zone and the " Summer " zone. The northern boundary of the " Tropical " zone is a line drawn from the east coast of South America at lat. 10° N. along the parallel of lat. 10° N. to long. 20° W., thence north to lat. 20° N. and thence along the parallel of lat. 20° N. to the west coast of Africa; a line from the east coast of Africa along the parallel of lat. 8° N. to the west coast of the Malay Peninsula, following thence the coast of Malay and Siam to the east coast of Cochin China at lat. 10° N., thence along the parallel of lat. 10° N. to long. 145° E., thence north to lat. 13° N. and thence along the parallel of lat. 13° N. to the west coast of Central America, Saigon to be considered as being on the boundary line of the " Tropical " zone and the " Seasonal Tropical" area (4). The southern boundary of the " Tropical " zone is a line drawn from the east coast of South America along the Tropic of Capricorn to the west coast of Africa; from the east coast of Africa along the parallel of lat. 20° S. to the west coast of Madagascar, thence along the west and north coast of Madagascar to long. 50° E., thence north to lat. 10° S., thence along the parallel of lat. 10° S. to long. 110° E., thence along a rhumb line to Port Darwin, Australia, thence eastwards along the coast of Australia and Wessel Island to Cape Wessel, thence along the parallel of lat. 11° S. to the west side of Cape York, from the east side of Cape York at lat. 11° S. along the parallel of lat. 11° S. to long. 150° W., thence along a rhumb line to the point lat. 26° S. long. 75° W., and thence along a rhumb line to the west coast of South America at lat. 30° S., Coquimbo, Rio de Janeiro and Port Darwin to be considered as being on the boundary line of the " Tropical " and " Summer " zones. The following regions are to be included in the "Tropical" zone :—

- (1) The Suez Canal, the Bed Sea and the Gulf of Aden, from Port Said to the meridian of 45° E., Aden and Berbera to be considered as being on the boundary line of the " Tropical " zone and the " Seasonal Tropical " area 2 (b).
- (2) The Persian Gulf to the meridian of 59° E. The northern boundary of the southern " Winter Seasonal" zone is a line drawn from the east coast of South America along the parallel of lat. 40° S. to long. 56° W., thence along a rhumb line to the point lat. 34° S., long. 50° W., thence along the parallel of lat. 34° S. to the west coast of South Africa; from the east coast of South Africa at lat. 30° S. along a rhumb line to the west coast of Australia at lat. 35° S., thence along the south coast of Australia to Cape Arid, thence along a rhumb line to Cape Grim, Tasmania, thence along the north coast of Tasmania to Eddystone Point, thence along a rhumb line to the west coast of South Island, New Zealand, at long. 170° E., thence along the west, south and east coasts of South Island to Cape Saunders, thence along a rhumb line to the point lat. 33° S. long. 170° W.; and thence along the parallel of lat. 33° S. to the west coast of South America,

Valparaiso, Cape Town and Durban to be considered as being on the boundary line of the southern " Seasonal Winter" and " Summer " zones. Summer Zones. The remaining areas constitute the " Summer " zones.

Seasonal Areas

The following areas are Seasonal Tropical areas :—

- (1) In the North Atlantic Ocean. An area bounded on the north by a line from Cape Catoche in Yucatan to Cape San Antonio in Cuba, by the South Cuban Coast to lat. 20° N. and by the parallel of lat. 20° N. to the point lat. 20° N. long. 20° W.; on the west by the coast of Central America; on the south by the north coast of South America and by parallel of lat. 10° N., and on the east by the meridian of 20° W. Tropical: 1st November to 15th July. Summer : 16th July to 31st October.
- (2) Arabian Sea.
 - (a) North of lat. 24° N. Karachi is to be considered as being on the boundary line of this area and the seasonal Tropical area (b) below. Tropical : 1st August to 20th May. Summer : 21st May to 31st July.
 - (b) South of lat. 24° N. Tropical: 1st December to 20th May and 16th September to 15th October. Summer: 21st May to 15th September and 16th October to 30th November.
- (3) Bay of Bengal. Tropical: 16th December to 15th April. Summer : 16th April to 15th December.
- (4) In the China Sea. An area bounded on the west and north by the coast of Indo-China and China to Hong Kong, on the east by a rhumb line to the port of Sual (Luzon Island), and by the west coast of the Islands of Luzon, Samar and Leyte to the parallel of 10° N., and on the south by the parallel of lat. 10° N. Hong Kong and Sual to be considered as being on the boundary of the " Seasonal Tropical " and " Summer " zones. Tropical: 21st January to 30th April. Summer : 1st May to 20th January.
- (5) In the North Pacific Ocean.
 - (a) An area bounded, on the north by the parallel of lat. 25° N., on the west by the meridian of 160° E., on the south by the parallel of lat. 13° N., and on the east by the meridian of 130° W. Tropical : 1st April to 31st October. Summer : 1st November to 31st March.
 - (b) An area bounded on the north and east by the coast of California, Mexico and Central America, on the west by the meridian of 120° W. and by a rhumb line from the point lat. 30° N., long. 120° W., to the point lat. 13° N., long. 105° W., and on the south by the parallel of lat. 13° N. Tropical: 1st March to 30th June and 1st to 30th November. Summer : 1st July to 31st October and 1st December to 28th/29th February.
- (6) In the South Pacific Ocean.
 - (a) An area bounded on the north by the parallel of lat. 11° S., on the west by the east coast of Australia, on the south by the parallel of lat. 20° S., and on the east by the meridian of 175° E., together with the Gulf of Carpentaria south of lat. 11° S. Tropical : 1st April to 30th November. Summer : 1st December to 31st March.
 - (b) An area bounded on the west by the meridian of 150° W., on the south by the parallel of lat. 20° S., and on the north and east by the rhumb line forming the southern boundary of the " Tropical" zone. Tropical: from 1st March to

