

-8 SEP 1932

Rpt. Ct11.

Index. No. 30949
(For London Office only.)Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having

POOP BRIDGE & FORECASTLE

Port of Survey NEWCASTLE

(Type of Superstructures.)

Date of Survey 6TH & 7TH SEPT. 1932

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

INVELLA

BRITISH
GLASGOW

147914

5026

1924 8

Name of Surveyor

J. Young

Particulars of Classification + 100 A.I.

S.S. No. 1-28

Moulded Dimensions: Length 399.5 / Breadth 52.0 / Depth 31.0"
Moulded displacement at moulded draught = 85 per cent. of moulded depth 11980 tons
Coefficient of fineness for use with Tables .766

Depth for Freeboard (D)

Moulded depth ... 31.0"
Stringer plate04
Sheathing on exposed deck
 $T \left(\frac{L-S}{L} \right) =$

Depth for Freeboard (D) = 31.04

Depth correction

(a) Where D is greater than Table depth
(D - Table depth) R =
 $(31.04 - 26.63) \times 3 = +13.23$
(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) 52.0"
Standard Round of Beam = $\frac{B \times 12}{50} = 12.48$
Ship's Round of Beam = 13"
Difference .52
Restricted to .4928
Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.52}{4} (1 - .5072) = -.06$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	36.75	36.75	7'-11 1/2"		36.75
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	120.58	120.58	7'-11 1/2"		120.58
" overhang aft ...					
" overhang forward ...					
F'cle enclosed ...	45.30	45.29	7'-11 1/2"		45.29
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	202.62	202.62			202.62

Standard Height of Superstructure 7.49

" " R.Q.D. -

Deduction for complete superstructure 41.96

Percentage covered $\frac{S}{L} = 50.72$ " " $\frac{S_1}{L} = 50.72$ " " $\frac{E}{L} = 50.72$ Percentage from Table, Line A.
(corrected for absence of forecastle (if required))Percentage from Table, Line B. 36.72
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = $41.96 \times .3672 = -15.41$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	49.95	1		49.95	60	60.00	1		60.00
1/2 L from A.P. ...	22.23	4		88.92	27	26.07	4		104.28
3/8 L " ...	5.49	2		10.98	7	6.52	2		13.04
Amidships ...		4			0		4		
3/8 L from F.P. ...	10.99	2		21.98	13	13.03	2		26.06
1/2 L " ...	44.45	4		177.80	53	52.13	4		208.52
F.P. ...	99.90	1		99.90	120	120.00	1		120.00
Total ...				449.53					531.90

Mean actual sheer aft = 6.00
Mean standard sheer aft = 6.00Mean actual sheer forward = 6.00
Mean standard sheer forward = 6.00

Length of enclosed superstructure forward of amidships = .173

" " aft of " = .182

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{449.53 - 531.90}{18} \left(.75 - \frac{202.62}{2 \times 399.5} \right) = -2.27$

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 = 31.04
Summer freeboard = 5.94
Moulded draught (d) = 25.10

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 6.27 = 6 1/4

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 11453$

Tons per inch immersion at summer load water line

T = 41.03

Deduction = $\frac{\Delta}{40 T}$ inches

= 6.98 = 7

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

 $\frac{766 + .68}{1.36} = 1.446$

	+	-
Depth Correction ...	13.23	-
Deduction for superstructures ...	-	15.41
Sheer correction ...	-	2.27
Round of Beam correction ...	-	.06
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. ...	-	-
	13.23	17.74

Summer Freeboard = 71.35

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

Tropical Fresh Water Line above Centre of Disc ...	13 1/4"	337 m/m.	Tropical Fresh Water Freeboard ...	5' - 11 1/4" 1810 mm
Fresh Water Line " " ...	7"	178 "	Fresh Water " " ...	4' - 10" 1473 "
Tropical Line " " ...	6 1/4"	159 "	Tropical " " ...	5' - 4 1/4" 1632 "
Winter Line below " " ...	6 1/4"	159 "	Winter " " ...	6 - 5 1/2" 1969 "
Winter North Atlantic Line " " ...			Winter North Atlantic " " ...	

5m, 3, 32.

MARKING FORM

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MARKING FORM

RECEIVED 17 OCT 1933

MARKING FORM

RECEIVED 17 JAN 1933

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS												
B.D. U.D.												
Bridge Dk U.D. Fore U.D. Coaling Top												
Description of Hatchway	Nº 1	Nº 2	Nº 2A	Nº 2A	Nº 3	Nº 4	Bunker Hatch	To BUNKERS	To F.P. STORE	To F.P. STORE	To F.P. STORE	COAL HATCH
Dimensions of Hatchway	36'3" x 18'0"	33'0" x 18'0"	12'0" 12'0"	18'0" 18'0"	33'0" x 18'0"	30'0" x 18'0"	26'9" x 4'3"	8'6" x 4'0"	2'8" x 2'8"	3'6" x 3'6"	4'6" x 14'0"	4'6" x 14'0"
COAMINGS	Height above Deck	30"	30"	30"	30"	30"	30"	9" B.A.	10" B.A.	10" B.A.	9" B.A.	9" B.A.
	Thickness	.44	.44	.44	.44	.44	.40	ALSO				
	Stiffeners	9" x 3 1/2" BA	9" x 3 1/2" BA	7" x 3 1/2" BA	9" x 3 1/2" BA	9" x 3 1/2" BA		9" x 4'0"				
	Brackets, Stays	2 @ 2 1/4"	2 @ 2 1/4"			2 @ 2 1/4"		9" B.A.				
HATCH BEAMS	Number	6	6	2	2	6						
	Spacing	4'-4"	4'-8 1/2"	4'-0"	4'-0"	4'-8 1/2"						
	Scantling and Sketch	14 1/2" to 8 1/2"	15 1/2" to 9"	14" to 9"	15 1/2" to 9"	16" x 11"						
	Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"						
FORE AND AFTERS	Number											
	Spacing											
	Unsupported Lengths											
	Scantling* and Sketch											
HATCH COVERS	Bearing Surface											
	Material	W.P.					W.P.	W.P.	W.P.	W.P.		
	Thickness	3"					3"	3"	3"	3"		
	How fitted	F & A										
ALL SIMILAR TO Nº 1												
Spacing of Cleats	24"						3"	3"	3"	3"		
Number of Tarpaulins	3	3	3	1	3	3	24"	24"	18"	26"		
*Are wood fore and afters steel shod at all bearing surfaces?												
Are battens and wedges efficient and in good condition?												
Are tarpaulins in good condition and in accordance with rule requirements?												
Are lashings provided in accordance with rule requirements?												

