

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Enclosed Poop, Bridge and Forecastle.
(Complete Superstructure vessel)
(Type of Superstructures.)

Port of Survey Newcastle N.S.W.

Date of Survey 27 & 28-12-35

Name of Surveyor E.M. Hughes

Particulars of Classification ÷ 100A1
Shelter Deck with Freeboard.
SS. NSW. No. 3-10.34.

Ship's Name " IRON KNOB "	Nationality and Port of Registry Br. Melbourne	Official Number 128793 137229	Gross Tonnage 9. 334	Date of Build 1922-6. 1923-3
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Moulded Dimensions: Length **330.5'** Breadth **47.75'** Depth **26'-1"**
Moulded displacement at moulded draught = 85 per cent. of moulded depth **7868** tons
Coefficient of fineness for use with Tables **.787**

<p>Depth for Freeboard (D)</p> <p>Moulded depth 26.08</p> <p>Stringer plate42" .03</p> <p>Sheathing on exposed deck Poep, 2 1/2" wood.</p> <p>$T \left(\frac{L-S}{L} \right) =$</p> <p>Depth for Freeboard (D) = 26.11</p>	<p>Depth correction</p> <p>(a) Where D is greater than Table depth (D - Table depth) R = (26.11 - 22.03) x 2.542 = +10.37</p> <p>(b) Where D is less than Table depth (if allowed) (Table depth - D) R =</p> <p>If restricted by superstructures</p>	<p>Round of Beam correction</p> <p>Moulded Breadth (B) 47.75'</p> <p>Standard Round of Beam = $\frac{B \times 12}{50} =$ 11.56"</p> <p>Ship's Round of Beam = 12"</p> <p>Difference .54</p> <p>Restricted to</p> <p>Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{.54}{4} \times .0073 = .001$</p>
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poep enclosed ...	28'-0"	28.00	7'-1 1/2"	✓	28.00
" overhang ...	1'-0"	.50			.50
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...	297.5'	297.50	7'-1" - 7'-6 3/4"		297.50
Trunk aft ...					
" forward ...					
Tonnage opening aft ...	4'-0" x 20' = 2.09				2.09
" forward ...					
Total ...	330.50	328.09			328.09

Standard Height of Superstructure **6.805'**

" " R.Q.D. ✓

Deduction for complete superstructure **37.37**

Percentage covered $\frac{S}{L} = 100.00$

" " $\frac{S_1}{L} = 99.27$

" " $\frac{E}{L} = 99.27$

Percentage from Table, Line A. **99.10**
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. ✓
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required) ✓

Deduction = **37.37 x .991 = -37.03.**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	43.05	1		43.05	+9.08	71.83	1		43.05
1/4 L from A.P. ...	19.16	4		76.64	11"	20.08	4		76.64
1/2 L " ...	4.74	2		9.48	0	7.90	2		9.48
Amidships ...		4			0		4		
3/4 L from F.P. ...	9.48	2		18.96	0	9.08	2		18.16
1/4 L " ...	38.32	4		153.28	21 1/2"	30.58	4		122.32
F.P. ...	86.10	1		86.10	96 3/4"	105.83	1		105.83
Total ...				387.51	+9.08				375.48

Mean actual sheer aft = **Even**
Mean standard sheer aft =

Mean actual sheer forward = **Deficient**
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = } C.S.S.
" " aft of " = }

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{12.03}{18} \times .25 = +.17$

