

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <u>SYDNEY N.S.W.</u>
hav <u>Forecastle, Bridge, and Poop - One deck (Steel)</u>					Date of Survey <u>19th & 22nd July 1935</u>
(Type of Superstructures.)					Name of Surveyor <u>E. L. Cartwright</u>
Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build	Particulars of Classification <u>100 A1</u>
<u>S.S. "ERA"</u>	<u>BRITISH.</u> <u>MELBOURNE</u>	<u>132480</u>	<u>3148</u>	<u>1921-8</u>	
Moulded Dimensions: Length <u>330.1'</u> Breadth <u>48.45'</u> Depth <u>24.29'</u>					
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>7600</u> tons					
Coefficient of fineness for use with Tables <u>.801</u>					

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>24.29'</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(24.33 - 22.01) × 2.539 = +5.89</u>	Moulded Breadth (B) <u>48.75'</u>
Stringer plate <u>.46</u> ... <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>✓</u>	Standard Round of Beam = $\frac{B \times 12}{50} = 11.70$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>12.25'</u>
Depth for Freeboard (D) = <u>24.33</u>		Difference = <u>.55</u>
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.55}{4} \times .5184 = -.07$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed	31.41	31.41	4'-6"	✓	31.41	Standard Height of Superstructure <u>6.801</u>
" overhang	-	-	-	-	-	" " R.Q.D. <u>✓</u>
R.Q.D. enclosed	-	-	-	-	-	Deduction for complete superstructure <u>37.34</u>
" overhang	-	-	-	-	-	Percentage covered $\frac{S}{L} = 48.16$
Bridge enclosed	97.25	97.25	4'-6"	✓	97.25	" " $\frac{S_1}{L} = 48.16$
" overhang aft	-	-	-	-	-	" " $\frac{E}{L} = 48.16$
" overhang forward	-	-	-	-	-	Percentage from Table, Line A. <u>✓</u>
Fore enclosed <u>apm</u>	30.33	30.33	4'-6"	✓	30.33	(corrected for absence of forecastle (if required))
" overhang	-	-	-	-	-	Percentage from Table, Line B. <u>34.43</u>
Trunk aft	-	-	-	-	-	(corrected for absence of forecastle (if required))
" forward	-	-	-	-	-	Interpolation for bridge less than .2L (if required)
Tonnage opening aft	-	-	-	-	-	Deduction = <u>37.34 × .3443 = -12.85</u>
" forward	-	-	-	-	-	
Total	158.99	158.99	-	-	158.99	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	43.01	1		43.01	32.5"	32.5	1		32.5	Mean actual sheer aft = <u>95.12 ft standard</u>
$\frac{1}{2}$ L from A.P.	19.14	4		76.56	20.5"	20.5	4		82.0	Mean actual sheer forward = <u>Excess</u>
$\frac{2}{3}$ L "	4.73	2		9.46	5"	5.0	2		10.0	Mean standard sheer forward
Amidships	-	4		-	0	-	4		-	Length of enclosed superstructure forward of amidships = <u>>.14</u>
$\frac{2}{3}$ L from F.P.	9.46	2		18.92	10.25"	10.25	2		20.5	" " aft of " = <u>>.14</u>
$\frac{1}{2}$ L "	38.28	4		153.12	41.5"	41.5	4		166.0	
F.P.	86.02	1		86.02	90"	90.0	1		90.0	
Total				387.09					401.0	
Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{13.91}{18} \left(.75 - \frac{.2408}{.5092} \right) = -.39$										
If limited on account of midship superstructure. <u>✓</u>										If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. <u>✓</u>

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Fresh Deck (if required)	51.03
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{8014.68}{136} = 1.481$	55.57
Depth to Freeboard Deck =	$\Delta = 7530$	Depth Correction	5.89
Summer freeboard =	Tons per inch immersion at summer load water line	Deduction for superstructures	- 12.85
Moulded draught (d) =	T = 32.42	Sheer correction	- 0.39
Deduction for Tropical freeboard and addition for	Deduction = $\frac{\Delta}{40 T}$ inches	Round of Beam correction	- 0.07
Winter freeboard = $\frac{d}{4}$ inches =	= 5.81	Correction for Thickness of Deck amidships	-
Addition for Winter North Atlantic Freeboard (if required) =	= $5\frac{3}{4}$	Other corrections, scantlings, etc.	-
		5.89 13.31	- 7.42
		Summer Freeboard =	48.15

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, <u>Steel</u> , Deck: <u>3'-11 1/4"</u>			
Existing freeboard as reassigned, being more favourable than those computed under the Corporation regulations.	Tropical Fresh Water Line above Centre of Disc	9 3/4"	Tropical Fresh Water Freeboard
	Fresh Water Line " "	5 3/4"	Fresh Water " "
	Tropical Line " "	4"	Tropical " "
	Winter Line below " "	3 1/2"	Winter " "
	Winter North Atlantic Line " "	✓	Winter North Atlantic " "

EvaParticulars of fiddley, funnel and ventilator coamings :—

Particulars of Flush Bunker Scuttles:—

None

Particulars of Companionways :—

Particulars of Ventilators in exposed positions on freeboard and superstructure decks :—

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :—

Particulars of Gangway Cargo and Coaling Ports :—

None

One sanitary discharge each side from fore castle.
Two Scuppers each side in forward and after hulls. Two sanitary discharges each side amidships.
One sanitary discharge each side from poop accommodation.
No Scuppers fitted from spaces below the freeboard deck.
Two sanitary discharges 32" below freeboard deck.
All sanitary discharges fitted with one cast iron storm valve, single automatic type.

