

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having *one deck steel and shell deck wood sheathed.*
Shell deck

(Type of Superstructures.)

Port of Survey *Newcastle N.S.W.*Date of Survey *22nd April 1932*Name of Surveyor *Jas. C. Criswell*
*S. M. Hughes*Particulars of Classification *+100 A1*
still deck with free-
running vegetable oil on deck

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

*HAIRNBANK**BRITISH**148.867**5378*
*per R.O.L. 3-2-56**1926-7*Moulded Dimensions: Length *420.1'* Breadth *53.9'* Depth *29.17'*Moulded displacement at moulded draught = 85 per cent. of moulded depth *12347* tonsCoefficient of fineness for use with Tables *.773*

Depth for Freeboard (D)

Moulded depth ... *29.17'*Stringer plate ... *0.03'*

Sheathing on exposed deck

 $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = *29.20'*

Depth correction

(a) Where D is greater than Table depth
(D - Table depth) R = $(29.20 - 27.97) \times 3 =$ (b) Where D is less than Table depth (if allowed)
(Table depth - D) R =

If restricted by superstructures

Round of Beam correction

Moulded Breadth (B) *53.9'*Standard Round of Beam = $\frac{B \times 12}{50} = 12.9"$ Ship's Round of Beam = *12.13"*Difference *0.77"*

Restricted to

Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = 0.16'$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<i>24'</i>	<i>24'</i>	<i>8.56'</i>		<i>24'</i>
" overhang ...	<i>23.54'</i>	<i>23.54'</i>	<i>8.25'</i>		<i>23.54'</i>
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	<i>349.95'</i>	<i>349.95'</i>	<i>8.56'</i>		<i>349.95'</i>
" overhang aft ...	<i>390.71'</i>	<i>390.71'</i>	<i>8.25'</i>		<i>390.71'</i>
" overhang forward ...					
" ele enclosed ...	<i>41'</i>	<i>41'</i>	<i>8.56'</i>		<i>41'</i>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...	<i>52.35'</i>	<i>52.35'</i>	<i>8.25'</i>		<i>52.35'</i>
" " forward ...	<i>419.50'</i>	<i>419.50'</i>	<i>8.25'</i>		<i>419.50'</i>
Total ...	<i>420.1'</i>	<i>420.1'</i>			<i>420.1'</i>

Standard Height of Superstructure *7.6'*

" " R.Q.D. ...

Deduction for complete superstructure *42"*Percentage covered $\frac{S}{L} = 100\%$ " " $\frac{S_1}{L} = 100\% 99.37$ " " $\frac{E}{L} = 99.73 99.37$ Percentage from Table, Line A.
(corrected for absence of forecastle (if required)) *95.77*
*99.22*Percentage from Table, Line B.
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = *41.68. 41.48"*

SHEER CORRECTION.

Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
A.P. ...	<i>52</i>	1	<i>52.00</i>	<i>48.00</i>	<i>57.00</i>	1	<i>57.00</i>
"	<i>51.95</i>		<i>51.95</i>	<i>47.85</i>	<i>44.25</i>		<i>44.25</i>
1/4 L from A.P. ...	<i>23.14</i>	4	<i>92.56</i>	<i>16.5</i>	<i>25.35</i>	4	<i>101.44</i>
"	<i>23.15</i>		<i>92.48</i>		<i>16.5</i>		<i>66.0</i>
1/2 L " ...	<i>5.72</i>	2	<i>11.44</i>	<i>1.</i>	<i>6.27</i>	2	<i>12.54</i>
"	<i>5.71</i>		<i>11.42</i>		<i>6.27</i>		<i>2.0</i>
Amidships ...	<i>0</i>	4	<i>166.00</i>	<i>0</i>	<i>14.19</i>	4	<i>112.80</i>
"	<i>11.43</i>		<i>0</i>		<i>14.19</i>		<i>28.38</i>
3/4 L from F.P. ...	<i>11.44</i>	2	<i>22.88</i>	<i>17.25</i>	<i>15.07</i>	2	<i>30.08</i>
"	<i>11.44</i>		<i>22.88</i>		<i>15.07</i>		<i>30.08</i>
1/4 L " ...	<i>46.24</i>	4	<i>184.96</i>	<i>54.75</i>	<i>57.40</i>	4	<i>229.60</i>
"	<i>46.25</i>		<i>185.12</i>		<i>47.63</i>		<i>190.62</i>
F.P. ...	<i>103.90</i>	1	<i>103.90</i>	<i>120.00</i>	<i>129.00</i>	1	<i>129.00</i>
"	<i>104.00</i>		<i>104.00</i>	<i>118.6</i>	<i>103.09</i>		<i>103.09</i>
Total ...			<i>467.57</i>	<i>467.57</i>	<i>467.57</i>		<i>467.57</i>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = .444$ $\frac{90.39}{18} (.75 - .50) = -1.26$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *29.20'*
Summer freeboard = *3.9'*
Moulded draught (d) = *25.3'*