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30th November. Summer : from 1st December to 28th/29th February. The following are " Seasonal Winter " areas :—

Northern " Seasonal Winter " Zone (between North America and Europe).

(a) In the area within and to the Northwards of the following line :—

A line drawn south from the coast of Greenland at long. 50° W. to lat. 45° N., thence along the parallel of lat. 45° N. to the meridian of 15° W., thence north to lat. 60° N., thence along the parallel of lat. 60° N. to the west coast of Norway, Bergen to be considered as being on the boundary line of this area and area (b) below. Winter from 16th October to 15th April. Summer from 16th April to 15th October.

(b) An area outside area (a) above and north of the parallel of lat. 36° N. Winter from 1st November to 31st March. Summer from 1st April to 31st October. Baltic (bounded by the parallel of latitude of the Skaw). Winter from 1st November to 31st March. Summer from 1st April to 31st October.

Mediterranean and Black Sea

Winter from 16th December to 15th March. Summer from 16th March to 15th December.

Northern " Seasonal Winter" Zone (between Asia and North America, except Sea of Japan, South of 50° N.)

Winter from 16th October to 15th April. Summer from 16th April to 15th October.

Sea of Japan between the parallels of lat. 35° N. and 50° N

Winter from 1st December to 28/29th February. Summer from 1st March to 30th November.

Southern " Seasonal Winter " Zone

Winter from 16th April to 15th October. Summer from 16th October to 15th April. ANNEX III

International Load Line Certificate

Issued under the authority of the Government of _____ under the provisions of the International Load Line Convention, 1930. Distinctive Number or Letters. _____ Ship _____ Port of Registry _____ Gross Tonnage _____

Freeboard from deck line, Load Line

Tropical _____ (a) _____ above (b). Summer _____ (b) Upper edge of line through centre of disc. Winter _____ (c) _____ below (b). Winter in North Atlantic _____ (d) _____ below (b). Allowance for fresh water for all freeboards _____ The upper edge of the deck line from which these freeboards are measured is _____ inches above the top of the _____ deck at side This is to Certify that this ship has been surveyed and the freeboards and load lines shown above have been assigned in accordance with the Convention. This certificate remains in force until _____ Issued at _____ on the _____ day of _____

Here follows the signature or seal and the description of the authority issuing the certificate.

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Note,—Where seagoing steamers navigate a river or inland water, deeper loading is permitted corresponding to the weight of fuel, &c, required for consumption between the point of departure and the open sea. The provisions of the Convention being fully complied with by this ship, this certificate is renewed till _____ Place _____ Date _____
 _____ Signature or Seal and description of authority,

The provisions of the Convention being fully complied with by this ship, this certificate is renewed till _____ Place _____ Date _____
 _____ Signature or Seal and description of authority. The provisions of the Convention being fully complied with by this ship, this certificate is renewed till _____ Place _____ Date _____
 _____ Signature or Seal and description of authority.

