Marine (1899) Department.

G.O., No. 38 / Marine

DATED 3rd March 1899.

R.

[Despatch Abstract.]

Instructions to Board of Trade Surveyors

~~Letter from~~ Encl. of the Govt of India forwarding a copy of the despatch from the Secretary of State forwarding copies of ——, recorded, with reference to Ltr No 197 Mar of 3rd March 1898.

[M. 6 500—7-1-99.]

Indexed. 6/5/99

[2,000—15-99-V.]

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
.	197	Mar.	3-3-99				

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Marine (1899) Department.

CURRENT No. 557

From The Govt of India

B/No. 351 dated 3 May 99

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Order

Recorded with reference to G.O. 197 Marine dated 3rd March 1899.

Dated	21—4—99
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J. B. R.

SUBJECT.

Instructions to Board of Trade Surveyors. Forwarding Copy of the despatch from the Secy of State forwarding Copies of

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BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

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BOARD OF TRADE,
Marine Department,
December 1898.

INSTRUCTIONS

TO

SURVEYORS.

Tables of Freeboard.

The Report of the Load Line Committee of 1885, together with the Tables of Freeboard, and explanation of the Committee appended thereto, are printed and circulated for the information of the Surveyors of this Department. The modifications recommended by the Load Line Committee, 1898, are also embodied in these Tables, together with a Memorandum of explanatory notes on the application of such Tables.

COURTENAY BOYLE,
Secretary.

INGRAM B. WALKER,
Assistant Secretary.

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Load Line Committee.

To His Grace the Duke of Richmond and Gordon, K.G., &c.,
President of the Board of Trade.

My Lord Duke,

In pursuance of the request of the late President of the Board of Trade (the Right Hon. Joseph Chamberlain, M.P.), we have given our most careful consideration to the following questions respecting the determination of the load lines of merchant ships, and have the honour to report thereon as follows:

The questions put to us were,—

"1. Whether it is now practicable to frame any general rules concerning freeboard which will prevent dangerous overloading without unduly interfering with trade.

"2. If so, whether any, and which of the existing tables, with any, and what alterations, or any other, and what tables should be adopted.

"3. How far any such tables can be adopted as fixed rules, and what amount of discretion must be left to the Officers who have to see that they are complied with."

Before replying to these questions we deemed it desirable (notwithstanding the close and technical acquaintance with merchant ships and with the conditions of safe loading which members of the Committee from their avocations necessarily possess) that we should together visit the principal mercantile ports, and there make joint observations of the load lines at present marked upon ships, and of the nature and extent of the actual loading practised. We also thought it well to avail ourselves of the opportunities thus afforded for conferring freely with shipowners, managers, masters, seamen, and others connected with the Mercantile Marine, and of receiving from them such evidence as they were willing to offer. We have likewise taken in London a considerable body of evidence. In order that your Grace may

readily observe how numerous and how experienced have been the witnesses who have thus voluntarily contributed to the fulness of our information we append to this Report a list of their names.

Mr. Thomas Gray, C.B., and Sir Digby Murray, Bart., and likewise Mr. Benjamin Martell, and Mr. T. B. Royde have furnished all such information upon the subject as the large resources of the Board of Trade and of Lloyd's Register Office and of the Liverpool Registry respectively have enabled them to supply.

As the result of our prolonged consultations and labours we have unanimously arrived at the following replies to the questions before recited, viz.:

1. We are of opinion that it is now practicable to frame general rules concerning freeboard which will prevent dangerous overloading without unduly interfering with trade.

2. We have the pleasure to submit herewith tables which we consider should be adopted.

3. We are of opinion that these tables can be adopted, at least for all existing types of cargo vessels, and for some years to come, without the exercise of any other discretion on the part of the officers who have to see that they are complied with, than that which concerns the quality and condition of the ship. The freeboards assigned by the tables herewith are suitable for vessels of the highest class in Lloyd's Register or of strength equivalent thereto, and should be increased for ships of inferior strength.

To the responsible authorities a large discretion must be allowed, viz.: that of applying the tables themselves with reasonable modifications to any very exceptional vessels which may now exist or may hereafter be constructed.

For careful as we have been to give full consideration to all actual types and sizes of vessels, we cannot but admit that undue interference with trade might occasionally arise were the tables to be applied henceforth to all ships, present and future, without any exception whatever. We are well aware that the discretion which we thus regard as necessary is such as should be exercised with very great skill, care, and judgment, but we see no reason why those charged with the responsible duty of

preventing the overloading of merchant ships should not have at their command all needful assistance.

The tables submitted herewith are of the same general form as those hitherto adopted by Lloyd's Register Office, and like them involve the reservation above water of a regulated minimum percentage of the total buoyancy. At the same time these tables secure that a sufficient height of deck above water to which the Board of Trade advisers have justly attached much importance. The views of the Board of Trade advisers concerning the value of forecastles, poops, and like deck erections, and the necessity for a liberal amount of freeboard in flush-deck vessels which are deprived of such erections, have likewise received our careful attention, and have had their due influence upon the tables submitted herewith. The same may be said with reference to the freeboards assigned to vessels of extreme proportions and to vessels of very fine forms. The Board of Trade distinction between winter and summer freeboards has likewise, after the fullest consideration, been adopted.

The tables as now submitted involve only such limited modifications of the freeboards assigned by the latest tables of Lloyd's Register Office as Mr. Benjamin Martell is able to freely accept and cordially concur with. The same may be said of the extension of the tabular forms by the addition thereto of corrections for changes of length and for voyages in summer and in the North Atlantic in winter.

In the tables submitted the definitions of length, breadth, depth, sheer, round of beam, and freeboard have undergone revision.

The changes introduced have been made for the purpose of simplifying the assignment and marking of freeboards, and although they modify in one or two points the directions of the fourth section of the Merchant Shipping Act of 1873, and may therefore render legislation necessary, the measure required would be of so brief, simple, and non-contentious a character as to render its passage easy.

It will be observed by the tables that they refer exclusively to cargo-carrying vessels. We have not considered it necessary to carry our investigations into the differences which may be made

in the loading of passenger vessels. But it must be understood that under any circumstances those tables contain the maximum loading that should be permitted to any class of vessel.

In view of the unanimity with which we have arrived at our results it is deemed unnecessary to trouble your Grace with the evidence which has been taken, or with the information prepared and contributed by the various members of the Committee for its guidance from time to time.

In closing our labours which were commenced in January 1884, and have since proceeded continuously, we cannot but express our great satisfaction at the attainment of the unanimity just referred to. The subject placed before us by your Grace's predecessor was one of extreme complexity, and also one which had come to be regarded with much diversity of view (as was natural where the profit and loss of the largest commercial operations ever carried on upon the sea are involved), and therefore it would not have been surprising if we had failed to arrive at conclusions which we could all accept. But by thoroughly considering every important point as it has arisen, and by making reasonable concessions to each other on matters of opinion, we have succeeded in arriving unanimously at our results. As the Board of Trade, Lloyd's Register Office, and the Liverpool Registry are all represented upon this Committee the importance of this concurrence will be manifest. We have the honour to be, my Lord Duke, your Grace's obedient Servants, (Signed) E. J. Reed, Chairman, W. Denny, Robt. Duncan, James Dunn, Frans. Elgar, Thomas Gray, William Gray, James Laing, B. Martell, Digby Murray, T. B. Royden, Tho. Sutherland.

(Signed) Reginald Bingham,
Secretary.

Explanation of the following Tables of Freeboard for the various Types of Steam and Sailing Vessels.

In the following Tables the word Freeboard denotes the height of the side of a ship above the waterline at the middle of her length, measured from the top of the deck at the side, or, in cases where a waterway is fitted, from the curved line of the top of the deck continued through to the side. The freeboards and the corresponding percentages of reserve buoyancy necessary for flush-deck steamers not having spar or awning decks, for awning-deck steamers, and for flush-deck sailing vessels, are given in Tables A, C, and D for vessels of these classes and of various dimensions and proportions. The freeboards necessary for spar-deck steamers are given in Tables B. The latter are determined by considerations of structural strength, and they denote the limitations to depth of loading which are thereby imposed upon first class vessels of this type. The freeboards and percentages of reserve buoyancy thus obtained being in excess of what would otherwise be required, the amounts of such percentages are not given in Tables B.

The exact freeboard required for a given ship belonging to any of the classes comprised in Tables A, C, and D, may be calculated by constructing a displacement scale to the height of the deck to which the freeboard is measured, so as to give the whole external volume up to the upper surface of that deck. The percentage of the total volume which is given in the Tables as the reserve buoyancy for a vessel of given type and dimensions will be the amount of volume that must be left out of the water. If a waterline be drawn upon the displacement scale aforesaid to cut off the given percentage of total volume, the height of side above this line will be the freeboard required.

In order to simplify and reduce the work that would be involved by the above mode of determining the waterline and the consequent freeboard, that correspond to a given percentage of reserve buoyancy, an approximate method is adopted in the following tables, which enables the freeboard of a vessel to be

calculated with a sufficient degree of accuracy for all ordinary working purposes. The use of this method not only saves the time and labour that would be involved by making a complete displacement scale for the whole external volume of a ship, but, what is much more important, it makes the Tables easily and directly applicable in cases where such a displacement scale for a vessel is not at hand, or where the data requisite for constructing one are not procurable.

In this approximate method the form of the ship is taken into account by means of proportionate quantities, which are termed coefficients of fineness, instead of by the exact volumes that a displacement scale would give. It is found that the whole internal volume of a ship as measured for register tonnage divided by the product of the length, breadth, and depth, measured as described in the following clauses 1, 2, and 3, gives a fractional quantity or coefficient which bears a nearly constant relation to the quantity that would be obtained by dividing the whole external volume below the upper surface of the deck by the product of the length, breadth, and depth. This fractional quantity is called the "coefficient of fineness" for freeboard purposes; and it serves the same practical object, when combined with the dimensions of the ship in the manner explained in the Tables, as the volume itself would do.

In applying such an approximate method as the above, it is necessary to connect the coefficients of fineness given in the Tables with a standard sheer and round of beam. The standard scales for sheer and round of beam that have been adapted for this purpose are given in clauses 16 and 17 hereafter. Descriptions are also there given of the corrections that should be made for deviations from these standard amounts.

The freeboards given in the Tables are for flush-deck vessels in all cases. Such reductions in freeboard as may be allowed for deck-erections of various kinds and sizes in steamers not having spar or awning decks, and in sailing vessels, are described in paragraphs 11, 12, 13, 14, and 15.

No reduction of freeboard should be allowed on account of deck-erections in spar-deck and awning-deck steamers.

Tables A and D give the minimum freeboards for first class iron and steel vessels, the strength of which is at least equal to

the requirements of the 100A class in Lloyd's Register for three-deck and smaller vessels. The freeboard of all other iron and steel vessels, classed or unclassed, should be regulated by the same standard; the increase of freeboard required in each case being determined by the limit at which the stress per square inch upon the material of the hull amidships shall not exceed that of the standard class, of the same proportions, form, and moulded depth, when loaded to the freeboards required by Tables A and D. Tables B and C give the freeboards for vessels built in accordance with, or equal to the requirements of Lloyd's Register for the spar and awning deck classes; and are subject to the conditions just stated for any modifications of strength in excess or diminution of the requirements of their respective classes.

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1. *Length.*—The length of the vessel is measured on the load-line from the foreside of the stem to the aft side of the stern post in sailing vessels, and to the aft side of the after post in steamers.

2. *Breadth.*—The breadth used in obtaining the coefficient of fineness is the extreme breadth measured to the outside of plank or plating as given in the Register Book, or on the Certificate of the Ship's Registry.

3. *Depth of Hold.*—The depth used in obtaining the coefficient of fineness is the depth of hold as given in the Register Book, or on the Certificate of the Ship's Registry. This dimension is subject to modification in determining the coefficient of fineness as explained in clause 4.

4. *Coefficient of Fineness.*—The coefficient of fineness in one, two, and three-deck and spar-deck vessels, is found by dividing 100 times the gross registered tonnage of the vessel below the upper deck by the product of the length, breadth, and depth of hold. In awning-deck vessels the registered depth and tonnage are taken below the main deck.

(*a.*) It is of importance in the application of the rules and tables of freeboard that the coefficient of fineness deduced from the under-deck tonnage, and the principal dimensions should be a correct index to the vessel's relative fulness of form, and that a change in any of those elements which

affect the coefficient, determined in accordance with the rule set forth should be considered, and the necessary correction, having regard to the special circumstances of the case, introduced. Among the cases that have from time to time come under notice are the following:—

(*b.*) *Vessel having a cellular bottom throughout, or floors of greater depth than those usually fitted.*—In such a case the coefficient as determined from the under-deck tonnage is in most instances slightly greater than it would be if the vessel were framed on the ordinary transverse system with floors of the usual depth. No general rule can be given for guidance, but it is not difficult, if the depth and slope of the top of the cellular bottom or floor be compared on the midship section with the depth and slope of an ordinary floor, to determine very closely the amount of the correction necessary.

(*c.*) *Vessel constructed with floors of the ordinary kind, but with a cellular bottom for a part of the length amidships under the engines and boilers.*—In such case the registered under-deck tonnage is smaller than it would be if the vessel were framed with ordinary floors throughout, the difference being the tonnage of the space between the top of the cellular bottom in the part amidships, and the level of the ordinary floor. The depth of hold is also measured by the customs officials to the top of the cellular bottom, and this depth is inserted in the register. Under such circumstances, in order to arrive at the coefficient of fineness the vessel would have if built on the ordinary system throughout and for which the tables are framed, the tonnage of the volume between the top of the cellular bottom and the level of the ordinary floor should be calculated and added to the registered under-deck tonnage. The tonnage so corrected used in conjunction with the depth of hold to the top of the ordinary floor, gives the coefficient to be used in the Tables.

(*d.*) *Vessel constructed with a cellular bottom throughout the fore and after holds, but with floors of the ordinary kind fitted for a part of the length amidships under the engines and boilers.*—In such a case the tonnage of the space between

the top of the ordinary floors in the part amidships, and the top of the cellular bottom, if made continuous, should be estimated, and deducted from the registered under-deck tonnage, and the remainder employed in conjunction with the depth of hold to the top of the cellular bottom in determining the coefficient of fineness.

(*e.*) Other cases may in practice arise in which the registered under-deck tonnage, or the registered depth of hold, or both, require modification before being used in the determination of the coefficient of fineness, but little difficulty will be experienced in making the necessary correction, if it be remembered that the coefficient sought is the coefficient the vessel would have if framed on the ordinary transverse system.

5. *Moulded Depth.*—The moulded depth of an iron or steel vessel, as given in the Tables, is the perpendicular depth taken from the top of the upper deck beam at side, at the middle of the length of the vessel, to the top of the keel and the bottom of the frame at the middle line, except in spar and awning deck vessels, in which the depth is measured from the top of the *main* deck beams. In wooden and composite vessels the moulded depth is taken to be the perpendicular depth from the top of the upper deck beam at the side of the vessel amidships to the lower edge of the rabbet at the keel.

(*a.*) The form at the lower part of the midship transverse section of many wooden and composite vessels being of a hollow character, as in cases where thick garboard strakes are fitted, the moulded depth in such instances should be measured from the point where the line of the flat of the bottom continued cuts the keel.

6. *Freeboard.*—The moulded depth, taken as above described, is that used in the tables for ascertaining the amount of reserve buoyancy and corresponding freeboard in vessels having a wood deck, and the freeboard is measured from the top of the wood deck at side, at the middle of the length of the vessel.