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = *6 1/2"*

Addition for Winter North Atlantic Freeboard (if required =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 12676$

Tons per inch immersion at summer load water line

 $T = 45.56$ Deduction = $\frac{\Delta}{40T}$ inches*7"*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

Depth Correction ... *3.69*Deduction for superstructures ... *41.68*Sheer correction ... *1.26*

Round of Beam correction ...

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

Summer Freeboard = *44.45*

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ... *13 1/2"*Fresh Water Line " " " " *7"*Tropical Line " " " " *6 1/2"*Winter Line below " " " " *6 1/2"*Winter North Atlantic Line " " " " *6 1/2"*Tropical Fresh Water Freeboard ... *2'-6 1/2"*Fresh Water " " " " *3'-0"*Tropical " " " " *3'-1"*Winter " " " " *4'-2"*Winter North Atlantic " " " " *4'-2"*

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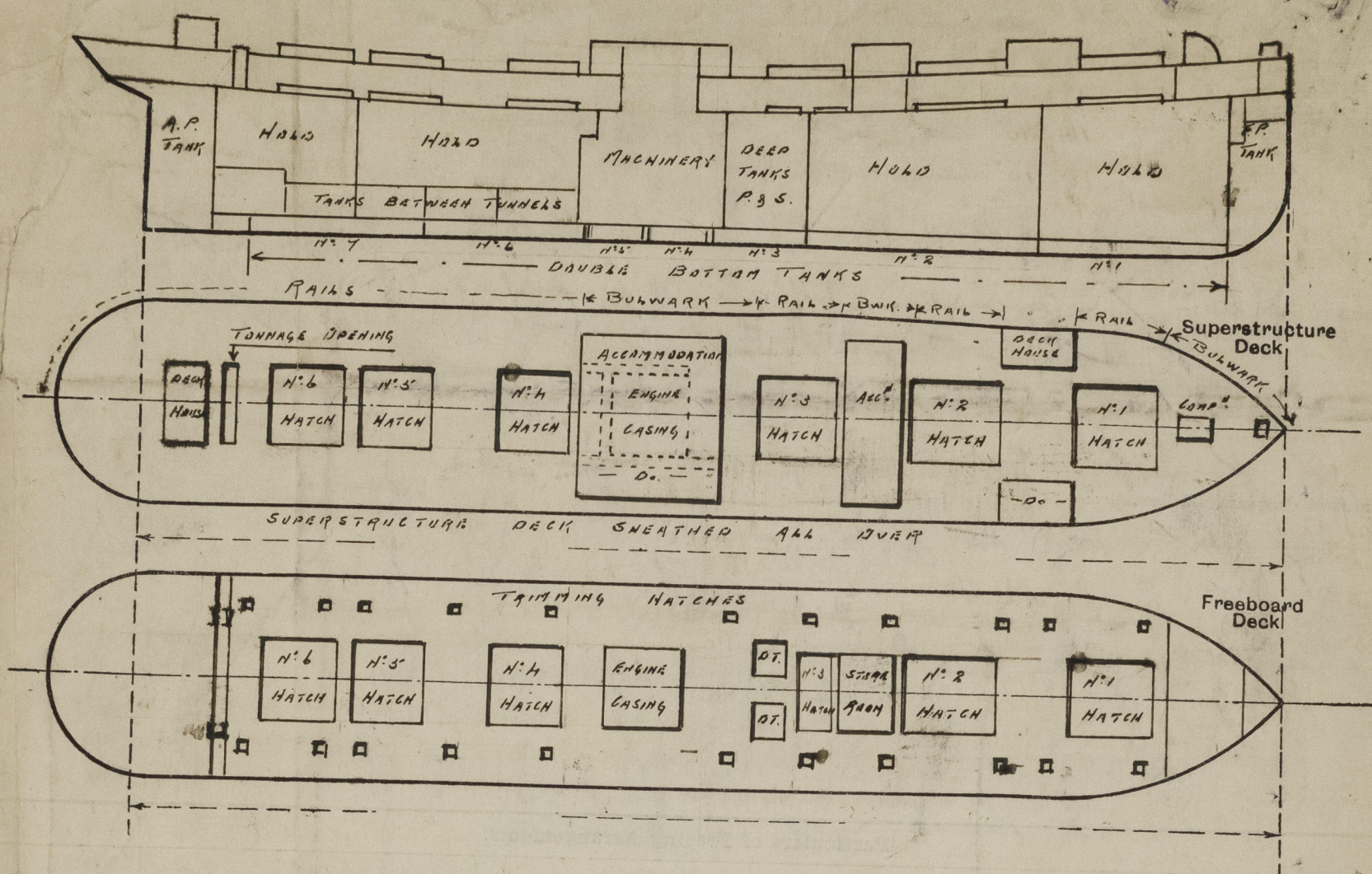
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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship, are to be shown on the following sketches:—