If limited on account of midship superstructure. ✓

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

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Depth to Freeboard Deck = 26.11</p> <p>Summer freeboard = 2.39</p> <p>Moulded draught (d) = 23.72</p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 5.93 = 6</p> <p>Addition for Winter North Atlantic Freeboard (if required) =</p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line</p> <p>$\Delta =$ 8556</p> <p>Tons per inch immersion at summer load water line</p> <p>$T =$ 32.58</p> <p>Deduction = $\frac{\Delta}{40 T}$ inches = 6.57 = 6 1/2</p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient $\frac{.787 + .68}{1.36} = \frac{1.467}{1.36} =$</p> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td>10.37</td> <td></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td></td> <td>37.03</td> </tr> <tr> <td>Sheer correction ...</td> <td>0.17</td> <td></td> </tr> <tr> <td>Round of Beam correction ...</td> <td></td> <td></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td></td> <td></td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td></td> <td></td> </tr> <tr> <td></td> <td>10.54</td> <td>37.03</td> </tr> <tr> <td>Summer Freeboard =</td> <td colspan="2">28.67</td> </tr> </table>		+	-	Depth Correction ...	10.37		Deduction for superstructures ...		37.03	Sheer correction ...	0.17		Round of Beam correction ...			Correction for Thickness of Deck amidships ...			Other corrections, scantlings, etc. ...				10.54	37.03	Summer Freeboard =	28.67		<p>51.13</p> <p>55.16</p> <p>87.8</p> <p>13-2-36</p>
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Ward~~ Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ...	12 1/2 3/4	Tropical Fresh Water Freeboard ...	1'-4 1/4"
Fresh Water Line " " ...	6 1/2 1/5	Fresh Water " " ...	1'-10 1/4"
Tropical Line " " ...	6 1/2 1/2	Tropical " " ...	1'-10 3/4"
Winter Line below " " ...	6 1/2	Winter " " ...	2'-10 3/4"
Winter North Atlantic Line " " ...		Winter North Atlantic " " ...	

18 FEB 1936

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RECEIVED 18 MAY 1936

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
<div> <div>Forward Deck</div> <div>Superstructure Deck</div> </div>										
Description of Hatchway	1	2	3	4	5	1	2	3	4	5
Dimensions of Hatchway	24'x23'	33'-4 1/2"	11'-1 1/2"	33'-4 1/2"	24'-3"	24'x23'	33'-4 1/2"	8'-6"	33'-4 1/2"	22'-3"
COAMINGS	Height above Deck	9"	9"	9"	9"	30"	30"	30"	30"	30"
	Thickness	.44"	.44"	.44"	.44"	.60"	.60"	.60"	.60"	.60"
	Sides	None	None	None	None	.40"	.40"	.40"	.40"	.40"
	Stiffeners	None	None	None	None	1F, 1A.	1F, 1A.	1F, 1A.	1F, 1A.	1F, 1A.
HATCH BEAMS	Number	4	5	1	5	4	5	1	5	4
	Spacing	4'-10"	5'-7"	5'-6"	5'-7"	4'-10"	5'-7"	4'-3"	5'-7"	4'-10"
	Scantling and Sketch	21"x.38	21"x.38	16"x.38	21"x.38	21"x.38	21"x.38	16"x.38	21"x.38	21"x.38
	Bearing Surface	3 1/2"x3 1/2"	3 1/2"x3 1/2"	3 1/2"x3 1/2"	3 1/2"x3 1/2"	3 1/2"x3 1/2"	3 1/2"x3 1/2"	3 1/2"x3 1/2"	3 1/2"x3 1/2"	3 1/2"x3 1/2"
FORE AND AFTERS	Number	None	None	None	None	None	None	None	None	None
	Spacing	None	None	None	None	None	None	None	None	None
	Unsupported Lengths	None	None	None	None	None	None	None	None	None
	Scantling and Sketch	None	None	None	None	None	None	None	None	None
HATCH COVERS	Material	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood
	Thickness	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	How fitted	F & A	F & A	F & A	F & A	F & A	F & A	F & A	F & A	F & A
	Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"
Spacing of Cleats	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
Number of Tarpaulins	1	1	1	1	1	1	1	1	1	1

*Are wood fore and afters steel shod at all bearing surfaces? --
Are battens and wedges efficient and in good condition? Yes
Are tarpaulins in good condition and in accordance with rule requirements? Yes
Are lashings provided in accordance with rule requirements? Yes, on superstructure deck.

Particulars of fiddle, funnel and ventilator coamings:— One casing in superstructure deck. Engine casing fitted with strong steel skylights and fiddle gratings with efficient hinged steel storm doors. Funnel casing full height of funnel. Strongly built machinery space ventilators passing inside of casing.

Particulars of Flush Bunker Scuttles:— None.

Particulars of Companionways:— One companionway to Crews accommodation aft, opening in deck 7'-0" x 4'-3", height 5'-9", opening in companion 4'-0" x 3'-4", sill 17", plating .32, angles 3" x 3" x .32 riveted to deck plating, fitted with 1 1/2" hinged hardwood doors which can be operated from both sides.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:— 2/20", 2/16", 1/12", 1/10", and 6/9" diam.. All coamings 36" high to deck plating and provided with wood plugs and canvas covers.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:— All swan neck type, one 4"/each to fore and after peaks height to openings 12"; 12/2", 4/2 1/2" and 2/3 1/2" diam. mild steel height to openings 10". Fitted with perforated roses, and canvas covers provided for all exposed air pipes.