(*a.*) On the same principle, in *flush-deck* vessels, other than spar or awning decked, and in vessels fitted with short poop and forecastle, having an iron upper deck, not covered with wood, the usual thickness of a wood deck should be

deducted from the moulded depth of the vessel measured as above, and the amount of reserve buoyancy and corresponding freeboard taken from the column in the tables corresponding with this diminished moulded depth: *Example*—In a steamer fitted with an iron upper deck, not covered with wood, and having a moulded depth of 19 ft. 10 ins., four inches, or the usual thickness of a wood deck, must be deducted from this, leaving a depth of 19 ft. 6 ins. The freeboard of such a vessel with a coefficient of fineness of 0·76, taken from the column under 19 ft. 6 ins., is 3 ft. 8½ ins., which should be measured from the top of the iron upper deck.

(*b.*) In spar-deck vessels having iron spar decks, and in awning-deck vessels having iron main decks, the freeboard required by the Tables should be measured as if those decks were wood covered. Also in vessels where $\frac{7}{10}$ths, or more, of the main deck is covered by substantial erections, the freeboard found from the Tables should be measured amidships from a wood deck, whether the deck be of wood or iron. In applying this principle to vessels having shorter lengths of substantial enclosed erections the reduction in freeboard in consideration of its being measured from the iron deck, is to be regulated in proportion to the length of the deck covered by such erections. Thus in a vessel having erections covering $\frac{6}{10}$ths of the length, the reduction is $\frac{6}{10}$ths of 3½ inches, or 2 inches.

7. For vessels which trim very much by the stern, through the engines being fitted aft, the freeboard, as ascertained from the Tables if set off amidships would not cut off the amount of surplus buoyancy deemed necessary, and in such cases the suitable freeboard amidships could only be determined after full information is obtained regarding the vessel's trim.

8. The following example will illustrate the *general* application of the Tables:—

In a steamer of the following dimensions, viz., length 204 ft.; breadth extreme, 29 ft.; depth of hold 16·0 ft.; registered tonnage under deck, 682 tons; and *moulded* depth, 17·0 ft., the under deck capacity in cubic feet is 68,200; by dividing this by

94,656, that is, the product of the length, breadth, and depth of hold, the quotient is 0·72, or the coefficient of fineness.

If we now refer to Table A at 17·0 ft. moulded depth, and trace the line opposite the coefficient 0·72 to the column corresponding with this depth, it is found that the winter freeboard given for a *first-class steam vessel without erections*, whose length is twelve times the moulded depth, is 2 ft. 11 ins., corresponding with a reserve buoyancy of 25 per cent. of the total bulk.

9. *Vessels of Extreme Proportions.*—For vessels whose length is greater or less than that of the vessel of the same moulded depth for which the Tables are framed, the freeboard should be increased or diminished as specified in the footnote to the Tables. Thus, if the vessel in the example clause 8 were 224 ft. long, the winter freeboard required would be 2 ft. 11 ins. plus 2 ins. or 3 ft. 1 in. For steam vessels with top-gallant forecastles, having long poops or raised quarter decks connected with bridge-houses, the whole extending over $\frac{6}{10}$ths, or more, of the length of the vessel, the correction for length should be one-half that specified in Tables A.

10. *Breadth and Depth.*—In framing the Tables it has been assumed that the relation between the breadth and depth is such as to ensure safety at sea with the freeboard assigned when the vessel is laden with homogeneous cargo; for vessels of less relative breadth, the freeboard should be so increased as to provide a sufficient range of stability, or other means adopted to secure the same.

11. *Erections on Deck.*—For steam vessels with topgallant forecastles having long poops, or raised quarter decks connected with bridge-houses, covering in the engine and boiler openings, the latter being entered from the top, and having an efficiently constructed iron bulkhead at the fore end, a deduction may be made from the reserve buoyancy given in the Tables, according to the following scale:—

(*a.*) When the combined length of the poop, or raised quarter-deck, bridge-house, and top-gallant forecastle is—

$\frac{6}{10}$ths of the length of the vessel, deduct 85 per cent. of the reduction in the reserve buoyancy allowed for a complete awning deck, or $\frac{85}{100}$ths of the difference between freeboards in Tables A (after correction for sheer), and Tables C.

$\frac{8}{10}$ths of the length of the vessel, deduct 75 per cent. of the reduction in the reserve buoyancy allowed for a complete awning deck, or $\frac{75}{100}$ths of the difference between freeboards in Tables A (after correction for sheer), and Tables C.

$\frac{7}{10}$ths of the length of the vessel, deduct 63 per cent. of the reduction in the reserve buoyancy allowed for a complete awning deck, or $\frac{63}{100}$ths of the difference between freeboards in Tables A (after correction for sheer), and Tables C.

$\frac{6}{10}$ths of the length of the vessel, deduct 50 per cent. of the reduction in the reserve buoyancy allowed for a complete awning deck, or $\frac{50}{100}$ths of the difference between freeboards in Tables A (after correction for sheer), and Tables C.

When the engine and boiler openings are protected only by a long raised quarter-deck, a less reduction in freeboard will be allowed.

(*b.*) For intermediate lengths of erections the amount of the reduction in freeboard should be ascertained by interpolation.

(*c.*) The above scale of allowance is prepared for vessels having long poops or raised quarter-decks 4 ft. high or above. For raised quarter decks of less height, extending over four-tenths of the length, and forming an integral portion of the vessel, the amount of the allowance should be diminished, as shown in the following table:—

Height of raised Quarter Deck.	Moulded Depth of Vessel in Feet.						
	ft. in. 10 0	ft. in. 12 0	ft. in. 14 0	ft. in. 16 0	ft. in. 18 0	ft. in. 20 0	ft. in. 22 0
ft. in. 3 6	ins. —	ins. —	ins. $\frac{1}{2}$	ins. $\frac{1}{2}$	ins. $\frac{1}{2}$	ins. $\frac{3}{4}$	ins. $\frac{3}{4}$
3 0	$\frac{1}{2}$	$\frac{3}{4}$	1	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$
2 6	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{2}$	3
2 0	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$	—	—	—
1 6	2	$2\frac{1}{2}$	3	—	—	—	—

(*d.*) For shorter lengths of raised quarter-deck a proportionate increase should be made.

(*e.*) It is to be understood in the application of this scale of allowance for erections on deck to vessels with long poops or with raised quarter-decks, and bridge-houses combined, that the deduction is a maximum deduction, applicable only to vessels of these types in which the erections are of a most substantial character, the deck openings most effectually protected, and the crew are either berthed in the bridge-house, or the arrangements to enable them to get backwards and forwards from their quarters are of a satisfactory character. For other vessels of the same class the amount of the deduction should be fixed only after a careful survey. Also such vessels when employed in the Atlantic trade will require to have specially provided greater freeboard than that given in the Tables.

(*f.*) A sufficient number of clearing ports, as large as practicable, and with shutters properly hung, should be formed in the bulwarks of these vessels, between the forecastle and the bridge-house for the purpose of speedily clearing this part of the deck of water.

12. When the erections on a vessel consist of a top-gallant forecastle, a short poop having an efficient bulkhead, and bridge-house disconnected, the latter in steamers covering the engine and boiler openings, and being efficiently enclosed with an iron bulkhead at each end, a deduction may be made from the reserve buoyancy given in the Tables according to the following scale:—

(*a.*) When the combined length of the erections is—

$\frac{5}{10}$ths of the length of the vessel, deduct 40 per cent. of the reduction in reserve buoyancy allowed for a complete awning deck or $\frac{2}{5}$ths of the difference between the freeboards in Tables A (after correction for sheer and length) and Tables C (after correction for length).

$\frac{4}{10}$ths of the length of the vessel, deduct 33 per cent. of the reduction in reserve buoyancy allowed for a complete awning deck or $\frac{1}{3}$rd of the

difference between the freeboards in Tables A (after correction for sheer and length) and Tables C (after correction for length).

13. When the erections on a vessel consist of a top-gallant forecastle and bridge-house only, the latter in steamers covering the engine and boiler openings, and being efficiently enclosed with an iron bulkhead at each end, a deduction may be made from the reserve buoyancy given in the Tables according to the following scale:—

(*a.*) When the combined length of the erections is—

$\frac{4}{10}$ths of the length of the vessel, deduct 30 per cent. of the reduction in reserve buoyancy allowed for a complete awning deck or $\frac{3}{10}$ths of the difference between the freeboards in Tables A (after correction for sheer and length) and Tables C (after correction for length).

$\frac{3}{10}$ths of the length of the vessel, deduct 25 per cent. of the reduction in reserve buoyancy allowed for a complete awning deck or $\frac{1}{4}$th of the difference between the freeboards in Tables A (after correction for sheer and length) and Tables C (after correction for length).

14. When the erections on a vessel consist of a short poop and top-gallant forecastle only, the former enclosed at the fore-end with an efficient bulkhead, the deduction from the reserve buoyancy given in the tables should be according to the following scale:—

(*a.*) When the combined length of the erections is—

$\frac{3}{8}$ths of the length of the vessel, deduct 8 per cent. of the reserve buoyancy or 10 per cent. of the freeboard required for the vessel flush decked after correction for length;

$\frac{2}{8}$ths of the length of the vessel, deduct 6 per cent. of the reserve buoyancy or 8 per cent. of the freeboard required for the vessel flush decked after correction for length;

and so on in proportion.

It is to be understood that the deductions under this paragraph, are never to exceed those granted under paragraph 12 for

the same proportion of length covered by poop, bridge-house, and topgallant forecastle.

15. When a vessel is fitted with a topgallant forecastle only, the reduction in reserve buoyancy should be one-half that prescribed by the previous paragraph for the case where, in addition to the forecastle, the vessel is fitted with a poop of the same length.

16. *Sheer.*—The Tables are framed for vessels having a mean sheer of deck *measured at the side,* as shown in the following Table.

—	Length over which Sheer is measured.						
	100	150	200	250	300	350	400
	Mean Sheer in Inches over the Length specified.						
Flush-deck vessels.—Sheer to be measured abreast stem and sternpost.	20	25	30	35	40	45	50
Vessels having short poops and forecastles.—Sheer to be measured at points distant $\frac{1}{6}$th the length of the vessel from each end.	14	18	22	26	30	34	38
Vessels having short forecastles only.—Sheer to be measured abreast the sternpost and at a point distant $\frac{1}{6}$th the length from the stem.	14½	18½	23	27	31	35½	40

(*a.*) In flush-deck vessels and in vessels to which clauses 11 and 12 apply, when the sheer of deck is greater or less than the above, *and is of a gradual character,* divide the difference in inches between it and the mean sheer provided for by 4, and the result in inches is the amount by which the freeboard amidships should be diminished or increased according as the sheer is greater or less.

(*b.*) In vessels having short poops and forecastles, and in those having short forecastles only, the freeboard should be corrected in respect of the excess of or deficiency in reserve buoyancy due to variations in sheer from the standard amount over the length uncovered by substantial erections,

as provided in the above Table. One-fourth the difference between the mean sheer specified and that measured as described, is approximately the amount by which the freeboard should be modified in respect of sheer.

(*c.*) The divisor 4 is to be used when the sheer is *of a gradual character*, and is not strictly applicable either to those cases in which the sheer is suddenly increased at the bow or stern, or to those in which it does not maintain its normal rate of increase to the ends of the vessel.

(*d.*) In all cases the rise in sheer forward and aft is measured with reference to the deck at the middle of the length, and where the lowest point of the sheer is abaft the middle of the length, one-half of the difference between the sheer amidships and the lowest point, should be added to the freeboard specified in the Tables for flush-deck vessels, and for vessels having short poops and forecastles only.

(*e.*) Where, as in some instances, vessels fitted with long poops or raised quarter decks connected with bridge houses have the deck line rising rapidly from amidships to the front of the bridge, and from that point onwards gradually approaching the normal sheer line, the freeboard may be slightly modified in consideration of the increase of height of deck in the "well."

(*f.*) In flush-deck vessels and in vessels having short poops and forecastles the excess of sheer for which an allowance is made shall not exceed one-half the total standard mean sheer for the size of ship.

(*g.*) No decrease should be made in the freeboard of spar and awning deck vessels, in respect of excess of sheer.

17. *Round of Beam.*—In calculating the reserve of buoyancy, an allowance has been made of one-quarter of an inch for every foot of the length of the midship beam for the round up. When the round of the beam in flush-decked vessels is greater or less than given by this rule, divide the difference in inches by 2, and diminish or increase the freeboard by this amount. For vessels with erections on deck the amount of the allowance should depend on the extent of the main deck uncovered. This rule for round of beam does not apply to spar or awning deck vessels.

18. As a general illustration of the way in which the Tables should be used in modifying the freeboard on account of erections on deck, extreme proportions and variations in sheer, the following may be taken as an example.

A vessel is 234 ft. long, 29 ft. broad, and has a moulded depth of 17·0 ft., the coefficient of fineness being ·72. Suppose the vessel to have a poop and bridge house of the united length of 121 ft., and a forecastle 20 ft. in length, and let the sheer forward, measured at the side, be 4 ft. 6 ins., and aft 2 ft. 1 in.

	Ft.	In
Freeboard by Tables A if of the normal length, without erections, and with the normal amount of sheer	2	11
The mean sheer by rule is 33·4 ins., or 6 ins. less than that in the vessel, and the reduction in freeboard is 6 ins. divided by 4	0	$1\frac{1}{2}$
Freeboard of vessel without erections and with $39\frac{1}{2}$ ins. mean sheer	2	$9\frac{1}{2}$
Freeboard by Tables C as awning-decked	1	$4\frac{1}{2}$
Difference	1	5

The combined length of the erections is $\frac{141}{234}$ths or $\frac{6}{10}$ths of the length of the vessel, and the allowance for erections under clause 11 will be therefore $\frac{6}{10}$ths of 17 ins., or $8\frac{1}{2}$ ins.

We have therefore—	Deduct in.
Amount deducted from freeboard for excess of sheer	$1\frac{1}{2}$
Amount deducted from the freeboard for erections	$8\frac{1}{2}$
Amount deducted if vessel be fitted with an uncovered iron main deck (clause 6) $= \frac{6}{10} \times 3\frac{1}{2}$	2
	12
The length being 30 ft. in excess of that for which the Tables are framed, the addition to the freeboard in respect of the same is one half of $\frac{30}{10}$ths of 1 in., or	$1\frac{1}{2}$
	$10\frac{1}{2}$

That is $10\frac{1}{2}$ ins. to be deducted from 2 ft. 11 ins., leaving a winter freeboard of 2 ft. $0\frac{1}{2}$ in.

Corresponding summer freeboard, 1 ft. $10\frac{1}{2}$ ins.

19. Vessels loaded in fresh water may have less freeboard than that given in the several Tables according to the following scale:—

Moulded Depth in Feet.	Reduction in Freeboard.		
	Vessels without erections on Deck.	Awning Deck Vessels.	Spar Deck Vessels.
	ins.	ins.	ins.
9 and under 11 ...	2	—	—
11 „ 13 ...	$2\frac{1}{2}$	—	—
13 „ 16 ...	3	$3\frac{1}{2}$	4
16 „ 19 ...	$3\frac{1}{2}$	4	$4\frac{1}{2}$
19 „ 22 ...	4	$4\frac{1}{2}$	5
22 „ 25 ...	$4\frac{1}{2}$	5	$5\frac{1}{2}$
25 „ 28 ...	5	$5\frac{1}{2}$	6
28 „ 31 ...	$5\frac{1}{2}$	6	$6\frac{1}{2}$
31 „ 34 ...	6	$6\frac{1}{2}$	7

MEMO.—The weight of a cubic foot of salt water is taken, in the above Table, to be 64 lbs., and that of fresh water 62·5 lbs.

20. The freeboards assigned by the following tables are not intended to apply to vessels when navigating inland waters or rivers, and when a stretch of such water has to be traversed such deeper loading will be permissible as may be due to the weight of fuel required for consumption between the points of departure and the open sea.