State any special features in the construction of the ship:—
Hulls of the world.

Vessel engaged in general cargo trade in all

Tonnage Opening aft—Cammings of bulb angle 7" above wood deck, fitted with wood hatch covers $2\frac{1}{2}$ inches in thickness, secured from below by hemp lashing.

Trimming Hatches fitted on freeboard deck as shown on plan, size 3'0" by 2'4 $\frac{1}{2}$ ". Cammings of 9" x 3 $\frac{1}{2}$ " x .43" bulb angle. Wood hatch covers $2\frac{1}{2}$ inches thick. Cleats, battens and tarpaulins as on main hatches. ✓

Trimming hatches for deep tanks 2'10 $\frac{1}{2}$ " by 2'7". Cammings 6 inches high .5" thick angles top and bottom 3 $\frac{1}{2}$ " x 3" x .5". Steel plate covers securely bolted. ✓

Hatch to Fore Peak. 3'0" by 3'0". Camming 30" high, .33" thick. $2\frac{1}{2}$ " wood hatch covers with cleats, battens and tarpaulins. ✓

Double Bottom Tanks. N° 2, 3, 4, 5, and 6 tanks are subdivided. ✓

Tunnel Tanks. The space between the fore and starboard tunnels forms four tanks for oil fuel or water ballast. ✓

Machinery Casings on freeboard deck are wholly protected by a substantial superstructure closed by weather tight doors at both ends. ✓

No openings in ship's sides below freeboard deck except scufflers from shelter truss decks, these fitted with efficient storm valves. ✓

Builder's name and yard number Harland and Wolff Ltd. Glasgow. N° 6796.

Names of sister ships Alynbank, Bichbank, Cedarbank, Clydelbank, Combibank, Elmbank, Forrestbank, Glenbank, Inverbank, Larchbank, Livenbank, Myrtlebank, Oakbank, Olivibank, Sfybank, Owners Bank Line Ltd. A. Weir and Co. Managers. Springbank, Weirbank.

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