Particulars of Side Scuttles:
In Starboard:- 3--10" diam. port side, and 4--10" diam. Star^{board} side.
In Starboard:- 3--11" diam. port side, and 3--11" on Star^{board} side.
In Port:- 4--10" diam. port side, and 4--10" diam on Star^{board} side
 All sidelights of bronze, fitted with brized deadlights.
 No sidelights fitted below foreboard deck.

Particulars of Guard Rails:—

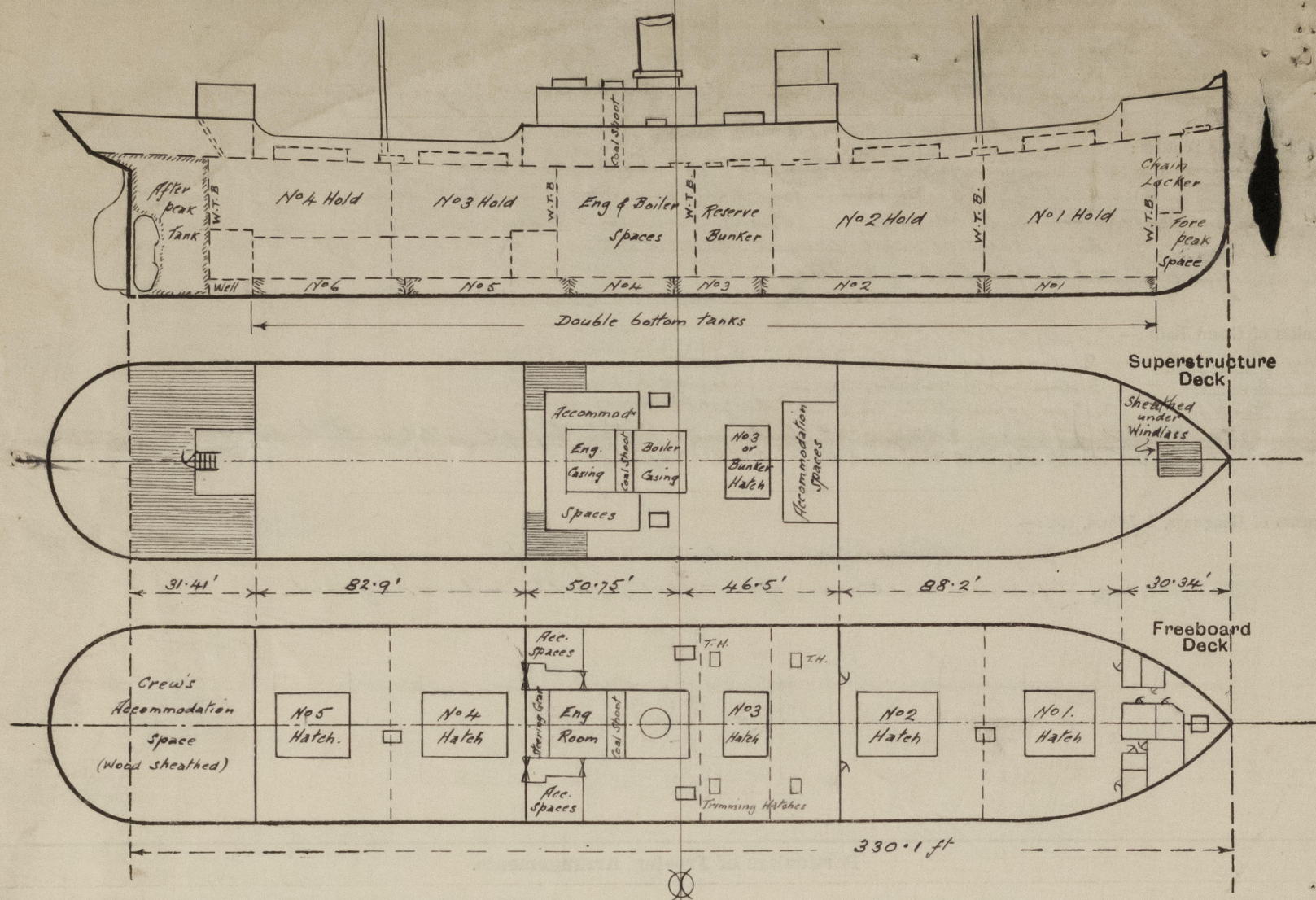
<u>On Encastle:</u> —	2 bar open rails, 36" in height.
<u>On Bridge:</u> —	3 bar open rails, 36" in height.
<u>On Roof:</u> —	2 bar open rails, 42" in height.
<u>In and after wells:</u> — Strong steel bulwarks, 40" in height, fitted with bulk plate stiffeners and legs riveted to deck, and spaced 5'-6" to 6'-0" apart.	