TABLES A.

TABLES OF FREEBOARD FOR FIRST-CLASS CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

(For allowances admitted in vessels having erections on deck, *see* "Explanation.")

TABLE A.

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS. (In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*)							
	20·1	20·6	20·8	21·0	21·2	21·4	21·6	21·8
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.							
	Moulded Depth and Length.							
	ft. in. 6 0	ft. in. 6 6	ft. in. 7 0	ft. in. 7 6	ft. in. 8 0	ft. in. 8 6	ft. in. 9 0	ft. in. 9 6
	ft. 72 0	ft. 78 0	ft. 84 0	ft. 90 0	ft. 96 0	ft. 102 0	ft. 108 0	ft. 114 0
·68 - -	0 8	0 9	0 10	0 11	1 0	1 1	1 2	1 3
·70 - -	0 8	0 9	0 10	0 11	1 0	1 1	1 2	1 3
·72 - -	0 $8\frac{1}{2}$	0 $9\frac{1}{2}$	0 $10\frac{1}{2}$	0 $11\frac{1}{2}$	1 $0\frac{1}{2}$	1 $1\frac{1}{2}$	1 $2\frac{1}{2}$	1 $3\frac{1}{2}$
·74 - -	0 $8\frac{1}{2}$	0 $9\frac{1}{2}$	0 $10\frac{1}{2}$	0 $11\frac{1}{2}$	1 $0\frac{1}{2}$	1 $1\frac{1}{2}$	1 $2\frac{1}{2}$	1 $3\frac{1}{2}$
·76 - -	0 9	0 10	0 11	1 0	1 1	1 2	1 3	1 4
·78 - -	0 9	0 10	0 11	1 0	1 1	1 2	1 3	1 4
·80 - -	0 $9\frac{1}{2}$	0 $10\frac{1}{2}$	0 $11\frac{1}{2}$	1 $0\frac{1}{2}$	1 $1\frac{1}{2}$	1 $2\frac{1}{2}$	1 $3\frac{1}{2}$	1 $4\frac{1}{2}$
·82 - -	0 $9\frac{1}{2}$	0 $10\frac{1}{2}$	0 $11\frac{1}{2}$	1 $0\frac{1}{2}$	1 $1\frac{1}{2}$	1 $2\frac{1}{2}$	1 $3\frac{1}{2}$	1 $4\frac{1}{2}$
Correction in inches for a change of 10 ft. in the length.	0·7	0·7	0·8	0·8	0·8	0·8	0·8	0·8
Deduction in inches for summer voyages.	1	1	1	1	1	1	1	1

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*)				
	25·0	25·2	25·5	25·7	26·0
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.				
	Moulded Depth and Length.				
	ft. in. 17 0	ft. in. 17 6	ft. in. 18 0	ft. in. 18 6	ft in. 19 0
	ft. 204	ft. 210	ft. 216	ft. 222	ft. 228
·68	ft. in. 2 10	ft. in. 2 11½	ft. in. 3 1	ft. in. 3 2½	ft. in. 3 4
·70	2 10½	3 0	3 1½	3 3	3 4½
·72	2 11	3 0½	3 2	3 3½	3 5½
·74	2 11½	3 1	3 2½	3 4½	3 6
·76	3 0	3 1½	3 3	3 5	3 6½
·78	3 0½	3 2	3 4	3 5½	3 7½
·80	3 1	3 2½	3 4½	3 6	3 8
·82	3 1½	3 3	3 5	3 6½	3 8½
Correction in inches for a change of 10 ft. in the length.	1·1	1·1	1·1	1·1	1·1
Deduction in inches for Summer Voyages.	2	2	2	2	2

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*)					
	26·2	26·5	26·7	27·0	27·3	27·5
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.					
	Moulded Depth and Length.					
	ft. in. 19 6	ft. in. 20 0	ft. in. 20 6	ft. in. 21 0	ft. in. 21 6	ft. in. 22 0
	ft. 234	ft. 240	ft. 246	ft. 252	ft. 258	ft. 264
·68	ft. in. 3 5½	ft. in. 3 7½	ft. in. 3 9	ft. in. 3 11	ft. in. 4 0½	ft. in. 4 2½
·70	3 6½	3 8	3 10	3 11½	4 1½	4 3½
·72	3 7	3 8½	3 10½	4 0	4 2	4 4
·74	3 8	3 9½	3 11½	4 1	4 3	4 5
·76	3 8½	3 10	4 0	4 1½	4 3½	4 5½
·78	3 9½	3 11	4 1	4 2½	4 4½	4 6½
·80	3 10	3 11½	4 1½	4 3	4 5	4 7
·82	3 10½	4 0	4 2	4 3½	4 5½	4 7½
Correction in inches for a change of 10 ft. in the length.	1·1	1·2	1·2	1·2	1·2	1·2
Deduction in inches for Summer Voyages.	2½	2½	2½	2½	2½	2½

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*) 25·0	25·2	25·5	25·7	26·0
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side. Moulded Depth and Length.				
	ft. in. 17 0	ft. in. 17 6	ft. in. 18 0	ft. in. 18 6	ft in. 19 0
	ft. 204	ft. 210	ft. 216	ft. 222	ft. 228
·68	ft. in. 2 10	ft. in. 2 11½	ft. in. 3 1	ft. in. 3 2½	ft. in. 3 4
·70	2 10½	3 0	3 1½	3 3	3 4½
·72	2 11	3 0½	3 2	3 3½	3 5½
·74	2 11½	3 1	3 2½	3 4½	3 6
·76	3 0	3 1½	3 3	3 5	3 6½
·78	3 0½	3 2	3 4	3 5½	3 7½
·80	3 1	3 2½	3 4½	3 6	3 8
·82	3 1½	3 3	3 5	3 6½	3 8½
Correction in inches for a change of 10 ft. in the length.	1·1	1·1	1·1	1·1	1·1
Deduction in inches for Summer Voyages.	2	2	2	2	2

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*) 26·2	26·5	26·7	27·0	27·3	27·5
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side. Moulded Depth and Length.					
	ft. in. 19 6	ft. in. 20 0	ft. in. 20 6	ft. in. 21 0	ft. in. 21 6	ft. in. 22 0
	ft. 234	ft. 240	ft. 246	ft. 252	ft. 258	ft. 264
·68	ft. in. 3 5½	ft. in. 3 7½	ft. in. 3 9	ft. in. 3 11	ft. in. 4 0½	ft. in. 4 2½
·70	3 6½	3 8	3 10	3 11½	4 1½	4 3½
·72	3 7	3 8½	3 10½	4 0	4 2	4 4
·74	3 8	3 9½	3 11½	4 1	4 3	4 5
·76	3 8½	3 10	4 0	4 1½	4 3½	4 5½
·78	3 9½	3 11	4 1	4 2½	4 4½	4 6½
·80	3 10	3 11½	4 1½	4 3	4 5	4 7
·82	3 10½	4 0	4 2	4 3½	4 5½	4 7½
Correction in inches for a change of 10 ft. in the length.	1·1	1·2	1·2	1·2	1·2	1·2
Deduction in inches for Summer Voyages.	2½	2½	2½	2½	2½	2½

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY—(*Winter.*)					
	31·5	31·8	32·2	32·5	32·8	33·2
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.					
	Moulded Depth and Length					
	ft. in. 28 6	ft. in. 29 0	ft. in. 29 6	ft. in. 30 0	ft. in. 30 6	ft. in. 31 0
	ft. 342	ft. 348	ft. 354	ft. 360	ft. 366	ft. 372
·68	ft. in. 6 8	ft. in. 6 10½	ft. in. 7 1	ft. in. 7 3½	ft. in. 7 6½	ft. in. 7 9
·70	6 9	7 0	7 2½	7 5	7 8	7 10½
·72	6 10	7 1	7 3½	7 6	7 9	7 11½
·74	6 11	7 2	7 4½	7 7	7 10	8 0½
·76	7 0	7 3	7 5½	7 8	7 11	8 1½
·78	7 1	7 4	7 7	7 9½	8 0½	8 3
·80	7 2	7 5	7 8	7 10½	8 1½	8 4
·82	7 3	7 6	7 9	7 11½	8 2½	8 5
Correction in inches for a change of 10 ft. in the length.	1·5	1·5	1·5	1·5	1·5	1·6
Deduction in inches for Summer Voyages.	4	4½	4½	4½	5	5

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*)					
	33·5	33·8	34·0	34·3	34·5	34·7
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.					
	Moulded Depth and Length.					
	ft. in. 31 6	ft. in. 32 0	ft. in. 32 6	ft. in. 33 0	ft. in. 33 6	ft. in. 34 0
	ft. 378	ft. 384	ft. 390	ft. 396	ft. 402	ft. 408
·68	ft. in. 8 0	ft. in. 8 2½	ft. in. 8 4½	ft. in. 8 7	ft. in. 8 9½	ft. in. 9 0
·70	8 1½	8 4	8 6	8 8½	8 11	9 1½
·72	8 2½	8 5	8 7	8 9½	9 0	9 2½
·74	8 3½	8 6	8 8½	8 11	9 1½	9 4
·76	8 4½	8 7	8 9½	9 0	9 2½	9 5
·78	8 6	8 8½	8 11	9 1½	9 4	9 6½
·80	8 7	8 9½	9 0	9 2½	9 5	9 7½
·82	8 8	8 10½	9 1	9 3½	9 6	9 8½
Correction in inches for a change of 10 ft. in the length.	1·6	1·6	1·6	1·6	1·7	1·7
Deduction in inches for Summer Voyages.	5	5	5½	5½	5½	6

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*)					
	31·5	31·8	32·2	32·5	32·8	33·2
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.					
	Moulded Depth and Length					
	ft. in. 28 6	ft. in. 29 0	ft. in. 29 6	ft. in. 30 0	ft. in. 30 6	ft. in. 31 0
	ft. 342	ft. 348	ft. 354	ft. 360	ft. 366	ft. 372
·68	ft. in. 6 8	ft. in. 6 10½	ft. in. 7 1	ft. in. 7 3½	ft. in. 7 6½	ft. in. 7 9
·70	6 9	7 0	7 2½	7 5	7 8	7 10½
·72	6 10	7 1	7 3½	7 6	7 9	7 11½
·74	6 11	7 2	7 4½	7 7	7 10	8 0½
·76	7 0	7 3	7 5½	7 8	7 11	8 1½
·78	7 1	7 4	7 7	7 9½	8 0½	8 3
·80	7 2	7 5	7 8	7 10½	8 1½	8 4
·82	7 3	7 6	7 9	7 11½	8 2½	8 5
Correction in inches for a change of 10 ft. in the length.	1·5	1·5	1·5	1·5	1·5	1·6
Deduction in inches for Summer Voyages.	4	4½	4½	4½	5	5

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*)					
	33·5	33·8	34·0	34·3	34·5	34·7
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.					
	Moulded Depth and Length.					
	ft. in. 31 6	ft. in. 32 0	ft. in. 32 6	ft. in. 33 0	ft. in. 33 6	ft. in. 34 0
	ft. 378	ft. 384	ft. 390	ft. 396	ft. 402	ft. 408
·68	ft. in. 8 0	ft. in. 8 2½	ft. in. 8 4½	ft. in. 8 7	ft. in. 8 9½	ft. in. 9 0
·70	8 1½	8 4	8 6	8 8½	8 11	9 1½
·72	8 2½	8 5	8 7	8 9½	9 0	9 2½
·74	8 3½	8 6	8 8½	8 11	9 1½	9 4
·76	8 4½	8 7	8 9½	9 0	9 2½	9 5
·78	8 6	8 8½	8 11	9 1½	9 4	9 6½
·80	8 7	8 9½	9 0	9 2½	9 5	9 7½
·82	8 8	8 10½	9 1	9 3½	9 6	9 8½
Correction in inches for a change of 10 ft. in the length.	1·6	1·6	1·6	1·6	1·7	1·7
Deduction in inches for Summer Voyages.	5	5	5½	5½	5½	6

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*) 34·9	35·1	35·3	35·4	35·5	35·6	35·7	35·8	For Table C. deduct in each case.
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.								
	Moulded Depth and Length.								
	ft. in. 34 6	ft. in. 35 0	ft. in. 35 6	ft. in. 36 0	ft. in. 36 6	ft. in. 37 0	ft. in. 37 6	ft. in. 38 0	
	ft. 414	ft. 420	ft. 426	ft. 432	ft. 438	ft. 444	ft. 450	ft. 456	
·68	ft. in. 9 2½	ft. in. 9 5	ft. in. 9 7	ft. in. 9 9	ft. in. 9 11	ft. in. 10 1	ft. in. 10 3	ft. in. 10 5	ft. in. 2 2
·70	9 4	9 6	9 8	9 10	10 0	10 2	10 4½	10 6½	2 3
·72	9 5	9 7½	9 9½	9 11½	10 1½	10 3½	10 6	10 8	2 3
·74	9 6½	9 8½	9 11	10 1	10 3	10 5	10 7	10 9½	2 4
·76	9 7½	9 10	10 0	10 2½	10 4½	10 6½	10 8½	10 11	2 4
·78	9 9	9 11	10 1½	10 3½	10 5½	10 7½	10 10	11 0	2 5
·80	9 10	10 0½	10 2½	10 5	10 7	10 9	10 11½	11 1½	2 5
·82	9 11	10 1½	10 4	10 6½	10 8½	10 10½	11 0½	11 3	2 5
Correction in inches for a change of 10 ft in the length.	1·7	1·7	1·7	1·7	1·7	1·7	1·7	1·7	·8
Deduction in inches for Summer Voyages.	6	6	6	6½	6½	6½	6½	7	—

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.—(*Winter.*) 35·8	35·8	35·8	35·8	35·8	35·8	35·8	35·8	For Table C. deduct in each case.
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side.								
	Moulded Depth and Length.								
	ft. in. 38 6	ft. in. 39 0	ft. in. 39 6	ft. in. 40 0	ft. in. 40 6	ft. in. 41 0	ft. in. 41 6	ft. in. 42 0	
	ft. 462	ft. 468	ft. 474	ft. 480	ft. 486	ft. 492	ft. 498	ft. 504	
·68	ft. in. 10 7	ft. in. 10 9	ft. in. 10 11	ft. in. 11 1	ft. in. 11 3	ft. in. 11 4½	ft. in. 11 6½	ft. in. 11 8½	ft. in. 2 2
·70	10 8½	10 10½	11 0½	11 2½	11 4½	11 6	11 8	11 10	2 3
·72	10 10	11 0	11 2	11 4	11 6	11 7½	11 9½	11 11½	2 3
·74	10 11½	11 1½	11 3½	11 5½	11 7½	11 9	11 10½	12 0½	2 4
·76	11 1	11 3	11 5	11 7	11 9	11 10½	12 0	12 2	2 4
·78	11 2	11 4	11 6	11 8	11 10½	12 0	12 1½	12 3½	2 5
·80	11 3½	11 5½	11 7½	11 10	12 0	12 1½	12 3½	12 5½	2 5
·82	11 5	11 7	11 9	11 11½	12 1½	12 3½	12 5½	12 7½	2 5
Correction in inches for a change of 10 ft. in the length.	1·7	1·7	1·7	1·7	1·7	1·7	1·7	1·7	·8
Deduction in inches for Summer Voyages.	7	7	7	7½	7½	7½	7½	8	—

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water).