Particulars of Gangway Cargo and Cooling Ports:— Two each side above freeboard deck, openings 5'-1 1/2" x 3'-4", frame on shell 10" x 3 1/2" channel, frame on door 3 1/2" x 3 1/2" x .5" angles, hinged steel doors with rubber joints and secured by two 6" x 3" channel strongbacks and four 1 1/2" screw fastenings.

Particulars of Scuppers and Sanitary Discharge Pipes — Scuppers:—Four each side in shelter tween decks and one in tonnage well, all 4" diam. with short open steel bends and provided with wood plugs as temporary closing appliances. All sanitary discharge pipes fitted with one automatic gun-metal storm valve, no discharges overboard from spaces below freeboard deck.

Particulars of Side Scuttles: All 10" diam. with gunmetal frames and hinged deadlights, no side scuttles below the freeboard deck.

Particulars of Guard Rails:— Guard rails forward and aft as shown on sketch, three bars 3'-4" in height. Bulwarks forward and amidships 3'-0" in height.

Particulars of Gangways, Lifelines, etc.:— Crew berthed aft. Complete superstructure vessel.

Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Tonnage						
After Well	5'-0"		26" x 14"	1	2.52 sq. ft.	
Forward Well						
State position of each freeing port. ... After Well:— 9" (E and A position and height above deck edge) Forward Well:— State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Hinged shutters and one horizontal bar. Additional area where sheer is less than standard.						

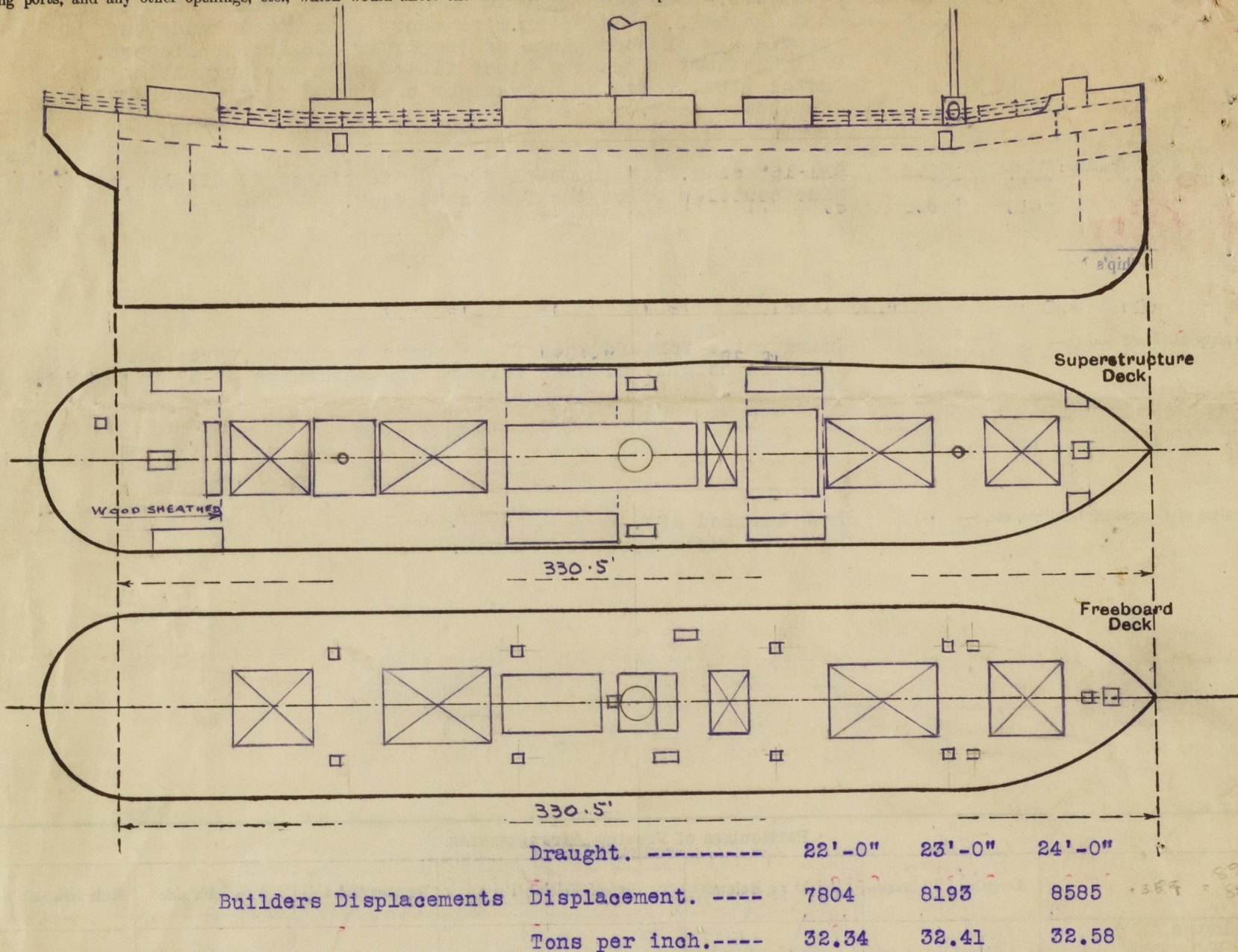
Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	.50	.32	4 x 3 x .38	45"	Bracketed at top.	None		7'-1 1/2"
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead	.38	.38	4 x 3 x .38	36"	None	54" x 36"	16"	7'-1 1/2"
Bridge, Forward Bulkhead								
Forecastle Bulkhead	.44	.38	4 x 3 x .38	35"	Bracketed at top.	None		7'-1"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	.32	.32	3 x 3 x .38	36"	None	57" x 24"	19"	7'-3"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	.44	.32	Stiffeners 6x3x.5" Webs 14"x.38 plate 3x3x.38 angles			54" x 24"	22"	7'-6 3/4"
Deckhouses on Flush Deck Ships								
Particulars of Closing Appliances (state if capable of being manipulated from both sides).								
Poop Bulkhead	No openings.							
Raised Quarter Deck Bulkhead	2 1/2" shifting boards in riveted channels full height of opening.							
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead	No openings.							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	1 1/2" hinged H.W. doors. Hinged steel doors, all of which can be manipulated from both sides.							
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Hinged steel doors which can be manipulated from both sides.							
Deckhouses on Flush Deck Ships								

