

28 APR 1932

Rpt. C.11.

Index No. 13432
(For London Office only.)Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD. 10.822
10.822

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <i>Belfast</i>
having <i>Forecastle, Bridge, Raised Quarter Deck, & Poop</i>					Date of Survey <i>April 1932</i>
(Type of Superstructures.)					Name of Surveyor <i>J.D. Philston</i>
Ship's Name <i>Balmarino</i>	Nationality and Port of Registry <i>British</i>	Official Number <i>108628</i>	Gross Tonnage <i>25.00</i>	Date of Build <i>1898-11</i>	Particulars of Classification <i>+100 A1</i>
Moulded Dimensions: Length <i>161.75</i> Breadth <i>24.46</i> Depth <i>12.5</i>					
Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>855</i> tons					
Coefficient of fineness for use with Tables <i>.694</i>					

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <i>12.5</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>(12.5 - 10.78) 1.244 = 2.18</i>	Moulded Breadth (B) <i>24.46</i> <i>25</i>
Stringer-plate <i>.04</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 6$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = $\frac{7}{100}$
Depth for Freeboard (D) = <i>12.54</i>		Difference <i>1.00</i>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) = .25(1 - .7434) = .064$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<i>14.5</i>	<i>14.50</i>	<i>5.0</i>		<i>14.50</i>	Standard Height of Superstructure <i>6.00</i>
" overhang ...						" " R.Q.D. <i>3.41</i>
R.Q.D. enclosed ...	<i>78.75</i>	<i>78.75</i>	<i>3.75</i>		<i>78.75</i>	Deduction for complete superstructure <i>22.145</i>
" overhang ...			<i>6.5</i>			Percentage covered $\frac{S}{L} = .7836$
Bridge enclosed ...	<i>7.0</i>	<i>7.00</i>	<i>6.7</i>		<i>7.00</i>	" " $\frac{S_1}{L} = .7434$
" overhang aft ...						" " $\frac{E}{L} = .7434$
" overhang forward ...	<i>16.18</i>	<i>14.84</i>	<i>6.5</i>		<i>14.84</i>	Percentage from Table, Line A. (corrected for absence of forecastle (if required))
F'cle enclosed ...	<i>26.5</i>	<i>5.16</i>	<i>6.75</i>		<i>5.16</i>	Percentage from Table, Line B. (corrected for absence of forecastle (if required)) <i>.6834</i>
" overhang ...	<i>10.32</i>					Interpolation for bridge less than 2L (if required)
Trunk aft ...						Deduction = <i>.6834 + 22.175 = 15.15</i>
" forward ...						
Tonnage opening aft ...						
" " forward ...						
Total ...	<i>126.45</i>	<i>120.25</i>			<i>120.25</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<i>26.14</i>	1		<i>26.14</i>	<i>26.14</i>	<i>31.0</i>	1		<i>26.14</i>	Mean actual sheer aft =
$\frac{1}{8}$ L from A.P. ...	<i>11.65</i>	4		<i>46.60</i>	<i>8.795</i>	<i>13.80</i>	4		<i>46.60</i>	Mean standard sheer aft
$\frac{3}{8}$ L " ...	<i>2.88</i>	2		<i>5.76</i>	<i>1.497</i>	<i>3.41</i>	2		<i>5.76</i>	Mean actual sheer forward =
Amidships ...		4					4			Mean standard sheer forward
$\frac{5}{8}$ L from F.P. ...	<i>5.76</i>	2		<i>11.52</i>	<i>5.12</i>	<i>5.12</i>	2		<i>10.24</i>	Length of enclosed superstructure forward of amidships =
$\frac{7}{8}$ L " ...	<i>23.30</i>	4		<i>93.20</i>	<i>21.253</i>	<i>20.53</i>	4		<i>82.12</i>	L
F.P. ...	<i>52.35</i>	1		<i>52.35</i>	<i>51.0</i>	<i>51.0</i>	1		<i>51.00</i>	aft of " =
Total ...				<i>235.60</i>					<i>221.89</i>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{13.71}{18} (.75 - .3918) = +.27$

If limited on account of midship superstructure.

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft.