Co-efficient of Fineness.	PERCENTAGE RESERVE BUOYANCY—(*Winter.*) 35·8	35·8	35·8	35·8	35·8	35·8	35·8	35·8	For Table C. deduct in each case.
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS—(*Winter.*) Measured from Top of Deck at Side. Moulded Depth and Length.								
	ft. in. 42 6	ft. in. 43 0	ft. in. 43 6	ft. in. 44 0	ft. in. 44 6	ft. in. 45 0	ft. in. 45 6	ft. in. 46 0	
	ft. 510	ft. 516	ft. 522	ft. 528	ft. 534	ft. 540	ft. 546	ft. 552	
·68	ft. in. 11 10½	ft. in. 12 0	ft. in. 12 2	ft. in. 12 3½	ft. in. 12 5	ft. in. 12 7	ft. in. 12 9	ft. in. 12 10½	ft. in. 2 2
·70	12 0	12 2	12 4	12 5½	12 7	12 8½	12 10½	13 0	2 3
·72	12 1½	12 3½	12 5½	12 7	12 8½	12 10	13 0	13 2	2 3
·74	12 3	12 5	12 7	12 8½	12 10	13 0	13 2	13 4	2 4
·76	12 4½	12 6½	12 8½	12 10	13 0	13 2	13 4	13 6	2 4
·78	12 6	12 8	12 10	13 0	13 2	13 3½	13 5½	13 7½	2 5
·80	12 7½	12 9½	12 11½	13 1½	13 3½	13 5	13 7	13 9	2 5
·82	12 9½	12 11½	13 1½	13 3½	13 5½	13 7	13 9	13 10½	2 5
Correction in inches for a change of 10 ft. in the length.	1·7	1·7	1·7	1·7	1·7	1·7	1·7	1·7	·8
Deduction in inches for Summer Voyages.	8	8	8	8½	8½	8½	8½	9	—

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE A.—*continued.*

CARGO-CARRYING STEAM VESSELS NOT HAVING SPAR OR AWNING DECKS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE OF RESERVE BUOYANCY.—(*Winter.*) 35·8	35·8	35·8	35·8	35·8	35·8	35·8	35·8	For Table C. deduct in each case.
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Deck at Side. Moulded Depth and Length.								
	ft. in. 46 6	ft. in. 47 0	ft. in. 47 6	ft. in. 48 0	ft. in. 48 6	ft. in. 49 0	ft. in. 49 6	ft. in. 50 0	
	ft. 558	ft. 564	ft. 570	ft. 576	ft. 582	ft. 588	ft. 594	ft. 600	
·68	ft. in. 13 0	ft. in. 13 1½	ft. in. 13 3	ft. in. 13 5	ft. in. 13 6½	ft. in. 13 8	ft. in. 13 9½	ft. in. 13 11	ft. in. 2 2
·70	13 1½	13 3	13 4½	13 6½	13 8	13 10	13 11½	14 1	2 3
·72	13 3½	13 5	13 6½	13 8½	13 10	13 11½	14 1	14 3	2 3
·74	13 5½	13 7	13 8½	13 10½	14 0	14 1½	14 3	14 4½	2 4
·76	13 7½	13 9	13 10½	14 0½	14 2	14 3½	14 5	14 6½	2 4
·78	13 9	13 10½	14 0	14 2	14 3½	14 5	14 6½	14 8½	2 5
·80	13 10½	14 0	14 1½	14 3½	14 5	14 6½	14 8	14 10	2 5
·82	14 0½	14 2	14 3½	14 5½	14 7	14 8½	14 10	15 0	2 5
Correction in inches for a change of 10 ft. in the length.	1·7	1·7	1·7	1·7	1·7	1·7	1·7	1·7	·8
Deduction in inches for Summer Voyages.	9	9	9	9½	9½	9½	9½	9½	—

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE B.—*continued.*

CARGO-CARRYING SPAR DECK VESSELS.

TABLE OF FREEBOARD TO SPAR DECK FOR FIRST-CLASS SEA-GOING SPAR DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*)* Measured from Top of Spar Deck at Side. Moulded Depth (to Main Deck) and Length.					
	ft. in. 19 0	ft. in. 19 6	ft. in. 20 0	ft. in. 20 6	ft. in. 21 0	ft. in. 21 6
	ft. 312	ft. 318	ft. 324	ft. 330	ft. 336	ft. 342
·68	ft. in. 6 7½	ft. in. 6 9	ft. in. 6 11	ft. in. 7 0½	ft. in. 7 2½	ft. in. 7 4½
·70	6 8½	6 10	7 0	7 1½	7 3½	7 5½
·72	6 9	6 10½	7 0½	7 2	7 4	7 6
·74	6 9½	6 11	7 1	7 3	7 5	7 7
·76	6 10	6 11½	7 1½	7 3½	7 5½	7 7½
·78	6 10½	7 0	7 2	7 4	7 6	7 8
·80	6 11	7 0½	7 2½	7 4½	7 6½	7 8½
·82	6 11½	7 1	7 3	7 5	7 7	7 9
Correction in inches for a change of 10 ft. in the length.	1·1	1·1	1·1	1·1	1·1	1·2
Deduction in inches for Summer Voyages.	3½	3½	3½	4	4	4

* These tables apply to spar deck vessels in which the height at side between the main and spar decks is 7 ft. from top of beam to top of beam; when this height is greater or less than 7 ft. the freeboard to the spar deck will require modification.

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE B.—*continued.*

CARGO-CARRYING SPAR DECK VESSELS.

TABLE OF FREEBOARD TO SPAR DECK FOR FIRST-CLASS SEA-GOING SPAR DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*)* Measured from Top of Spar Deck at Side. Moulded Depth (to Main Deck) and Length.					
	ft. in. 22 0	ft. in. 22 6	ft. in. 23 0	ft. in. 23 6	ft. in. 24 0	ft. in. 24 6
	ft. 348	ft. 354	ft. 360	ft. 366	ft. 372	ft. 378
·68	ft. in. 7 7	ft. in. 7 9	ft. in. 7 11½	ft. in. 8 2	ft. in. 8 4½	ft. in. 8 7
·70	7 8	7 10	8 0½	8 3	8 5½	8 8
·72	7 8½	7 10½	8 1	8 3½	8 6	8 8½
·74	7 9½	7 11½	8 2	8 4½	8 7	8 9½
·76	7 10	8 0	8 2½	8 5	8 7½	8 10
·78	7 10½	8 0½	8 3	8 5½	8 8	8 11
·80	7 11	8 1	8 3½	8 6	8 8½	8 11½
·82	7 11½	8 1½	8 4	8 7	8 9½	9 0½
Correction in inches for a change of 10 ft. in the length.	1·2	1·2	1·2	1·2	1·3	1·3
Deduction in inches for Summer Voyages.	4½	4½	4½	5	5	5

*These tables apply to spar deck vessels in which the height at side between the main and spar decks is 7 ft. from top of beam to top of beam; when this height is greater or less than 7 ft. the freeboard to the spar deck will require modification.

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE B.—*continued.*

CARGO-CARRYING SPAR DECK VESSELS.

TABLE OF FREEBOARD TO SPAR DECK FOR FIRST-CLASS SEA-GOING SPAR DECK STEAM VESSEES.

(In Salt Water.)

Coefficient of Fineness.	HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*)* Measured from Top of Spar Deck at Side.					
	Moulded depth (to Main Deck) and Length.					
	ft. in. 25 0	ft. in. 25 6	ft. in. 26 0	ft. in. 26 6	ft. in. 27 0	ft. in. 27 6
	ft. 384	ft. 390	ft. 396	ft. 402	ft. 408	ft. 414
·68	ft. in. 8 9½	ft. in. 9 0	ft. in. 9 2½	ft. in. 9 5½	ft. in. 9 8	ft. in. 9 11
·70	8 10½	9 1	9 3½	9 6½	9 9	10 0
·72	8 11	9 2	9 4½	9 7½	9 10	10 1
·74	9 0	9 3	9 5½	9 8½	9 11	10 2
·76	9 0½	9 3½	9 6	9 9	10 0	10 3
·78	9 1½	9 4½	9 7	9 10	10 1	10 4
·80	9 2	9 5	9 7½	9 10½	10 1½	10 4½
·82	9 3	9 6	9 8½	9 11½	10 2½	10 5½
Correction in inches for a change of 10 ft. in the length.	1·3	1·3	1·3	1·4	1·4	1·4
Deduction in inches for Summer Voyages.	5½	5½	5½	5½	6	6

*These tables apply to spar deck vessels in which the height at side between the main and spar decks is 7 ft. from top of beam to top of beam; when this height is greater or less than 7 ft. the freeboard to the spar deck will require modification.

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE B.—*continued.*

CARGO-CARRYING SPAR DECK VESSELS.

TABLE OF FREEBOARD TO SPAR DECK FOR FIRST-CLASS SEA-GOING SPAR DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*)* Measured from Top of Spar Deck at Side.				
	Moulded Depth (to Main Deck) and Length.				
	ft. in. 28 0	ft. in. 28 6	ft. in. 29 0	ft. in. 29 6	ft. in. 30 0
	ft. 420	ft. 426	ft. 432	ft. 438	ft. 444
·68	ft. in. 10 2	ft. in. 10 5	ft. in. 10 8½	ft. in. 10 11½	ft. in. 11 3
·70	10 3	10 6	10 9½	11 0½	11 4
·72	10 4	10 7	10 10½	11 1½	11 5
·74	10 5	10 8	10 11½	11 2½	11 6
·76	10 6	10 9	11 0½	11 3½	11 7
·78	10 7	10 10	11 1½	11 4½	11 8
·80	10 7½	10 10½	11 2	11 5½	11 9
·82	10 8½	10 11½	11 3	11 6½	11 10
Correction in inches for a change of 10 ft. in the length.	1·4	1·5	1·5	1·5	1·5
Deduction in inches for Summer Voyages.	6	6	6½	6½	6½

* These tables apply to spar deck vessels in which the height at side between the main and spar decks is 7 ft. from top of beam to top of beam; when this height is greater or less than 7 ft. the freeboard to the spardeck will require modification.

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLES C.

Tables of Freeboard for First-Class Cargo-Carrying Awning Deck Vessels.

Table C.

CARGO CARRYING AWNING DECK VESSELS.

Table of Reserve Buoyancy and Freeboard for First-Class Sea-Going Awning Deck Steam Vessels.

(In Salt Water.)

Coefficient of Fineness.	Percentage Reserve Buoyancy to main Deck.—(*Winter.*)					
	15·0	15·1	15·2	15·3	15·4	15·5
	Corresponding Height of Freeboard Amidships.—(*Winter.*) Measured from Top of Main Deck at Side.					
	Moulded Depth (to Main Deck) and length.					
	ft. in. 14 0	ft. in. 14 6	ft. in. 15 0	ft. in. 15 6	ft. in. 16 0	ft. in. 16 6
	ft. 168	ft. 174	ft. 180	ft. 186	ft. 192	ft. 198
·66	ft. in. 1 0	ft. in. 1 0½	ft. in. 1 1	ft. in. 1 1½	ft in. 1 2	ft. in. 1 2½
·68	1 0	1 0½	1 1	1 1½	1 2	1 2½
·70	1 0½	1 1	1 1½	1 2	1 2½	1 3
·72	1 0½	1 1	1 1½	1 2	1 3	1 3½
·74	1 1	1 1½	1 2	1 2½	1 3	1 3½
·76	1 1	1 1½	1 2	1 2½	1 3½	1 4
·78	1 1½	1 2	1 2½	1 3	1 4	1 4½
·80	1 1½	1 2	1 2½	1 3	1 4	1 4½
Correction in inches for a change of 10 ft. in the length.	·5	·5	·5	·5	·5	·5
Deduction in inches for Summer Voyages.	2	2	2	2	2	2½

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

Table C.—*continued.*

CARGO-CARRYING AWNING DECK VESSELS.

Table of Reserve Buoyancy and Freeboard for First-class Sea-going Awning Deck Steam Vessels.

(In Salt Water.)

Coefficient of Fineness.	Percentage Reserve Buoyancy to Main Deck.—(*Winter.*)					
	15·7	15·8	16·0	16·2	16·4	16·7
	Corresponding Height of Freeboard Amidships.—(*Winter.*) Measured from Top of Main Deck at Side.					
	Moulded Depth (to Main Deck) and Length.					
	ft. in. 17 0	ft. in. 17 6	ft. in. 18 0	ft. in. 18 6	ft. in. 19 0	ft. in. 19 6
	ft. 204	ft. 210	ft. 216	ft. 222	ft. 228	ft. 234
·66	ft. in. 1 3½	ft. in. 1 4	ft. in. 1 5	ft. in. 1 6	ft. in. 1 7	ft. in. 1 8
·68	1 3½	1 4	1 5	1 6	1 7	1 8
·70	1 4	1 4½	1 5½	1 6½	1 7½	1 8½
·72	1 4½	1 5	1 6	1 7	1 8	1 9
·74	1 4½	1 5	1 6	1 7	1 8½	1 9
·76	1 5	1 5½	1 6½	1 7½	1 8½	1 9½
·78	1 5½	1 6	1 7	1 8	1 9	1 10
·80	1 5½	1 6	1 7	1 8	1 9	1 10
Correction in inches for a change of 10 ft. in the length.	·5	·5	·5	·6	·6	·6
Deduction in inches for Summer Voyages.	2½	2½	2½	3	3	3

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLES C.

TABLES OF FREEBOARD FOR FIRST-CLASS CARGO-CARRYING AWNING DECK VESSELS.

TABLE C.

CARGO-CARRYING AWNING DECK VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*) 15·0	15·1	15·2	15·3	15·4	15·5
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side. Moulded Depth (to Main Deck) and length.					
	ft. in. 14 0	ft. in. 14 6	ft. in. 15 0	ft. in. 15 6	ft. in. 16 0	ft. in. 16 6
	ft. 168	ft. 174	ft. 180	ft. 186	ft. 192	ft. 198
·66	ft. in. 1 0	ft. in. 1 0½	ft. in. 1 1	ft. in. 1 1½	ft in. 1 2	ft. in. 1 2½
·68	1 0	1 0½	1 1	1 1½	1 2	1 2½
·70	1 0½	1 1	1 1½	1 2	1 2½	1 3
·72	1 0½	1 1	1 1½	1 2	1 3	1 3½
·74	1 1	1 1½	1 2	1 2½	1 3	1 3½
·76	1 1	1 1½	1 2	1 2½	1 3½	1 4
·78	1 1½	1 2	1 2½	1 3	1 4	1 4½
·80	1 1½	1 2	1 2½	1 3	1 4	1 4½
Correction in inches for a change of 10 ft. in the length.	·5	·5	·5	·5	·5	·5
Deduction in inches for Summer Voyages.	2	2	2	2	2	2½

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE C.—*continued.*

CARGO-CARRYING AWNING DECK VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*) 15·7	15·8	16·0	16·2	16·4	16·7
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side. Moulded Depth (to Main Deck) and Length.					
	ft. in. 17 0	ft. in. 17 6	ft. in. 18 0	ft. in. 18 6	ft. in. 19 0	ft. in. 19 6
	ft. 204	ft. 210	ft. 216	ft. 222	ft. 228	ft. 234
·66	ft. in. 1 3½	ft. in. 1 4	ft. in. 1 5	ft. in. 1 6	ft. in. 1 7	ft. in. 1 8
·68	1 3½	1 4	1 5	1 6	1 7	1 8
·70	1 4	1 4½	1 5½	1 6½	1 7½	1 8½
·72	1 4½	1 5	1 6	1 7	1 8	1 9
·74	1 4½	1 5	1 6	1 7	1 8½	1 9½
·76	1 5	1 5½	1 6½	1 7½	1 9	1 10
·78	1 5½	1 6	1 7	1 8	1 9	1 10
·80	1 5½	1 6	1 7	1 8		
Correction in inches for a change of 10 ft. in the length.	·5	·5	·5	·6	·6	·6
Deduction in inches for Summer Voyages.	2½	2½	2½	3	3	3