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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 shewn on the following sketches:—



State any special features in the construction of the ship:— Sheer lines straight. Cargo vessel trading on the Australian coast, now surveyed afloat without including any portion of Special Survey.

Tonnage opening 4'-0" x 23', 9" B.A.coamings, 2½" wood covers on 3½" bearing, covers secured by hemp lashings. Breadth of vessel at tonnage opening 43'.

Bunker Hatch on casing on superstructure deck 17'-0" x 8'-0", 8" B.A.coaming, 2½" wood covers 3" bearing, one 7" x 3½" B.A.intermediate beam, cleats, battens and tarpaulins in order.

Hatches on superstructure deck:— 4'-0" x 4'-0" to forecastle 24" x .38 coamings, two bunker Hatches 7'-0" x 2'-8" with 30" x .44" coamings, 3'-0" x 2'-0" to transom space 8" B.A.coaming, all fitted with 2½" wood covers on 2½" bearing, cleats, battens and two tarpaulins.

Hatches on Freeboard Deck:— 4'-4" x 4'-4" to forepeak and 2'-3" x 2'-3" to chain locker with 3" x 3" x .38" angle coamings, 2½" wood covers on 2½" bearing, no battening arrangements, both forward of collision bulkhead. Two 5'-6" x 2'-6" bunker hatches 8" B.A.coamings, Bunker Hatch amidships 2'-6" x 1'-10" 9" B.A.coamings, ten trimming hatches 2'-6" x 2'-6" with 2½" x 2½" x .32" angle coaming all with 2½" wood covers on 2½" bearing and cleats, battens and tarpaulins.

Builder's name and yard number. Poole & Steele, No.20

Names of sister ships "IRON WARRIOR", "IRON MASTER"

Owners Broken Hill Pty.Co.Ltd..

Fee £ 14 : 14 : 0

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