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient
<i>12.54 + 3.75</i>	$\Delta = 1022$	<i>.697 + .68 = 1.36</i>
Depth to Freeboard Deck = <i>16.29</i>	Tons per inch immersion at summer load water line	Depth Correction <i>2.18</i>
Summer freeboard = <i>4.12</i>	$T = 7.88$	Deduction for superstructures <i>15.15</i>
Moulded draught (d) = <i>12.14</i>	Deduction = $\frac{\Delta}{40 T}$ inches	Sheer correction <i>.27</i>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <i>3.04 = 3"</i>	<i>= 3.24</i>	Round of Beam correction <i>.06</i>
Addition for Winter North Atlantic Freeboard (if required) = <i>2"</i>	<i>= 3\frac{1}{4}"</i>	Correction for Thickness of Deck amidships <i>45.00</i>
		Other corrections, scantlings, etc.
		Summer Freeboard = <i>49.59</i>

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

Tropical Fresh Water Line above Centre of Disc ...	<i>5\frac{3}{4}"</i>	Tropical Fresh Water Freeboard ...	<i>4 - 1\frac{1}{2}"</i>
Fresh Water Line " " ...	<i>3\frac{1}{4}"</i>	Fresh Water " " ...	<i>3 - 7\frac{1}{4}"</i>
Tropical Line " " ...	<i>2\frac{1}{2}"</i>	Tropical " " ...	<i>3 - 10\frac{1}{4}"</i>
Winter Line below " " ...	<i>3"</i>	Winter " " ...	<i>3 - 11"</i>
Winter North Atlantic Line " " ...	<i>5"</i>	Winter North Atlantic " " ...	<i>4 - 4\frac{1}{2}"</i>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Description of Hatchway			Freeboard Deck	Raised Quarter Deck	To Bunker						
Dimensions of Hatchway			25'-2" x 13'	22'-0" x 13'	14'-2" x 5'-3"						
COAMINGS	Height above Deck	...	37"	31"	5" at sides 9" at centre						
	Thickness	Sides ... Ends ...	1/2" 1/2 x 3/8"	1/2" 1/2"	3/8" 2/8"						
	Stiffeners	...	9" x 1/2" thick T.B.A.	9" x 1/2" thick T.B.A.	✓						
	Brackets, Stays	...		✓	✓						
HATCH BEAMS	Number	...	2	2	✓						
	Spacing	...	max 10'-6" min 6'-8"	max 10'-6" min 4'-9"							
	Scantling and Sketch	...	plate 18 1/2" x 50" angles 3 1/2" x 3 1/2" x 100" solid half round iron 3" x 1 1/2" double	plate 18 1/2" x 50" angles 3 1/2" x 3 1/2" x 100" solid half round iron 3" x 1 1/2" double							
	Bearing Surface	...	2 1/2"	2 1/2"							
FORE AND AFTERS	Number	...	3	3	✓						
	Spacing	...	3'-3"	3'-3"							
	Unsupported Lengths	...	max 10'-1 1/2"	max 10'-6"							
	Scantling and Sketch	...	B = 7" D = 8" centre & side	B = 6 1/2" D = 7" centre & side							
	Bearing Surface	...	3" ends 7" full beam	3" ends 7" full beam							
HATCH COVERS	Material	...	Canadian Spruce	Canadian Spruce							
	Thickness	...	2 1/2"	2 1/2"	2 1/2"						
	How fitted	...	Transverse	Transverse	Forecraft						
	Bearing Surface	...	2 1/2"	2 1/2" full beam 2" forecraft	2 1/4"						
Spacing of Cleats			20"	20"	28"						
Number of Tarpaulins			2	2	2						
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>yes</i></p> <p>Are battens and wedges efficient and in good condition? <i>yes</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>yes</i></p> <p>Are lashings provided in accordance with rule requirements? <i>yes. Manila rope lashings</i></p>											

Particulars of fiddle, funnel and ventilator coamings:—

Funnel opening in casing top protected by steel cap.
 Fiddle openings protected by hinged steel covers.
 Engine room skylight of steel, strongly constructed, riveted to casing top.
 Stokerhold ventilators of steel, strongly constructed, riveted to casing top. ✓

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

On Freeboard deck forward below forecastle erection leading to crew's quarters below freeboard deck, companion of steel riveted to deck with hinged teakwood door 58" x 23" securing from both sides. Door sill 10 1/2" above wood deck.
 On Raised quarter deck leading to bridge space, companions of teakwood (port & starboard) top 3/4" thick, sides panelled 2 1/2" thick, hinged teakwood doors 47" x 23 1/2" securing from both sides. Door sill 14 1/2" above deck.
 On Poop deck to engine accommodation below poop deck, companion of steel bolted to deck, with hinged teakwood door panelled 1 1/2" thick securing from both sides.