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE C.—*continued.*

CARGO-CARRYING AWNING DECK VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*)					
	16·9	17·2	17·4	17·7	18·0	18·3
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side.					
	Moulded Depth (to Main Deck) and Length.					
	ft. in. 20 0	ft. in. 20 6	ft. in. 21 0	ft. in. 21 6	ft. in. 22 0	ft. in. 22 6
	ft. 240	ft. 246	ft. 252	ft. 258	ft. 264	ft. 270
·66	ft. in. 1 9	ft. in. 1 10½	ft. in. 1 11½	ft. in. 2 1	ft. in. 2 2	ft. in. 2 3½
·68	1 9	1 10½	1 11½	2 1	2 2½	2 4
·70	1 9½	1 11	2 0	2 1½	2 3	2 4½
·72	1 10	1 11½	2 0½	2 2	2 3½	2 5
·74	1 10	1 11½	2 0½	2 2	2 3½	2 5
·76	1 10½	2 0	2 1	2 2½	2 4	2 5½
·78	1 11	2 0½	2 1½	2 3	2 4½	2 6
·80	1 11½	2 1	2 2	2 3½	2 5	2 6½
Correction in inches for a change of 10 ft. in the length.	·6	·6	·6	·6	·6	·6
Deduction in inches for Summer Voyages.	3½	3¾	3½	3½	4	4

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE C.—*continued.*

CARGO-CARRYING AWNING DECK VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*)					
	18·6	18·9	19·2	19·6	19·9	20 3
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side.					
	Moulded Depth (to Main Deck) and Length.					
	ft. in. 23 0	ft. in. 23 6	ft. in. 24 0	ft. in. 24 6	ft. in. 25 0	ft. in. 25 6
	ft. 276	ft. 282	ft. 288	ft. 294	ft. 300	ft. 306
·66	ft. in. 2 5	ft. in. 2 6½	ft. in. 2 8	ft. in. 2 10	ft. in. 3 0	ft. in. 3 2
·68	2 5½	2 7	2 8½	2 10½	3 0½	3 2½
·70	2 6	2 7½	2 9	2 11	3 1	3 3
·72	2 6½	2 8	2 9½	2 11½	3 1½	3 3½
·74	2 6½	2 8	2 10	3 0	3 2	3 4
·76	2 7	2 8½	2 10½	3 0½	3 2½	3 4½
·78	2 7½	2 9	2 11	3 1	3 3	3 5
·80	2 8	2 9½	2 11½	3 1½	3 3½	3 5½
Correction in inches for a change of 10 ft. in the length.	·6	·6	·6	·7	·7	·7
Deduction in inches for Summer Voyages.	4	4½	4½	4½	5	5

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE C.—*continued.*

CARGO-CARRYING AWNING DECK VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*)					
	16·9	17·2	17·4	17·7	18·0	18·3
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side.					
	Moulded Depth (to Main Deck) and Length.					
	ft. in. 20 0	ft. in. 20 6	ft. in. 21 0	ft. in. 21 6	ft. in. 22 0	ft. in. 22 6
	ft. 240	ft. 246	ft. 252	ft. 258	ft. 264	ft. 270
·66	ft. in. 1 9	ft. in. 1 10½	ft. in. 1 11½	ft. in. 2 1	ft. in. 2 2	ft. in. 2 3½
·68	1 9	1 10½	1 11½	2 1	2 2½	2 4
·70	1 9½	1 11	2 0	2 1½	2 3	2 4½
·72	1 10	1 11½	2 0½	2 2	2 3½	2 5
·74	1 10	1 11½	2 0½	2 2	2 3½	2 5
·76	1 10½	2 0	2 1	2 2½	2 4	2 5½
·78	1 11	2 0½	2 1½	2 3	2 4½	2 6
·80	1 11½	2 1	2 2	2 3½	2 5	2 6½
Correction in inches for a change of 10 ft. in the length.	·6	·6	·6	·6	·6	·6
Deduction in inches for Summer Voyages.	3½	3½	3½	3½	4	4

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE C.—*continued.*

CARGO-CARRYING AWNING DECK VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*)					
	18·6	18·9	19·2	19·6	19·9	20·3
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side.					
	Moulded Depth (to Main Deck) and Length.					
	ft. in. 23 0	ft. in. 23 6	ft. in. 24 0	ft. in. 24 6	ft. in. 25 0	ft. in. 25 6
	ft. 276	ft. 282	ft. 288	ft. 294	ft. 300	ft. 306
·66	ft. in. 2 5	ft. in. 2 6½	ft. in. 2 8	ft. in. 2 10	ft. in. 3 0	ft. in. 3 2
·68	2 5½	2 7	2 8½	2 10½	3 0½	3 2½
·70	2 6	2 7½	2 9	2 11	3 1	3 3
·72	2 6½	2 8	2 9½	2 11½	3 1½	3 3½
·74	2 6½	2 8	2 10	3 0	3 2	3 4
·76	2 7	2 8½	2 10½	3 0½	3 2½	3 4½
·78	2 7½	2 9	2 11	3 1	3 3	3 5
·80	2 8	2 9½	2 11½	3 1½	3 3½	3 5½
Correction in inches for a change of 10 ft. in the length.	·6	·6	·6	·7	·7	·7
Deduction in inches for Summer Voyages.	4	4½	4½	4½	5	5

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE C.—*continued.*

CARGO-CARRYING AWNING DECK VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*)					
	20·6	21·0	21·4	21·9	22·3	22·8
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side.					
	Moulded Depth (to Main Deck) and Length.					
	ft. ft. 26 0	ft. in. 26 6	ft. in. 27 0	ft. in. 27 6	ft. in. 28 0	ft. in. 28 6
	ft. 312	ft. 318	ft. 324	ft. 330	ft. 336	ft. 342
·66	ft. in. 3 4	ft. in. 3 6½	ft. in. 3 9	ft. in. 3 11½	ft. in. 4 2	ft. in. 4 4½
·68	3 4½	3 7	3 9½	4 0	4 2½	4 5
·70	3 5	3 7½	3 10	4 0½	4 3	4 5½
·72	3 5½	3 8	3 10½	4 1	4 3½	4 6½
·74	3 6	3 8½	3 11	4 1½	4 4	4 7
·76	3 7	3 9½	4 0	4 2½	4 5	4 7½
·78	3 7½	3 10	4 0½	4 3	4 5½	4 8
·80	3 8	3 10½	4 1	4 3½	4 6	4 8½
Correction in inches for a change of 10 ft. in the length.	·7	·7	·7	·7	·7	·7
Deduction in inches for Summer Voyages.	5	5½	5½	5½	5½	6

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE C.—*continued.*

CARGO-CARRYING AWNING DECK VESSELS

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*)					
	23·3	23·8	24·3	24·7	25·2	25·6
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side.					
	Moulded Depth (to Main Deck) and Length.					
	ft. in. 29 0	ft. in. 29 6	ft. in. 30 0	ft. in. 30 6	ft. in. 31 0	ft. in. 31 6
	ft. 348	ft. 354	ft. 360	ft. 366	ft. 372	ft. 378
·66	ft. in. 4 7	ft. in. 4 9½	ft. in. 5 0	ft. in. 5 2½	ft. in. 5 5½	ft. in. 5 8
·68	4 7½	4 10	5 1	5 3½	5 6½	5 9
·70	4 8	4 10½	5 1½	5 4	5 7	5 9½
·72	4 9	4 11½	5 2½	5 5	5 8	5 10½
·74	4 9½	5 0	5 3	5 5½	5 8½	5 11
·76	4 10	5 1	5 4	5 6½	5 9½	6 0
·78	4 10½	5 1½	5 4½	5 7	5 10	6 0½
·80	4 11	5 2	5 5	5 7½	5 10½	6 1
Correction in inches for a change of 10 ft. in the length.	·7	·8	·8	·8	·8	·8
Deduction in inches for Summer Voyages.	6	6	6	6	6	6½

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE C.—*continued.*

CARGO CARRYING AWNING DECK VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING AWNING DECK STEAM VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY TO MAIN DECK.—(*Winter.*)				
	26·1	26·5	26·8	27·2	27·6
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS.—(*Winter.*) Measured from Top of Main Deck at Side.				
	Moulded Depth (to Main Deck) and Length.				
	ft. in. 32 0	ft. in. 32 6	ft. in. 33 0	ft. in. 33 6	ft. in. 34 0
	ft. 384	ft. 390	ft. 396	ft. 402	ft. 408
·66	ft. in. 5 11	ft. in. 6 1½	ft. in. 6 4	ft. in. 6 6	ft. in. 6 9
·68	6 0	6 2½	6 5	6 7	6 10
·70	6 0½	6 3	6 5½	6 7½	6 10½
·72	6 1½	6 4	6 6½	6 8½	6 11½
·74	6 2	6 4½	6 7	6 9	7 0
·76	6 3	6 5½	6 8	6 10	7 1
·78	6 3½	6 6	6 8½	6 10½	7 1½
·80	6 4	6 7	6 9	6 11½	7 2½
Correction in inches for a change of 10 ft. in the length.	·8	·8	·8	·8	·8
Deduction in inches for Summer Voyages.	6½	6½	6½	6½	6½

The above reduction in freeboard for summer voyages from European and Mediterranean ports is to be made from April to September inclusive. In other parts of the world the reduced freeboard should be used during the corresponding or recognised summer months. Double the above reduction to be allowed for voyages in the fine season in the Indian seas, between the limits of Suez and Singapore. An additional freeboard of two inches shall be required for all vessels up to and including 330 feet in length when entering the North Atlantic, when sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLES D.

TABLES OF FREEBOARD FOR FIRST-CLASS IRON, STEEL, COMPOSITE, AND WOOD SAILING VESSELS.

TABLE D.—SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS AND COMPOSITE AND WOOD VESSELS OF THE HIGHEST CLASS. (In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY. (Iron Vessels.)								
	21·7	21·9	22·1	22·3	22·5	22·7	22·9	23·1	23·3
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS. Measured from Top of Deck at side.								
	Moulded Depth and Length.								
Wood.	Composite.	Iron.	ft. in. 5 6	ft. in. 6 0	ft. in. 6 6	ft. in. 7 0	ft. in. 7 6	ft. in. 8 0	ft. in. 8 6	ft. in. 9 0	ft. in. 9 6
			55 0	60 0	65 0	70 0	75 0	80 0	85 0	90 0	95 0
—	—	·64	0 8½	0 9½	0 10½	0 11½	1 0½	1 1½	1 2½	1 3½	1 4½
—	·64	·66	0 8½	0 9½	0 10½	0 11½	1 0½	1 1½	1 2½	1 3½	1 4½
—	·66	·68	0 9	0 10	0 11	1 0	1 1	1 2	1 3	1 4	1 5
·64	·68	·70	0 9	0 10	0 11	1 0	1 1	1 2	1 3	1 4	1 5
·66	·70	·72	0 9½	0 10½	0 11½	1 0½	1 1½	1 2½	1 3½	1 4½	1 5½
·68	·72	·74	0 9½	0 10½	0 11½	1 0½	1 1½	1 2½	1 3½	1 4½	1 5½
·70	·74	—	0 10	0 11	1 0	1 1	1 2	1 3	1 4	1 5	1 6
·72	—	—	0 10	0 11	1 0	1 1	1 2	1 3	1 4	1 5	1 6
Correction in inches for a change of 10 ft. in the length			·8	·8	·8	·8	·8	·8	·9	·9	·9

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D.—*continued.*

SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS AND COMPOSITE AND WOOD VESSELS OF THE HIGHEST CLASS.
(In Salt Water.)

Coefficient of Fineness.			PERCENTAGE RESERVE BUOYANCY. (Iron Vessels.)				
			23·5	23·7	23·9	24·2	24·4
			CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS. Measured from Top of Deck at Side.				
			Moulded Depth and Length.				
Wood.	Composite.	Iron.	ft. in. 10 0	ft. in. 10 6	ft. in. 11 0	ft. in. 11 6	ft. in. 12 0
			ft. 100	ft. 105	ft. 110	ft. 115	ft. 120
			ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
—	—	·64	1 5½	1 6½	1 7½	1 9	1 10½
—	·64	·66	1 5½	1 6½	1 7½	1 9	1 10½
—	·66	·68	1 6	1 7	1 8	1 9½	1 11
·64	·68	·70	1 6	1 7	1 8½	1 10	1 11½
·66	·70	·72	1 6½	1 7½	1 9	1 10½	2 0
·68	·72	·74	1 6½	1 7½	1 9	1 10½	2 0
·70	·74	—	1 7	1 8	1 9½	1 11	2 0½
·72	—	—	1 7	1 8½	1 10	1 11½	2 1
Corrections in inches for a change of 10 ft. in the length.			·9	·9	·9	1·0	1·0

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D.—*continued.*

SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS AND COMPOSITE AND WOOD VESSELS OF THE HIGHEST CLASS.
(In Salt Water.)

Coefficient of Fineness.			PERCENTAGE RESERVE BUOYANCY. (Iron Vessels.)			
			24·6	24·9	25·1	25·3
			CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS. Measured from Top of Deck at Side.			
			Moulded Depth and Length.			
Wood.	Composite.	Iron.	ft. in. 12 6	ft. in. 13 0	ft. in. 13 6	ft. in. 14 0
			ft. 125	ft. 130	ft. 135	ft. 140
			ft. in.	ft. in.	ft. in.	ft. in.
—	—	·64	1 11½	2 1	2 2½	2 3½
—	·64	·66	2 0	2 1½	2 3	2 4
—	·66	·68	2 0½	2 2	2 3½	2 4½
·64	·68	·70	2 1	2 2½	2 4	2 5
·66	·70	·72	2 1½	2 3	2 4½	2 5½
·68	·72	·74	2 1½	2 3	2 4½	2 6
·70	·74	—	2 2	2 3½	2 5	2 6½
·72	—	—	2 2½	2 4	2 5½	2 7
Correction in inches for a change of 10 ft. in the length.			1·0	1·0	1·0	1.0

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D—*continued.*

SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS AND COMPOSITE AND WOOD VESSELS OF THE HIGHEST CLASS.

(In Salt Water.)

Coefficient of Fineness.			Percentage Reserve Buoyancy. (Iron Vessels.)				
			25·5	25·7	26·0	26·2	26·4
			Corresponding Height of Freeboard Amidships. Measured from Top of Deck at Side.				
			Moulded Depth and Length.				
Wood.	Composite.	Iron.	ft. in. 14 6	ft. in. 15 0	ft. in. 15 6	ft. in. 16 0	ft. in. 16 6
			ft. 145	ft. 150	ft. 155	ft. 160	ft. 165
—	—	·64	ft. in. 2 5	ft. in. 2 6½	ft. in. 2 8	ft. in. 2 9½	ft. in. 2 11
—	·64	·66	2 5½	2 7	2 8½	2 10	2 11½
—	·66	·68	2 6	2 7½	2 9	2 10½	3
·64	·68	·70	2 6½	2 8	2 9½	2 11	3 0½
·66	·70	·72	2 7	2 8½	2 10	2 11½	3 1
·68	·72	·74	2 7½	2 9	2 10½	3 0	3 1½
·70	·74	—	2 8	2 9½	2 11	3 0½	3 2
·72	—	—	2 8½	2 10	2 11½	3 1	3 2½
Correction in inches for a change of 10 ft. in the length.			1·1	1·1	1·1	1·1	1·1

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D.—*continued.*

SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS AND COMPOSITE AND WOOD VESSELS OF THE HIGHEST CLASS.

(In Salt Water.)