ANNEX IV Titles of Load Line Laws and Rules regarded as Equivalent to the British Board of Trade Rules, 1906. Australia. Part IV of the Navigation Act, 1912-1920, and Navigation (Load Line) Regulations of the 17th December, 1924. Belgium. Loi sur la sécurité des navires (7 décembre 1920). Chile. Reglamento para el trazado del disco marcas y linea oficial de carguío de las naves mercantes (Decree No. 1896 of the 12th November, 1919). Denmark. Merchant Shipping (Inspection of Ships) Act of the 29th March, 1920, with later amendments. Rules and Tables of Freeboard for Ships, dated the 30th September, 1909, as amended by Notification of the 25th July, 1918. France. Loi du 17 avril 1907. Arrêté du 5 septembre 1908. Décret du 21 septembre 1908. Autre décret du 21 septembre 1908 modifié par le décret du 1er septembre 1925. Décret du 12 mai 1927. Décret du 17 janvier 1928. Germany. Vorschriften der See-Berufsgenossenschaft über den Freibord für Dampfer und Segelschiffe, Ausgabe 1908. Hong Kong. Merchant Shipping Consolidation Ordinance (No. 10 of 1899), as amended by Ordinances Nos. 31 of 1901, 2 of 1903, 5 of 1905, 16 of 1906, 9 of 1909, and 6 of 1910. Iceland. Law No. 58 of the 14th June, 1929, Sections 25-26. India. Indian Merchant Shipping Act, 1923. Italy. Regole e tavole per assegnazione del " Bordo Libero " approved by decree dated the 1st February, 1929—VII of the Italian Minister for Communications. Prior to 1929—British Board of Trade Rules, 1906. Japan. Ship Load Line Law [Law No. 2 of the 10th year of Taisho (1921)] and the Rules and Regulations relating thereto. Netherlands. Decree of the 22nd September, 1909 (Official Journal No. 315). Netherlands Indies. Netherlands Decree of the 22nd September, 1909 (Official Journal No. 315). New Zealand. British Board of Trade Rules, 1906. Norway. Norwegian Freeboard Rules and Tables of 1909. Portugal. Decree No. 11,210 of the 18th July, 1925, and Regulations and Instructions relating thereto. Spain. Reglamento para el Trazado del Disco y Marcas de Maxima Carga de los buques mercantes, 1914. Straits Settlements. British Board of Trade Rules, 1906. Sweden. Rules and Tables of Freeboard approved by decree of the 21st May, 1910. United Kingdom. Board of Trade Rules, 1906. United States of America. British Board of Trade Rules, 1906. Union of Soviet Socialist Republics. Rules and Regulations relating to the Load Lines of seagoing merchant vessels, published by Register of the Union of Soviet Socialist Republics, 1928. FINAL ACT OF THE INTERNATIONAL LOAD LINE CONFERENCE, 1930 The Governments of Germany, the Commonwealth of Australia, Belgium, Canada, Chile, Cuba, Denmark, the Free City of Danzig, Spain, the Irish Free State, the United States of America, Finland, France, the United Kingdom of Great Britain and Northern Ireland, Greece, India, Iceland, Italy, Japan, Latvia, Mexico, Norway, New Zealand, Paraguay, the Netherlands, Peru, Poland, Portugal, Sweden and the Union of Soviet Socialist Republics;

Desiring to promote safety of life and property at sea by establishing in common agreement uniform principles and rules with regard to the limits to which ships on international voyages may be loaded | Having decided to participate in an international conference which, upon the invitation of the Government of the United Kingdom of Great Britain and Northern Ireland, was held in London;

Appointed the following delegations :—

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In the course of a series of meetings between the 20th May, 1930, and the 5th July, 1930, a Load Line Convention, dated the 5th July, 1930, was drawn up. I. The Conference takes note of the following declarations made by the undermentioned delegation :—

The Plenipotentiaries of the United States of America formally declare that the signing of the International Load Line Convention by them, on the part of the United States of America, on this date, is not to be construed to mean that the Government of the United States of America recognizes a regime or entity which signs or accedes to the Convention as the Government of a country when that regime or entity is not recognised by the Government of the United States of America as the Government of that country. The Plenipotentiaries of the United States of America further declare that the participation of the United States of America in the International Load Line Convention signed on this date does not involve any contractual obligation on the part of the United States of America to a country, represented by a regime or entity which the Government of the United States of America does not recognise as the Government of that country, until such country has a Government recognised by the Government of the United States of America. II. The Conference also adopts the following recommendations:—

Ships of less than 150 tons gross Engaged on International Voyages

The Conference recommends that such regulations as may be made by any of the Contracting Governments relating to ships of less than 150 tons gross engaged on international voyages should, so far as practicable and reasonable, be framed in accordance with the principles and rules laid down in this Convention, and should whenever possible be made after consultation and agreement with the Governments of the other countries concerned in such international voyages.

Strength

As under the Rules attached to this Convention, ships which comply with the highest standard laid down in the rules of a classification society recognised by the Administration are regarded as having sufficient strength for the minimum freeboards allowed under the rules, the Conference recommends that each Administration should request the Society or Societies which it has recognised to confer from time to time with the Societies recognised by other Administrations, with a view to securing as much uniformity as possible in the application of the standards of strength on which freeboard is based.

Annual Surveys

The Conference recommends that, if possible, each Administration should make arrangements for the periodical inspections referred to in paragraph (3) (c) of Article 14 to be held at intervals of approximately twelve months so far as concerns the maintenance of the fittings and appliances referred to in Condition B of paragraph 3 of that Article (i.e., the fittings and appliances for the (i) protection of openings, (ii) guard rails, (iii) freeing ports and (iv) means of access to crews' quarters).

Information regarding Damage to Tankers

The Conference recommends that the Governments of the countries to which tankers belong shall keep records of all structural and deck damage to these ships caused by stress of weather, so that information with regard to these matters may be available. In faith whereof the undersigned have affixed their signatures to the present Act. Done in London this fifth day of July, 1930, in a single copy which shall be deposited in the archives of the Government of the United Kingdom

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of Great Britain and Northern Ireland, which shall transmit certified true copies thereof to all signatory Governments.