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

On Freeboard deck forward to hold 1 coaming 9" dia x 3/8" thick x 42" high riveted to deck 5 dia approx. ✓
 On Raised quarter deck to hold 1 coaming 9" dia x 5/8" thick x 30 1/2" high riveted to deck 5 dia approx. ✓
 On Forecastle deck to crew space 1 coaming 8" dia x 3/8" thick x 18 1/2" high bolted to wooden deck with steel trunk below forecastle deck.
 * All supplied with wooden plugs & canvas covers. ✓

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

On Freeboard deck under forecastle erection to forepeak tank 3" dia, 10" above deck, 1 pipe.
 " " " to No 1 double bottom tank 2 air pipes 3" dia, 37" above deck.
 " " " port side in bridge space 1 air pipe 3 1/2" dia, 19" above deck. Fitted with wooden plug.
 " " " stbd side forward of bridge front 1 air pipe 3 1/2" dia, 113" above deck.
 On Poop deck to after peak tank 1 air pipe 1 3/4" dia, 30" above deck.
 " " " to transome space 1 air pipe 3" dia 10" above deck.
 * No closing appliances. ✓ *Canvas covers provided*

Particulars of Gangway Cargo and Coaling Ports:—

None.



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Particulars of Scuppers and Sanitary Discharge Pipes —

From bridge space ^{port side} scupper fitted with steel pipe to shell.

Particulars of Side Scuttles:

Side scuttles in crew space forward & aft efficient & all fitted with deadlights.

Particulars of Guard Rails:—

On fore-castle deck guard rails 37" high 2 rows of bars stanchions 54" apart.
On fore-board deck steel bulwarks 4'-2½" high
Bridge " strong wooden bulwarks 3'-0" high
Raised Quarter deck steel bulwarks 3'-0" high
Poop deck steel bulwarks 3'-0" high

Particulars of Gangways, Lifelines, etc.:—

A satisfactory gangway to the crew's quarters forward by the cargo hatch, access to which is through a sliding door in the bridge front. ~~No lifelines are fitted.~~
a lifeline capable of being fitted either side supplied for forward well

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	93'-3"	3'-0"	36½" x 18"	4	18.25 Ⓢ ✓	18.65 Ⓢ ✓
Forward Well	35'-0"	4'-2½"	29" x 18½"	3	11.2 Ⓢ ✓	10 Ⓢ ✓
State position of each freeing port { After Well:— } see sketch 6" ✓ P. and A. position and height above deck edge) { Forward Well:— } 11" ✓ State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— shutters on steel swivels. ✓ Additional area where sheer is less than standard. ✓						

Particulars of Superstructures, Trunks, Casings, Deckhouses.