Coefficient of Fineness.			Percentage Reserve Buoyancy. (Iron Vessels.)				
			26·6	26·8	27·1	27·3	27·5
			Corresponding Height of Freeboard Amidships. Measured from Top of Deck at Side.				
			Moulded Depth and Length.				
Wood.	Composite.	Iron.	ft. in. 17 0	ft. in. 17 6	ft. in. 18 0	ft. in. 18 6	ft. in. 19 0
			ft. 170	ft. 175	ft. 180	ft. 185	ft. 190
—	—	·64	ft. in. 3 0½	ft. in. 3 2	ft. in. 3 3½	ft. in. 3 5	ft. in. 3 6½
—	·64	·66	3 1	3 2½	3 4	3 5½	3 7
—	·66	·68	3 1½	3 3	3 4½	3 6	3 7½
·64	·68	·70	3 2	3 3½	3 5	3 6½	3 8
·66	·70	·72	3 2½	3 4	3 5½	3 7½	3 9
·68	·72	·74	3 3	3 4½	3 6	3 8	3 9½
·70	·74	—	3 3½	3 5	3 6½	3 8½	3 10
·72	—	—	3 4	3 5½	3 7	3 9	3 10½
Correction in inches for a change of 10 ft. in the length.			1·1	1·1	1·1	1·1	1·2

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D.—*continued.*

SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS AND COMPOSITE AND WOOD VESSELS OF THE HIGHEST CLASS.

(In Salt Water.)

Coefficient of Fineness.			PERCENTAGE RESERVE BUOYANCY. (Iron Vessels.)				
			27·7	27·9	28·1	28·3	28·5
			CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS, Measured from Top of Deck at Side.				
			Moulded Depth and Length.				
			ft. in. 19 6	ft. in. 20 0	ft. in. 20 6	ft in. 21 0	ft. in. 21 6
Wood.	Composite.	Iron.	ft. 195	ft. 200	ft. 205	ft. 210	ft. 215
—	—	·64	ft. in. 3 8	ft. in. 3 9½	ft. in. 3 11½	ft. in. 4 1	ft. in. 4 2½
—	·64	·66	3 8½	3 10	4 0	4 1½	4 3½
—	·65	·68	3 9	3 11	4 0½	4 2	4 4
·64	·68	·70	3 9½	3 11½	4 1	4 2½	4 4½
·66	·70	·72	3 10½	4 0½	4 2	4 3½	4 5½
·68	·72	·74	3 11	4 1	4 2½	4 4	4 6
·70	·74	—	3 11½	4 1½	4 3	4 5	4 6½
·72	—	—	4 0	4 2	4 3½	4 5½	4 7½
Correction in inches for a change of 10 ft. in the length.			1·2	1·2	1·2	1·2	1·2

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D.—*continued.*

SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS AND COMPOSITE AND WOOD VESSELS OF THE HIGHEST CLASS.

(In Salt Water.)

Coefficient of Fineness.			PERCENTAGE RESERVE BUOYANCY. (Iron Vessels.)				
			28·7	28·9	29·1	29·3	29·5
			CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS. Measured from Top of Deck at Side.				
			Moulded Depth and Length.				
			ft. in. 22 0	ft. in. 22 6	ft. in. 23 0	ft. in. 23 6	ft. in. 24 0
Wood.	Composite.	Iron.	ft. 220	ft. 225	ft. 230	ft. 235	ft. 240
—	—	·64	ft. in. 4 4	ft. in. 4 6	ft. in. 4 7½	ft. in. 4 9½	ft. in. 4 11½
—	·64	·66	4 5	4 7	4 8½	4 10	5 0
—	·66	·68	4 5½	4 7½	4 9	4 11	5 1
·64	·68	·70	4 6	4 8	4 9½	4 11½	5 1½
·66	·70	·72	4 7	4 9	4 10½	5 0½	5 2½
·68	·72	·74	4 7½	4 9½	4 11	5 1	5 3
·70	·74	—	4 8½	4 10½	5 0	5 2	5 4
·72	—	—	4 9	4 11	5 1	5 3	5 5
Correction in inches for a change of 10 ft. in the length.			1·2	1·2	1·3	1·3	1·3

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D.—*continued.*

SAILING VESSELS.

ABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS AND COMPOSITE AND WOOD VESSELS OF THE HIGHEST CLASS.

(In Salt Water.)

Coefficient of Fineness.			PERCENTAGE RESERVE BUOYANCY. (Iron Vessels.)					
			29·7	29·9	30·1	30·3	30·5	30·7
			CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS. Measured from Top of Deck at Side.					
			Moulded Depth and Length.					
Wood.	Composite.	Iron.	ft. in. 24 6	ft. in. 25 0	ft. in. 25 6	ft. in. 26 0	ft. in. 26 6	ft. in. 27 0
			ft. 245	ft. 250	ft. 255	ft. 260	ft. 265	ft. 270
—	—	·64	ft. in. 5 1½	ft. in. 5 3½	ft. in. 5 5½	ft. in. 5 7½	ft. in. 5 9½	ft. in. 5 11½
—	·64	·66	5 2	5 4	5 6	5 8	5 10	6 0½
—	·66	·68	5 3	5 5	5 7	5 9	5 11	6 1½
·64	·68	·70	5 3½	5 5½	5 7½	5 9½	5 11½	6 2
·66	·70	·72	5 4½	5 6½	5 8½	5 10½	6 0½	6 3
·68	·72	·74	5 5	5 7	5 9	5 11	6 1	6 3½
·70	·74	—	5 6	5 8	5 10	6 0	6 2	6 4½
·72	—	—	5 7	5 9	5 11	6 1	6 3	6 5½
Correction in inches for a change of 10 ft. in the length.			1·3	1·3	1·3	1·3	1·3	1·4

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D.—*continued.*

SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.			
	30·9	31·2	31·4	31·7
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS. Measured from Top of Deck at Side.			
Iron.	Moulded Depth and Length.			
	ft. in. 27 6	ft. in. 28 0	ft. in. 28 6	ft. in. 29 0
	ft. 275	ft. 280	ft. 285	ft. 290
·64	ft. in. 6 1½	ft. in. 6 4	ft. in. 6 6	ft. in. 6 8
·66	6 2½	6 5	6 7	6 9
·68	6 3½	6 5½	6 8	6 10
·70	6 4	6 6½	6 8½	6 11
·72	6 5	6 7½	6 9½	7 0
·74	6 5½	6 8	6 10	7 0½
·76	6 6½	6 9	6 11	7 1½
Correction in inches for a change of 10 ft. in the length.	1·4	1·4	1·4	1·4

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE D.—*continued.*

SAILING VESSELS.

TABLE OF RESERVE BUOYANCY AND FREEBOARD FOR FIRST-CLASS SEA-GOING IRON AND STEEL SAILING VESSELS.

(In Salt Water.)

Coefficient of Fineness.	PERCENTAGE RESERVE BUOYANCY.			
	32·0	32·3	32·6	33·0
	CORRESPONDING HEIGHT OF FREEBOARD AMIDSHIPS. Measured from Top of Deck at Side.			
Iron.	Moulded Depth and Length.			
	ft. in. 29 6	ft. in. 30 0	ft. in. 30 6	ft. in. 31 0
	ft. 295	ft. 300	ft. 305	ft. 310
·64	ft. in. 6 10½	ft. in. 7 0½	ft. in. 7 3	ft. in. 7 5
·66	6 11½	7 1½	7 4	7 6
·68	7 0½	7 2½	7 5	7 7
·70	7 1	7 3½	7 5½	7 8
·72	7 2	7 4½	7 6½	7 9
·74	7 2½	7 5	7 7	7 9½
·76	7 3½	7 6	7 8	7 10½
Correction in inches for a change of 10 ft. in the length.	1·4	1·5	1·5	1·5

An additional freeboard of three inches is required for the North Atlantic trade, and is to apply to all vessels sailing to, or from, the Mediterranean, or any British or European port, and which may sail to, or from, or call at, ports in British North America, or eastern ports in the United States, north of Cape Hatteras, from October to March inclusive.

TABLE giving the WEIGHT in OUNCES per CUBIC FOOT of SAMPLES of SEA and RIVER WATER taken from the PLACES enumerated below.

The weight of a cubic foot of fresh water is ... ... 1,000 ounces.
The weight of a cubic foot of the densest sea water on the British coast is ... ... 1,025 „

Name of Port.	Dock, Harbour, or River from which Water was taken.	State of Tide.	Weight per cubic foot in ounces.
ABERDEEN DISTRICT.			
Aberdeen	Aberdeen Harbour	—	1,015
Fraserburgh ...	Harbour	—	1,025
Banff	Do.	—	1,024
Lossiemouth ...	Do.	—	1,022
Buckie	Do.	—	1,024
Peterhead ...	Do.	—	1,024
Port Gordon ...	Do.	—	1,024
Inverness ...	Do. ...	—	1,000
BARROW DISTRICT.			
Barrow	Buccleugh Dock	—	1,017
Whitehaven ...	Queen's Dock	—	1,024
Do. ...	Workington (the Harbour)	High	1,000
Do. ...	Do. (Lonsdale Dock)	—	1,000
Do. ...	Maryport (Elizabeth Dock)	—	1,014
Do. ...	Do. (the Harbour) ...	High	1,005
Do. ...			
BELFAST DISTRICT.			
Belfast	Harbour	High	1,011
BRISTOL DISTRICT.			
Bristol Channel ..	Avonmouth Dock	—	1,011
Do. ...	Portishead Dock	—	1,015
Bristol	Floating Harbour	—	1,000
Gloucester ...	Gloucester Docks	—	1,000
Do. ...	Sharpness Docks	—	1,000
Bridgwater ...	River Parret...	—	1,009
CARDIFF DISTRICT.			
Newport	Alexandra Dock	—	1,008
Do.	Old Dock	—	1,008
Cardiff	Roath Basin	—	1,008
Do.	Penarth Basin	—	1,018
CORK DISTRICT.			
	... ...	High	1,025
	... ...	Low	1,024
Queenstown ...	... ...	High	1,000
Do. ...	... ...	High	1,024
Cork	... ...	Low	1,022
Kinsale	.. ..	High	1,000
Do.	... The Quay	High	1,025
Limerick	... ...	Low	1,025
Youghal	... ...		
Do.			

Name of Port.	Dock, Harbour, or River from which Water was taken.	State of Tide.	Weight per cubic foot in ounces.
DUBLIN DISTRICT.			
Wicklow	Harbour	High	1,025
Do.	Do.	Low	1,023
Drogheda	Do.	High	1,000
Arklow	Do.	High	1,024
Do.	Do.	Low	1,021
Balbriggan	Do.	High	1,000
Dublin	Do.	High	1,024
Do.	Do.	Low	1,008
Kingstown	Do.	High	1,025
Do.	Do.	Low	1,025
Skerries	Do.	High	1,024
Do.	Do.	Low	1,020
Howth	Do.	High	1,025
DUNDEE DISTRICT.			
Dundee		High	1,021
Do.		Low	1,006
Perth		High	1,000
Arbroath		High	1,024
Do.		Low	1,024
Montrose		High	1,024
Do.		Low	1,024
St. Andrew's		High	1,025
Do.		Low	1,025
GLASGOW DISTRICT.			
Glasgow	Bowling	High	1,000
Do.	Queen's Dock	—	1,000
GREENOCK DISTRICT.			
Greenock	Tail of the Bank	High	1,022
Do.	Do.	Low	1,017
Do.	Albert Harbour	High	1,016
Do.	Do.	Low	1,016
Do.	Victoria Harbour	High	1,018
Do.	Do.	Low	1,018
Port Glasgow	Dry Dock Gates	High	1,013
Do.	Do.	Low	1,007
Ayr		2 hrs. after h. td.	1,003
Ardrossan	Wet Dock	High	1,024
Troon		High	1,023
Do.		Low	1,023
Campbeltown		—	1,024
HARTLEPOOL DISTRICT.			
West Hartlepool	Hartlepool Dock Gates	—	1,025
Do.	Loading Berth in Docks (W. Hartlepool).	—	1,024
Stockton	River Tees	High	1,005
Do.	Do.	Low	1,000
Middlesbro'	Do.	High	1,012
Do.	Do.	Low	1,002

Name of Port.	Dock, Harbour, or River from which Water was taken.	State of Tide.	Weight per cubic foot in ounces.
HULL DISTRICT.			
Hull	Victoria Dock	—	1,014
Do.	Humber off Hull	High	1,016
Do.	Albert Dock	—	1,015
Grimsby	Docks	—	1,018
Do.	Humber off Grimsby	—	1,020
Goole	Dock	—	1,000
LEITH DISTRICT.			
Leith	Albert Dock	—	1,022
Grangemouth	The Dock	—	1,008
Alloa	Do.	—	1,010
Granton		High	1,025
Do.		Low	1,025
Burntisland		—	1,024
Bo'ness	The Dock	—	1,021
	Do.		
LIVERPOOL DISTRICT.			
Liverpool	Mersey	High	1,021
Do.	Do.	Low	1,018
Do-	Canada Dock	—	1,016
Do.	George Dock	—	1,018
Do.	Herculaneum Dock	—	1,018
Birkenhead	Great Float Dock	—	1,020
River Dee	Connah's Quay	Low	1,018
Preston	River Ribble	High	1,000
Fleetwood	River Wyre	Low	1,024
Do.	Do.		1,023
LONDON DISTRICT.			
London	Thames off Horseferry Dock	High	1,000
Do.	Limehouse Basin, W. India Docks.	High	1,000
Do.	S.W. entrance to W. India Docks.	—	1,005
Do.	Victoria Docks	Low	1,000
Do.	Thames outside Victoria Docks.	High	1,019
Do.		Low	1,014
Gravesend	Thames		
Do.	Do.		
MILFORD DISTRICT.			
Milford	The Haven off Milford	High	1,023
Do.	Do. do.	Low	1,015
NEWCASTLE DISTRICT.			
Newcastle	Tyne Dock	—	1,023
Do.	Northumberland Dock	—	1,023
Do.	Tyne at Commissioners' Staithes.	High	1,023
	Do. do.	Low	1,018
Do.	Low Walker	High	1,013
Do.	Do.	Low	1,012
Do.			

Name of Port.	Dock, Harbour, or River from which Water was taken.	State of Tide.	Weight per cubic foot in ounces.
PLYMOUTH DISTRICT.			
Plymouth ...	The Sound	High	1,025
Do.	Do.	Low	1,020
SOUTHAMPTON DISTRICT.			
Southampton ...	Southampton Dock Extension	High	1,023
Do. ...	Do. do. ...	Low	1,020
Weymouth ...	Weymouth Harbour ...	High	1,024
Do. ...	Do. do.	Low	1,023
Portsmouth ...	Portsmouth Camber ...	High	1,024
Poole... ...	The River	—	1,022
Shoreham ...	River Adur (Shoreham) ...	High	1,025
Do. ...	Do. do. ...	Low	1,008
Littlehampton ...	... ...	High	1,024
Do. ...	... ...	Low	1,006
SUNDERLAND DISTRICT.			
Sunderland ...	Seaham Harbour (Entrance)	—	1,024
Do. ...	Do. (Wet Dock)	—	1,024
Do. ...	Port of Sunderland (South entrance to Harbour).	—	1,024
Do. ...	Port of Sunderland (South Wet Dock).	—	1,024
Do. ...	Port of Sunderland (North Wet Dock).	—	1,024
Do. ...	Port of Sunderland (Lambton Drops, River Wear).	High	1,024
Do. ...	Do. do. ...	Low	1,011
Do. ...	Port of Sunderland (Hendon Wet Dock).	—	1,023

The following example illustrates the method by which the additional draught of water to which a vessel should be laden in water, partly salt, may be determined :—

A flush deck vessel of 20 feet moulded depth sails from Aberdeen Harbour. To what extent should she be laden beyond the load line disc?