Crew's accommodation in poop.
Temporary lifelines erected in fore & after wells when required.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead875"	.875"	5"x2½"x.375" B.A.	30" x 34"	.375" Brackets at bottom only	None	"	4'-6"
Raised Quarter Deck Bulkhead ...	"	"	"	"	"	"	"	"
Bridge, After Bulkhead31"	.31"	3"x2"x.25" O.A.	24"	None	42"x54" p.r.s.	18"	4'-6"
Bridge, Forward Bulkhead34"	.34"	8"x3½"x.5" B.A.	24" x 29"	.4 Brackets at top & bottom	29½"x66" p.r.s.	18"	4'-6"
Forecastle Bulkhead31"	.31"	3"x3"x½" O.A.	28" x 32"	None	42"x90"	None	4'-6"
Trunk, Aft	"	"	"	"	"	"	"	"
Trunk, Forward	"	"	"	"	"	"	"	"
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	"	"	"	"	"	"	"	"
Exposed Machinery Casings on Superstructure Decks345"	.345"	3"x3"x.31"	36"	None	24"x60"	18"	4'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances31"	.31"	3"x3"x.31" at ends 3½"x3½"x.37" at sides	36" at ends 40" at sides	"	24"x59"	15"	4'-6"
Deckhouses on Flush Deck Ships ...	"	"	"	"	"	"	"	"

Poop Bulkhead	No openings	None
Raised Quarter Deck Bulkhead		
Bridge, After Bulkhead	Riveted channels with 3" shifting boards, full height of aperture	
Bridge, Forward Bulkhead	Strong hinged steel doors, secured by studs & dogs, operated from outside only (with rubber joints)	
Forecastle Bulkhead		None Open.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks		
Exposed Machinery Casings on Superstructure Decks		
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Hinged steel doors operated from both sides, one on each side to stokehold and one access door to engine room.	
Deckhouses on Flush Deck Ships	Hinged steel doors operated from both sides, one on each side to engine room enclosed in bridge section.	

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:—



Cargo vessel usually trading on the Australian Coast, now surveyed afloat without including any part of a Special Survey

State any special features in the construction of the ship:—

On Freeboard deck:— One steel escape hatchway in way of foremast from Nos 1 & 2 Holds, and one steel escape hatchway in way of mainmast from Nos 3 & 4 Holds with 30" coamings, 24" x 48", with steel hinged covers, rubber joints, secured by screws & wing nuts.

In Forecastle:— to chain locker & peak, one hatchway 36" x 48" with 9" x 3 1/2" x 4 1/2" B.A. coaming, fitted with 3" wood covers, 3" rests, cleats, battens, 2 tarpaulins, & locking bar.

In Bridge tween decks:— Trimming hatchways, one each side, to cross bunkers (after end of No 2 Hold, used as bunkers) 24" x 23" with 9" x 3 1/2" x 5" B.A. coamings, 3" wood covers, 3" rests, cleats, battens, and one tarpaulin. Escape hatches, 1 each side, 24" x 23", 9" x 3 1/2" x 5" B.A. coaming, 3" wood covers, 3" rests, cleats, battens, & 1 tarpaulin, to No 2 Hold. Trimming hatchways to side bunkers, one each side, 4'-1" x 2'-4" with 9" x 3 1/2" x 5" B.A. coamings, 3" wood covers, 3" rests, & cleats, battens, & one tarpaulin.

On Bridge deck:—

To bridge tween deck bunkers, one trimming hatchway each side, 8'-8" x 4'-6" with 18" steel coamings, 3/4" plate, 3" wood covers, 3" rests, cleats, battens, two tarpaulins, and locking bar.

On Poop deck:—

One hatchway to storeroom, almost rudder quadrant on starboard side 30" x 30" with 9" x 3 1/2" x 5" B.A. coaming, 3" wood covers, 3" rests, cleats, battens, and one tarpaulin.

On Machinery casing:—

One hatchway to bridge tween deck bunkers 4'-4" x 14'-0" with 9" x 3 1/2" x 5" B.A. coaming, 3" wood covers, 3" rests, fitted fore & aft, cleats, battens, & two tarpaulins.

Builder's name and yard number *W. Hamilton & Co. Ltd. Glasgow. No 381*

Names of sister ships

Owners *Australian Steamships Proprietary Ltd. Managing Agents:— Howard Smith Ltd.*

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