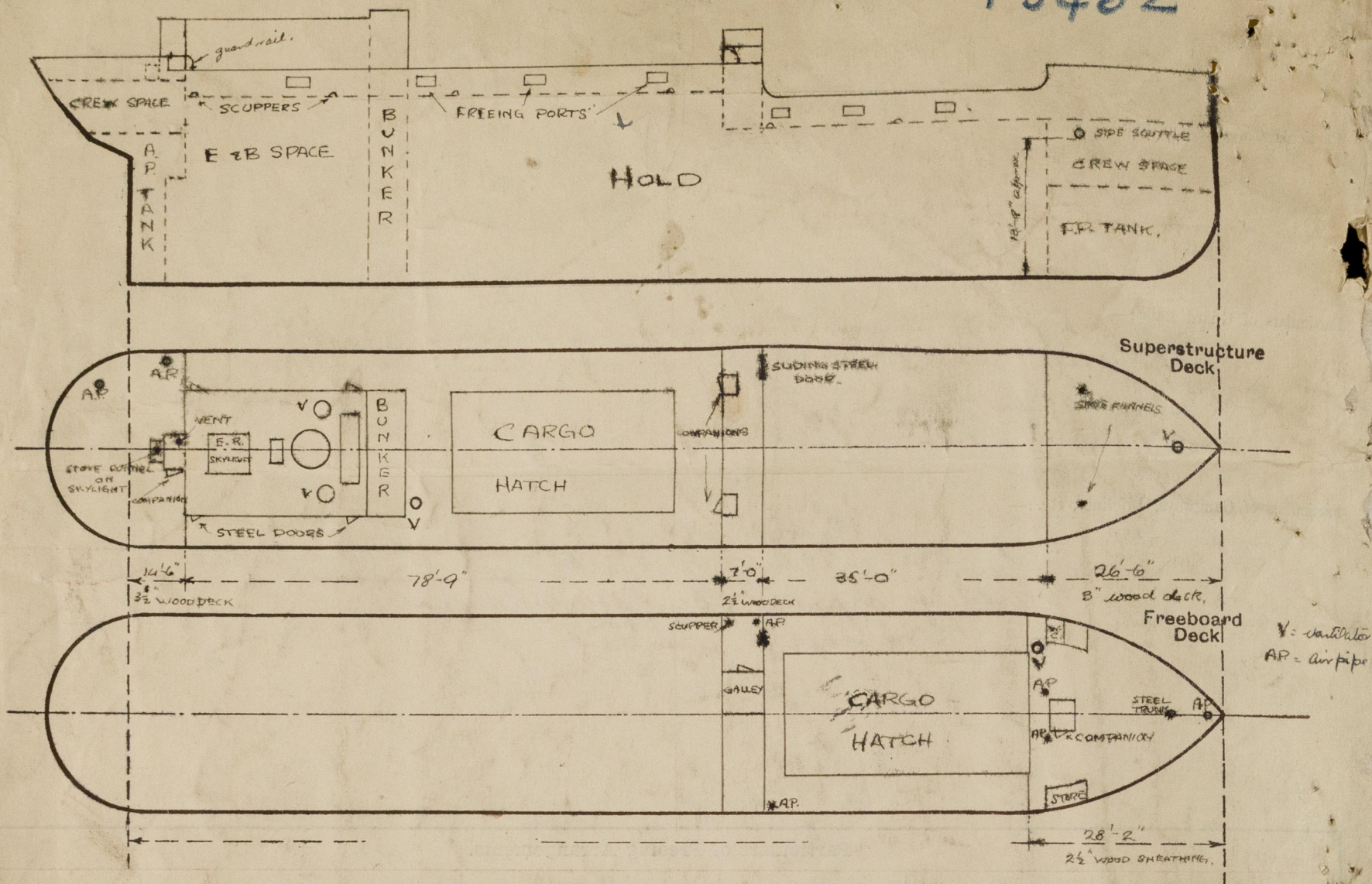
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	✓	¼"	3" x 2½" x 5/16"	36"	nil	✓	✓	✓
Raised Quarter Deck Bulkhead ...	✓	.31	Diaphragm & brackets.	✓	✓	✓	✓	✓
Bridge, After Bulkhead	✓	.31	3" x 3" x 7/16"	24"	nil	2 @ 48" x 21"	15¼"	✓
Bridge, Forward Bulkhead37	.25	3" x 3" x 5/16" L & reverse.	30"	bracketed top & bottom	50½" x 27"	18½"	✓
Fore-castle Bulkhead	✓							
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks37	.31	In engine room solid ½" mild iron 2½" x 1½" On stokehold 2½" x 2½" x ½" L & bracketed to beams	31"	carried below deck free at top except on stokehold	4 @ 54" x 24½"	18"	7'-5" ✓
Exposed Machinery Casings on Superstructure Decks								
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships ...								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	✓	<i>no openings</i>	
Raised Quarter Deck Bulkhead ...	✓	<i>no openings</i>	
Bridge, After Bulkhead		Hinged teakwood doors 1½" thick securing from both sides. Non water-tight ✓	
Bridge, Forward Bulkhead		Sliding steel door ½" thick. not secured <i>capable of being operated both sides</i> Non water-tight ✓	
Fore-castle Bulkhead	✓	<i>open</i>	
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...		4 hinged steel doors ½" thick securing from both sides. Non water-tight ✓	
Exposed Machinery Casings on Superstructure Decks	✓		
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓		
Deckhouses on Flush Deck Ships ...	✓		

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:—

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

The port side of the bridge space with a companionway in the after bulkhead & a sliding steel door in the forward bulkhead is the only efficient means of communication between the Raised Quarter Deck & the crew's quarters forward & between the Bridge & the crew's quarters forward & is therefore used as an alleyway.

The survey on this vessel was held in drydock & a full Special Survey was held concurrent.

Builder's name and yard number Aika S.B. Co. Troon

Names of sister ships

Owners J. Kelly Ltd. (W. Clint Manager)

Fee £ 5 : 2 : 0

Received by me



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