On referring to page 8 of the Freeboard Tables, it will be seen that this vessel should be laden deeper in *fresh* water than in *salt* to the extent of four inches. Also a cubic foot of fresh water weighs 1,000 ounces, while a cubic foot of the densest sea-water on the British Coast is found to weigh 1,025 ounces, the difference in weight being 25 ounces. The water in Aberdeen Harbour weighs 1,015 ounces per cubic foot, or 10 ounces less than salt water, and, as for a difference of 25 ounces in weight per cubic foot the increased immersion is 4 inches, it will be seen that the increased draught of water with which this vessel should leave Aberdeen Harbour is $\frac{10}{25}$ths of 4 inches, or about $1\frac{1}{2}$ inches.

MEMORANDUM

OF

Explanatory Notes on the Application of the Tables of Freeboard, drawn up with a view to securing Uniformity of Practice on the part of those entrusted with the Assignment of Freeboard.

Deck Line.—In the case of vessels with uncovered iron or steel decks, a width of gutter waterway is to be assumed, and the point so obtained levelled out to the vessel's side. In the case of vessels of 24 feet beam and under, the width of the waterway assumed should be 12 inches, and in vessels of 42 feet and above, 21 inches. In vessels of between 24 and 42 feet beam the width of the gutter waterway is to be taken as half an inch for every foot in beam.

Where a wood deck maintains a uniform thickness to the sides of a vessel, the same method should be adopted.

In cases where an iron deck is partly covered with wood, the deck-line is to correspond with the top of the deck amidships, whether the deck at that part be of wood or of iron, and the necessary corrections should be made in accordance with sub-paragraph (*b*), pages 63, 64, as also the correction always required to the statutory deck-line.

Bridge-houses in Spar-decked Ships.—In a spar-decked ship, where an efficient bridge house is fitted amidships, covering the engine and boiler openings, if it extends over at least two-fifths

of the vessel's length and has scantlings equal to the requirements of Lloyd's Register for bridge-houses, it is to be taken into consideration in estimating the strength of the vessel for freeboard.

The allowance on this account should not in any case exceed that given in the following table:—

Moulded depth of Vessel to Main-deck.	Allowance.
	Inches.
16 feet	4
20 ,, ...	3
24 ,, ...	2
28 ,, ...	1

Tables of Freeboard.—Additional freeboard will be required in the case of vessels classed 90 A and 80 A, or in vessels of equivalent strength thereto in accordance with the following scale:—

Length of vessel—

Feet.	150.	175.	200.	225.	250.	275.	300.
	Inch.	Inch.	Inches.	Inches.	Inches.	Inches.	Inches.
90 A Additions	½	½	½	¾	¾	1	1¼
80 A ,,	1	1	1¼	1½	1¾	2	2½

Wherever in these explanatory notes reference is made to classes of vessels of Lloyd's various types, it is to be understood that these apply equally to all other vessels of equivalent strength, whether classed by other classifying associations such, for instance, as the Bureau Veritas or the British Corporation or unclassed.

Para 1. *Length.*—The length of erections is to be measured with reference to the length of the vessel on the load-line, *i.e.*, any portion of the erections forward of the fore side of the stem on the load-line, or abaft the after side of the after post on the load-line, is not to be measured for deductions.

Para 3. *Depth of Hold.*—The depth of hold as used in the computation for ascertaining the coefficient of fineness in iron and steel sailing vessels is to be measured to the top of the ceiling, and in steam vessels to the top of the floors.

Para. 4. *Coefficient of Fineness.*—No alteration is to be made in the freeboard in consequence of the coefficient of fineness being either smaller or greater than those given on the page of the tables from which the ship's freeboard is taken.

Para. 5. *Moulded Depth.*—In cases where a wood deck of extra thickness is fitted, or where a wood deck is doubled throughout, the moulded depth should be increased by the excess of thickness. The freeboard should then be set off from the top of the deck of increased thickness at the side of the vessel.

Para. 6. *Freeboard.*—In case of the freeboard being ascertained by an actual calculation of the reserve buoyancy, the drawing used in such calculation should be verified by actual measurements at the ship, and such drawing and calculations forwarded to the Board of Trade, and whatever the result of the calculation the freeboard assigned should not be less than would be obtained by taking from the tables the freeboard corresponding to the smallest coefficient for a vessel of the same moulded depth, except in sailing vessels with large rise of floor (*see* page 74).

Freeboard as ascertained by these tables is to be measured to the intersection of the deck with the side of the vessel, but in granting certificates of freeboard this must always be corrected so as to state the freeboard amidships when measured to the deck-line, marked in accordance with the statute.

Sub-paras. (*a.*) *and* (*b.*).—For vessels having iron upper-decks not covered with wood, the allowance is to be made under sub-para. (*a.*), when the erections extend over less than $\frac{4}{10}$ths of the length; but in all vessels when the erections cover $\frac{4}{10}$ths or more of the length, and in spar and awning-decked vessels the allowance is to be made under sub-para. (*b.*).

Sub-para. (*b.*)—(*b.*) In spar-decked vessels having iron spar decks, and in awning-decked vessels having iron main decks, the freeboard by the tables should be calculated as if those decks were wood covered, *i.e.*, the ordinary thickness of a wood deck,

less the thickness of the stringer plate, should be deducted from the freeboard, also in vessels where $\frac{7}{10}$ths or more of the main deck is covered by substantial enclosed erections, the freeboard found from the tables should be measured amidships from a wood deck, or, if the deck is of iron, it should be measured from the iron deck, and the ordinary thickness of a wood deck required for that size of ship, less the thickness of the stringer plate, should in that case be deducted from the freeboard. In vessels which have $\frac{6}{10}$ths of the deck covered, $\frac{6}{10}$ths the thickness of a wood deck, less the thickness of the stringer plate is to be deducted from the freeboard. Between $\frac{6}{10}$ths and $\frac{7}{10}$ths a proportionate quantity; for example, for $\frac{6\,5}{10\,0}$ths covered allow $\frac{8}{10}$ths the thickness of the deck, after deducting the thickness of the stringer plate. The remainder of the paragraph should be read as printed. N.B.—When the deductions referred to in this sub-para. (*b.*) are allowed, the moulded depth is not to be reduced as per sub-para. (*a.*), para. 6.

Para. 9.—If the erections are at all under $\frac{6}{10}$ths of the vessel's length, the entire correction for length as given in the tables is to be applied.

Para. 11.—This paragraph does not apply to vessels where the erections cover less than $\frac{6}{10}$ths of the length, except in cases where the after erection covers at least $\frac{4}{10}$ths of the length, and the total length covered is between $\frac{5}{10}$ths and $\frac{6}{10}$ths the length of the vessel. In such cases the allowance should be proportioned between that allowed for erections $\frac{5}{10}$ths the length under para. 14 and that allowed for erections covering $\frac{6}{10}$ths of the length under para. 11, and the corrections for length and sheer should be included in estimating this allowance. In all other cases of vessels with erections covering less than $\frac{6}{10}$ths of the length, para. 14 is to be used.

No allowance is to be made for a monkey forecastle which is less in height than the main or top-gallant rail; where this condition is satisfied, the length to be used in estimating the allowance is to be obtained by multiplying the length of the monkey forecastle by its height and dividing by 6 feet, the minimum height of a top-gallant forecastle. This rule applies to vessels coming under paras. 12, 13, and 14, as well as under para. 11. In case of vessels having no forecastle, but in other respects coming under this para., the allowance for erections should be estimated on the supposition that there is a forecastle of $\frac{1}{8}$th the length of the vessel, deducting from this twice the allowance which the vessel would have for such a forecastle under para. 15.

In strong well-decked vessels of the modern type, having erections covering at least $\frac{8\,5}{10\,0}$ths of the length of the ship the bridge-house alone covering at least $\frac{4}{10}$ths of the length, the maximum allowances for extra strengthening are as follows:—

Vessels with plating number under 18,000, $2\frac{1}{2}$ inches.
Vessels with plating number 18,000 to 21,000, 3 inches.
Vessels with plating number 21,000 to 24,000, $3\frac{1}{2}$ inches.
Vessels with plating number 24,000 to 27,000, $3\frac{1}{2}$ inches.

The extra strength is to be as given in section 44, Lloyd's Rules for 1889 for iron and steel vessels. The freeboards assigned to these vessels must never be less than would be assigned for a complete awning-decked vessel of the same dimensions. The allowance prescribed below for well-decked vessels with strengthened bridge bulkheads is not to be given in addition to the allowance under this clause.

In part awning-deck vessels with raised quarter-decks and long superstructures strengthened as required for the strong well-decked vessel referred to above, a reduction may be made from the freeboard required by Table C., in accordance with the foregoing scale.

For raised quarter-decks of less than four feet in height, whether in part awning-decked vessels or vessels to which paras. 11 and 12 apply, and extending over four-tenths of the length and forming an integral portion of the vessel, the allowance for the erections should be diminished as shown in the following table:—

Height of raised Quarter-Deck.	Moulded Depth of Vessel in Feet.						
	ft. in. 10 0	ft. in. 12 0	ft. in. 14 0	ft. in. 16 0	ft. in. 18 0	ft. in. 20 0	ft. in. 22 0
ft. ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
3 6	—	¼	½	½	½	¾	¾
3 0	½	¾	1	1	1½	1½	1¾
2 6	1	1¼	1½	1¾	2	2½	3
2 0	1½	1¾	2¼	2¾	3¼	3¾	4½
1 6	2	2½	3	3¾	4¼	5	6

For shorter lengths of raised quarter-decks a proportionate correction should be made.

Well-decked vessels classed 100 A, having erections extending over $\frac{7}{10}$ths of their length with strengthened bridge bulkheads, freeing port area 25 per cent. in excess of the rule, and hatchway coamings at least 30 inches high, may have an allowance of $\frac{1}{12}$th the summer freeboard after all other corrections are made, but the allowance is not to exceed 2 inches.

Vessels of lower class, or with longer wells, &c., are to have a smaller allowance in proportion.

Sub-para. (*a.*).—The difference will not be affected by correction for length, as the allowance will be practically the same in both tables.

A proportionate allowance may be made for erections having a combined length of $\frac{35}{100}$ths, in which case the reduction in freeboard will be $\frac{90}{100}$ths of the difference between freeboards in Table A. (after correction for sheer) and Table C.

Sub-para. (*c.*).—The engine and boiler openings, if protected only by a raised quarter-deck, will require an addition in freeboard varying from 1 inch in vessels of 15 feet moulded depth to 2 inches in vessels of 20 feet moulded depth.

If with a small bridge-house in front of, but not covering, the openings, an addition of half the above amount.

The table is to be used in connexion with paras. 11, 12, and 13, but is not applicable to deck erections provided for by para. 14.

Sub-para. (*e.*).—If the crew are not berthed in the bridge-house, and the arrangements to enable them to get backwards and forwards from their quarters are not satisfactory, an addition should be made to the freeboard of 1 per cent. of the moulded depth of the ship, except in cases where the well is 80 feet or more in length, or where the vessels are under 150 feet in length.

Sub-para. (*f.*).—The minimum freeing port area is to be as follows:—

SCALE OF FREEING PORT AREA.

Length of Bulwarks in "Well," in Feet.	Freeing Port Area on each side in Square Feet.
30	9·5
35	10·
40	10·5
45	11·
50	11·5
55	12·
60	12·5
65 and above, 1 square foot to each 5 feet length of bulwark.	

If the freeing port area is less than that stated above, an addition is to be made to the freeboard of 1 per cent. of the moulded depth.

The additional freeboard for North Atlantic winter is to be as follows:—

ADDITIONAL FREEBOARD FOR WINTER, NORTH ATLANTIC, FOR WELL-DECK VESSELS.

Length of Vessel.	Proportion of Length of Vessel over which Erections extend.				
	$\frac{60}{100}$	$\frac{65}{100}$	$\frac{70}{100}$	$\frac{75}{100}$	$\frac{80}{100}$
Feet.	Inches.	Inches.	Inches.	Inches.	Inches.
180	4	3½	3	2½	2
220	3½	3½	3	2½	2
260	3½	3	2½	2	2
300	3	3	2½	2	2

but the above addition should never be less than in the case of an awning-decked ship of the same dimensions.

Para. 12.—For vessels having no forecastle, but with the other deck erections prescribed in this paragraph, estimate the allowance for erections supposing there is a forecastle $\frac{1}{2}$th the length of the vessel, and deduct $1\frac{1}{2}$ times the allowance that would be made under para. 15 if the vessel were fitted with such a forecastle only.

This rule also applies to vessels having no forecastle, but with a bridge-house, as provided for in para. 13.

For lengths of erection covering $\frac{95}{100}$ths allow a deduction of $\frac{85}{100}$ths the difference of the freeboard.

For $\frac{9}{10}$ths allow a deduction of $\frac{8}{10}$ths; for $\frac{8}{10}$ths allow $\frac{7}{10}$ths.

For $\frac{7}{10}$ths allow a deduction of $\frac{6}{10}$ths, and for $\frac{6}{10}$ths allow $\frac{5}{10}$ths, the difference of the freeboards.

For erections which extend over less than $\frac{1}{10}$ths the length of the ship, the allowance is to be in proportion.

For instance, if $\frac{3}{10}$ths are covered, allow $\frac{3}{4}$ths of 33 per cent.

In the case of vessels under 15 ft. moulded depth, sub-paras. (*e.*) and (*f.*) of the preceding paragraph are to apply.

Paras. 12 *and* 13.—The allowance in a sailing ship for a bridge-house in addition to a poop or forecastle, or in addition to a forecastle only, is obtained by the rules laid down in paras. 12 and 13, as the case may be, and is calculated upon the difference between the freeboards of Tables A. and C., in other words, the allowance for a forecastle, bridge-house, and poop, or for a forecastle and bridge-house in a sailing ship, is the same as would be given for similar erections in a steamer of the same dimensions.

Para. 13.—When the combined length of the topgallant forecastle and bridge-house is $\frac{5}{10}$ths of the length of the ship, a deduction from the freeboard may be made of $\frac{37}{100}$ths, and this is the maximum deduction for this type of vessel.

For erections which extend over less than $\frac{3}{10}$ths of the length of the ship the allowance is to be in proportion.

For instance, $\frac{2}{10}$ths covered allow $\frac{2}{3}$rds of 25 per cent.

In all the rules governing the deductions to be made from the freeboard it is to be understood as follows:—When the topgallant forecastle is not closed by an efficient bulkhead at the after end the length is never to be estimated at a greater full value than $\frac{1}{8}$th the length of the ship, but any extension beyond this may be estimated at one-half the value. For instance, if a vessel 240 feet long has an open forecastle 80 feet long, its value for deductions is $30 + 25 = 55$ feet. When the topgallant forecastle has an efficient bulkhead with an elongation abaft that bulkhead not enclosed at the after end, the full value of the closed-in portion is to be estimated either as $\frac{1}{8}$th the length of the ship, or the entire length of the enclosed portion, whichever may be the greatest.

Open bridge-houses.—When the bridge-house extends from side to side of the ship its value for deductions must be considered on its merits, which will depend upon the security of all deck openings, doors, bunker lids or otherwise.

Where these are all properly protected and the alley-ways are open at both ends, one-half the length may be estimated as the value for deductions. Where in addition the fore end is enclosed by an efficient bulkhead $\frac{3}{4}$ths the length may be estimated as the value for deductions.

Bridge-houses in steamers not covering engines and boilers may have an allowance not exceeding that which would be given for half the length of a bridge-house of the same character covering engines and boilers.

Para. 14.—In the case of a vessel having a forecastle and raised quarter-deck, the latter of less than the usual height, the length of raised quarter-deck to be allowed should be in proportion to its height as compared with the standard height. Thus $\frac{\text{L} \times \text{H}}{4}$ = length allowed if the height is less than 4 feet.

When the combined length of the erections is $\frac{4}{8}$ths of the length of the vessel, deduct 10 per cent. of the reserve buoyancy or 12 per cent. of the freeboard required for the flush-decked vessel after correction for length;

When $\frac{1}{8}$th of the length of the vessel, deduct 4 per cent. of the reserve buoyancy, or 6 per cent. of the freeboard required for the flush-decked vessel after correction for length. In cases where less than $\frac{1}{8}$th of the length of the vessel is covered by erections the allowance should be in proportion to that given for erections covering $\frac{1}{8}$th of the length.

Para. 15.—When there is a poop only, the allowance is to be half of that which in this paragraph is given for a forecastle only of the same length. This is also applicable to a raised quarter-deck, subject to the modifications in the preceding note.

When the poop has no bulkhead, or the bulkhead does not extend across the vessel, one-half its length may be allowed, provided always proper freeing ports are fitted.

Para. 16. *Sheer.*—Sheer of a gradual character is to be defined as follows:—

At $\frac{1}{8}$th the length of the vessel from the stem or sternpost the sheer is to be 55 per cent. of the sheer at stem or sternpost; at $\frac{1}{4}$th the length from stem or sternpost 26 per cent., and at $\frac{3}{8}$ths the length 7 per cent. In cases where there is no forecastle the sheer is to be measured at the stem and sternpost, and corrections made for it in all respects as in the case of flush-decked vessels.

When the bridge-house is enclosed, the sheer should be taken at the ends and the freeboard corrected for sheer in estimating the allowance for erections. When the bridge-house is not enclosed at both ends, the sheer should be measured at $\frac{1}{8}$th the length of the vessel, from the stem or sternpost, and the freeboard should not be corrected for sheer in estimating the allowance for erections.

Sub-para. (*a.*).—Surveyors should note that clauses 11 and 12 apply either to vessels of the ordinary well-decked type or to vessels having a poop and forecastle with a disconnected bridge-house.

Sub-para. (*f.*).—In flush-deck vessels the total standard mean sheer means the sheer measured at the stem and sternpost. In vessels having poops and forecastles, it means the sheer measured at points distant $\frac{1}{8}$th of the vessel's length from stem and sternpost.

In vessels obtaining an allowance for deck erections under para. 11, where the sheer drops abaft amidships, the height of the raised quarter-deck is to be taken from the level of the top of the midship beam.

In applying the rule given in para. 16 (*d.*), the extent of the

depressed part of the sheer covered by deck erections is to be allowed for.

Table A.

The deductions for summer in vessels having deck erections is to be intermediate between those required by Tables A. and C. in proportion to the length of the ship covered by those erections.

Table B.

All vessels equal in strength to Lloyd's spar-decked rule, or which, although in excess of that rule, do not come up to Lloyd's requirements for ships of full scantlings to the upper deck are to be considered as spar-decked ships, the freeboard for which will vary with their strength.

When the height between decks is greater or less than 7 feet, the consequent modification in freeboard will vary from $\frac{1}{3}$rd to $\frac{2}{3}$rds the excess or deficiency of height, the exact proportion to depend upon the strength of the vessel.

In spar-decked vessels where the height between main and spar deck exceeds 7 feet, the numbers for scantlings should be found assuming the height between decks to be 7 feet; if both these numbers are in the same grades as the actual scantling numbers of the vessel, the correction for height between decks is to be $\frac{1}{3}$rd of the excess of height above 7 feet. If both the scantling numbers so found are in higher grades than those of the actual vessel, $\frac{2}{3}$rds of the excess of height is to be added, and if either one of these scantling numbers is in a higher grade, $\frac{1}{2}$ of the excess of height is to be added. The same principle will apply in cases where the height between decks is less than 7 feet.

Since the freeboard is measured from the spar deck, it will be increased if the 'tween deck height is more, and decreased if it is less, than 7 feet.

In computing the freeboard of spar-decked vessels having scantlings in excess of Lloyd's requirements, a comparison is to be made between their scantlings, the scantlings of vessels of the same dimensions classed 100 A built to the three-decked rule, and

of vessels built to the 100 A spar-decked rule, and the freeboard is to be proportionate between that given in Table A. and that given in Table B., after deducting 12 per cent. from the former; but in no case must the freeboard so assigned be less than that provided in Table A. for a vessel of the same dimensions, sheer, and camber, or round of beam, and deck erections.

In the comparison of scantlings and assignment of freeboard to spar-decked vessels having scantlings in excess of Lloyd's requirements, the following method is to be adopted:—

1. The difference between the freeboard by Table A. (less 12 per cent.) and that by Table B. to be divided by five, $\frac{3}{5}$ths of it being considered with reference to the longitudinal strength, and $\frac{2}{5}$ths of it with reference to the transverse strength, these allowances to be the maximum deduction on each account.

2. In the comparison of steel ships, notwithstanding the general reduction of 20 per cent. for steel, as compared with iron thicknesses, outside plating in the way of the double bottoms is not to be further reduced by $\frac{1}{20}$th unless its thickness is $\frac{11}{20}$ths or over. No reduction is to be made in any case unless there are floors connected with every frame.

3. In the calculation of strength, the following method is to be adopted:—

(*a.*) Thin iron or steel plating in decks and the inner plating of double bottoms are to have their sectional area reduced for the purpose of the strength calculation as follows:—

Thickness in 16ths or 20ths	-	5	6	7	8	9
Multiplier	-	-	·4	·6	·7	·9	1

(*b.*) A deduction of $\frac{1}{4}$th is to be made for rivet holes in steel, and $\frac{1}{8}$th in iron for the parts in tension.

(*c.*) Iron or steel decks which cover not less than $\frac{3}{5}$ths of the midship length of the vessel are to be considered in the calculation just as they would be if of the full length.

(*d.*) Wood weather decks, if continuous throughout the midship portion of the ship, are to be considered as equivalent to steel of $\frac{1}{25}$th the sectional area of the wood.

(*e.*) For the purpose of comparison of strength, the breadth of the hatchways in the standard vessel shall be deemed to be $\frac{1}{3}$rd the breadth of the deck, and the tie-plates should be assumed to be fitted at the side of the hatchways.

Table C.

All vessels equal in strength to Lloyd's awning-decked rule, or which, although in excess of that rule, do not come up to Lloyd's requirements for a spar-decked vessel, are to be considered as awning-decked vessels, the freeboard of which will vary with their strength.

No modification is necessary in respect of the height of 'tween decks of awning-decked vessels.

In computing the freeboard for awning-decked vessels having scantlings in excess of Lloyd's requirements, a comparison is to be made between their scantlings, the scantlings of vessels of the same dimensions built to the 100 A spar-decked rule, and of vessels built to the 100 A awning-decked rule, and the freeboard is to be proportionate between that given in Table B. and that given in Table C.

In vessels where the superstructure is of less strength than that required for the 100 A awning-decked class, additions are to be made to the freeboard in the same proportion.

The freeboard of awning-decked vessels of the highest class of less than 14 feet moulded depth is to be arrived at as follows:—

Ascertain the freeboard by Table A. for a vessel of the same moulded depth to main deck, and to reduce this by $\frac{1}{12}$th the moulded depth, the result is the freeboard for awning-decked vessel. The correction for length is to be $\frac{5}{10}$ths of an inch for 10 feet, and the deduction for summer voyages 2 inches, and the addition for North Atlantic winter 2 inches.

In the comparison of scantlings and assignment of freeboard to awning-deck vessels having scantlings in excess of Lloyd's requirements, the method of procedure to be similar to that stated above for spar-deck vessels having scantlings in excess of those provided by the spar-decked rule.

Table D.

Sailing vessels classed A (black) in Lloyd's Register are to be regarded as first-class ships in applying the tables.

Hard wood ships, *i.e.*, other than fir or pine, classed A (red) in Lloyd's are to have their freeboards by the tables increased by 8 per cent.

Hard wood ships classed Æ in Lloyd's are to have their freeboards by the tables increased 15 per cent.

Hard wood ships without class are to have their freeboards by the tables increased by 20 per cent., unless opened out for survey, when their freeboards will depend upon their condition.

Soft wood ships will require to have their coefficient of fineness modified in respect of the excess of the registered breadth caused by the extra thickness of side. That for hard wood ships is already provided for in the tables.

Soft wood ships classed A (red) in Lloyd's are to have their freeboards by the tables increased 10 per cent.

Soft wood ships classed Æ in Lloyd's are to have their freeboards increased 20 per cent.

Soft wood ships without class are to have their freeboards by the tables increased 25 per cent., unless opened out for survey, when their freeboards will depend upon their condition.

Iron and steel sailing vessels having a greater rate of rise of floor than $1\frac{1}{2}$ inches per foot of half breadth, may have the moulded depth to be used with the tables reduced by half the difference between the total rise of floor at the half breadth and the total rise at the standard rate of $1\frac{1}{2}$ inches per foot; $2\frac{1}{2}$ inches per foot of half breadth is to be the maximum rate of rise on which an allowance is to be made. When the reserve buoyancy is calculated, the percentage taken shall be that corresponding to the depth reduced as above, but in no case shall the freeboard be less than that given in the top line of Table D. for such percentage. Whichever method be adopted the correction for length is to be applied in relation to the reduced moulded depth.

TURRET DECK STEAMERS.

RULES TO REGULATE THE DEPTH OF LOADING OF TURRET DECK VESSELS AND VESSELS OF SIMILAR TYPES.

The following agreement has been arrived at by the Conference of the Representatives of the Board of Trade, Lloyd's Register, the British Corporation, and Bureau Veritas:—

1. A "turret" is a strongly constructed continuous erection at the middle line of a vessel, forming with the main or harbour deck an integral part of the hull, and of a breadth not exceeding six-tenths the greatest breadth of the vessel.

2. The freeboard, calculated according to the rule given, is in consideration of the turret being continuous. Where the turret is separated within the six-tenths length amidships, additional strength will be required to compensate for this.

3. Hatch coamings at least 2 ft. high, and casings to engine and boiler openings at least 4 ft. 6 in. high, to be fitted above the "turret" deck.

4. The volume of the turret to be estimated from a normal beam line drawn through the point where a vertical line at the quarter breadth of vessel cuts the upper surface of the vessel's deck. Where the turret is nearly one-half the breadth of the vessel, and its transverse section is of rounded form at its base, the base line of the turret to be drawn through the point where the vertical line at the quarter breadth cuts the upper surface continued in the same curve as the normal line of beam.

5. The reserve buoyancy required by the tables to be estimated by taking 60 per cent. of the volume of the turret. The height of the turret allowed for is not to exceed 25 per cent. of the moulded depth.

6. The moulded depth of the vessel to be taken to be the depth at side from the beam line, as before defined, to the top of the keel.

7. If a vessel has sheer, to determine the volume of the turret, the turret base line to be drawn at each section as described above. At the extreme fore-end of the vessel the base of the turret to be parallel to the turret deck.

8. No allowance shall be made for any erection above the turret except in respect of either a forecastle or poop, or both of them, provided that such allowance for poop or forecastle shall not exceed that due to a poop or forecastle equal to one-eighth of the length of the ship. The allowance to be in proportion to its length and the breadth as compared with the breadth of the ship at the after-end of the forecastle, or fore-end of the poop.

9. The transverse and longitudinal strength of the vessel to be regulated by that required for a "three-deck" or "spar-deck" vessel of the same length, breadth, moulded depth, and co-efficient of fineness.

10. Where a wood lower deck is required for the standard vessel, and the same is dispensed with, compensating strength must be furnished.

11. If the frame spacing be increased one-fourth, the thickness of all the plating, excepting garboard and sheerstrakes, should be increased by one-twentieth of an inch over the thickness required in the standard ship. Other increases in spacing should be dealt with in the same proportion.

12. Should a vessel be constructed with a turret exceeding six-tenths the breadth of the vessel, or should the centre line of disc when ascertained reach a point above the junction of the vertical side with the rounded gunwale, full particulars and calculations with the proposed assignment to be submitted to the Board of Trade before freeboards are assigned.

13. The freeboards in the certificates issued to be set off in feet and inches from the line of the turret deck.

BOARD OF TRADE.

December, 1898.

A 2157

Memorandum

The modifications made in the Tables of Freeboard in accordance with the recommendations contained in the Report of the recent Load Line Committee and approved by the Board of Trade, are as follows:-

(I) Winter North Atlantic Freeboard

The footnote to Tables A. B. & C. regarding the additional freeboard for Winter North Atlantic voyages has been altered so that vessels over 330 feet in length are no longer required to have the additional freeboard, and those up to and including 330 feet in length are only required to have an addition of two inches to their summer winter load line for voyages during the winter months between Mediterranean and European Ports and Eastern Ports in North America North of Cape Hatteras.

The footnote to Table D. has also been altered so that sailing vessels are now only required to have an additional freeboard of three inches when engaged in the voyages mentioned above.

The Table applicable to well deck vessels in the Memorandum of Explanatory Notes on the Tables of Freeboard has also been modified

(See p. 67)

(2) Extension of Table A.

Table A has been extended so as to provide for the assignment of freeboard to vessels up to and including a moulded depth of 50 feet.

(3) Allowance for steam vessels navigating inland waters or rivers.

When a stretch of such water has to be traversed such deeper loading will now be permissible as may be due to the weight of fuel required for consumption between the ports of departure and the open sea (See paragraph 20, page 20). This is equally applicable to Tables A, B, & C.

(4) Deductions from Reserve Buoyancy on account of deck erections.

The following addition has been made to paragraph 14, page 16, respecting these deductions:

"It is to be understood that the deductions under this paragraph are never to exceed those granted under paragraph 12 for the same proportion of length covered by poop, bridge house and top gallant forecastle."

(5) Memorandum of Explanatory Notes on the application of the Tables of Freeboard.

Besides the modification of the Table respecting the additional freeboard for well deck vessels for Winter North Atlantic Voyages

voyages referred to above, paragraph 12 has been modified so as to include the following:

"For lengths of erection covering $\frac{95}{100}$ ths, allow a deduction of $\frac{95}{100}$ ths the difference of the freeboard. For $\frac{9}{10}$ ths, allow a deduction of $\frac{9}{10}$ ths for $\frac{8}{10}$ ths, allow $\frac{1}{10}$ ths. (See page 68)

(6) Tunnel deck steamers

The rules under which assignments of freeboards are made to these vessels have been revised giving them a larger allowance on account of their special construction. The revised Rules are printed at page 75.

Board of Trade,
3rd January 1894

INDIA OFFICE,

REVENUE,

No.21.

LONDON, 26th JANUARY 1899.

TO HIS EXCELLENCY THE RIGHT HONOURABLE THE GOVERNOR GENERAL OF INDIA IN COUNCIL.

My Lord,

I forward, for such action as may be necessary, 5 copies of Instructions to Board of Trade Surveyors containing the Tables of Freeboard modified in accordance with the recommendations made in the Report of the Departmental Committee which recently investigated the question of the Winter North Atlantic Load Line, and other matters in connection with the freeboard of vessels. A copy of a memorandum giving particulars of the modifications is also enclosed.

2. I am informed by the Board of Trade that the various authorities entrusted with the assignment of load lines to vessels in this country are now acting upon these modified Tables.

I have, &c.,

(Signed.) George Hamilton,

Indexed.

No. 1762-S.R.

GOVERNMENT OF INDIA.

FINANCE AND COMMERCE DEPARTMENT.

Simla, the 21st *April* 1899.

Read-

Despatch from Her Majesty's Secretary of State for India No.21 Revenue, dated the 26th January 1899.

Ordered that a copy of the despatch and of its enclosures, be forwarded to the Governments of Madras, Bombay, Bengal and Burma for such action as may be considered necessary.

Asstt. Secy. to the Govt. of India.

UNDER SECRETARY
21 APL 99
PUBLIC WORKS DEPT.