Particulars of fiddle, funnel and ventilator coamings:—

Sidley Gratings are protected by hinged iron covers.
 Funnel & Vents in efficient condition.
 E.R. Skylight well constructed of steel.

Particulars of Flush Bunker Scuttles:—

NONE.

Particulars of Companionways:—

NONE.

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

Fore to F.P. Store	9" diam.	2'6" high
" " " "	10" "	2'6" "
" " " "	6" "	2'6" "
" " " "	17" "	2'10" "
U.D. to Holds	17" "	3'0" "
B.D. to B.H.	4 1/2" SN.	2'2" "
Poop to Hold	17" "	3'0" "
" " " "	9" "	2'9" "

All Vents are well constructed to Rule requirements.
 Wood Plugs & Canvas Covers are on board.

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

Fore to F.P.	3 1/2" diam.	2'2" high to mouth
" " W.I.	2 1/2" "	2'9" "
U.D. to D.B. Junks	2 1/2" "	2'6" "
B.D. to D.B.	2 1/4" "	2'3" "
Poop to A.P.	2 1/4" "	2'3" "

Canvas covers are provided.

Particulars of Gangway Cargo and Coaling Ports:—

NONE.



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Particulars of Scuppers and Sanitary Discharge Pipes:— Weather Dk Scuppers all bent pipe thro. deck & shell.
 Bridge &ween Dk. 2 Scuppers each side. bent pipe thro deck & shell.
 Sanitary discharges are all iron pipe with storm valves fitted.

Particulars of Side Scuttles:— To Crew Space. 8 1/2" diam. All fitted with hinged iron deadlights.

Particulars of Guard Rails:—

Forecastle 3'-3" high Stans. 5'-0" apart 2 Rails
 Bulwark in Wells 4'-0" high Stays 7" x 3" B.A. 5'-9" to 6'-0" apart Rail 7" x 3" B.A.
 Bridge Dk. 3'-6" high Stans. 5'-0" apart 3 Rails
 Poop Dk. 3'-0" " " 5'-0" " 2 "

Particulars of Gangways, Lifelines, etc.:—

None.

Suitable provision is made for rigging 3" manilla lifelines in the forward & after wells

Particulars of Freeing Arrangements.

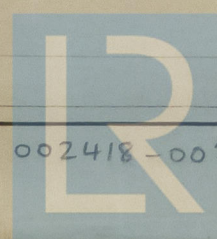
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well. ...	101'- ¹² / ₈ "	4'-0"	3'-6" x 1'-6"	4	21 $\frac{1}{2}$ ✓	20.2 $\frac{1}{2}$ ✓
Forward Well ...	95'-9"	4'-0"	3'-6" x 1'-6"	4	21 $\frac{1}{2}$ ✓	19.15 $\frac{1}{2}$ ✓
State position of each freeing port ... After Well:— From Bridge. 19'-0", 43'-6", 61'-0", 85'-6" (F. and A. position and height above deck edge) Forward Well:— 12'-6", 35'-0", 58'-0", 75'-0" State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— SILLS 12" ✓ Additional area where sheer is less than standard. 2 BARS ACROSS EACH PORT. ✓						

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 ...	.44	.40	6" x 3 1/2" x .40	2'-6"	NONE	3'-6" x 5'-0"	17"	7'-11 1/2"
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead ...	.30	.30	4" x 3" x .40	2'-6"	NONE	3'-8" x 5'-0"	18"	7'-11 1/2"
Bridge, Forward Bulkhead ...	.45	.40	8" x 3 1/2" x .40 B.A.	2'-3"	BKTS. T & B.	4'-0" x 5'-0"	19"	7'-11 1/2"
Forecastle Bulkhead ...	.30	.30	3 1/2" x 3 1/2" x .40	3'-0"	NONE	2'-0" x 4'-10"	18"	7'-11 1/2"
Trunk, Aft ...								
Trunk, Forward ...								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	.40	.30	4" x 3" x .40	2'-6"	NONE	2'-0" x 5'-0"	18"	7'-11 1/2"
Exposed Machinery Casings on Super-structure Decks ...	.45	.40	4" x 3" x .40	2'-6"	BKTS TOP	2'-0" x 5'-0"	18"	7'-9"
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 ...	3" Shifting boards in full height riveted channels. ✓
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead ...	3" Shifting boards in full height riveted channels. ✓
Bridge, Forward Bulkhead ...	Hinged Steel Doors. Secured by 7/8" Bolts 4 1/2" apart through bulkhead. ✓ 1 1/8" Solid Teak Hinged Doors (4) operated both sides. Hinged Steel Doors operated both sides. (2) ✓
Forecastle Bulkhead ...	
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	Hinged Steel Doors operated both sides. ✓ fastenings to repair
Exposed Machinery Casings on Super-structure Decks ...	Hinged Steel Doors operated both sides. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	
Deckhouses on Flush Deck Ships ...	

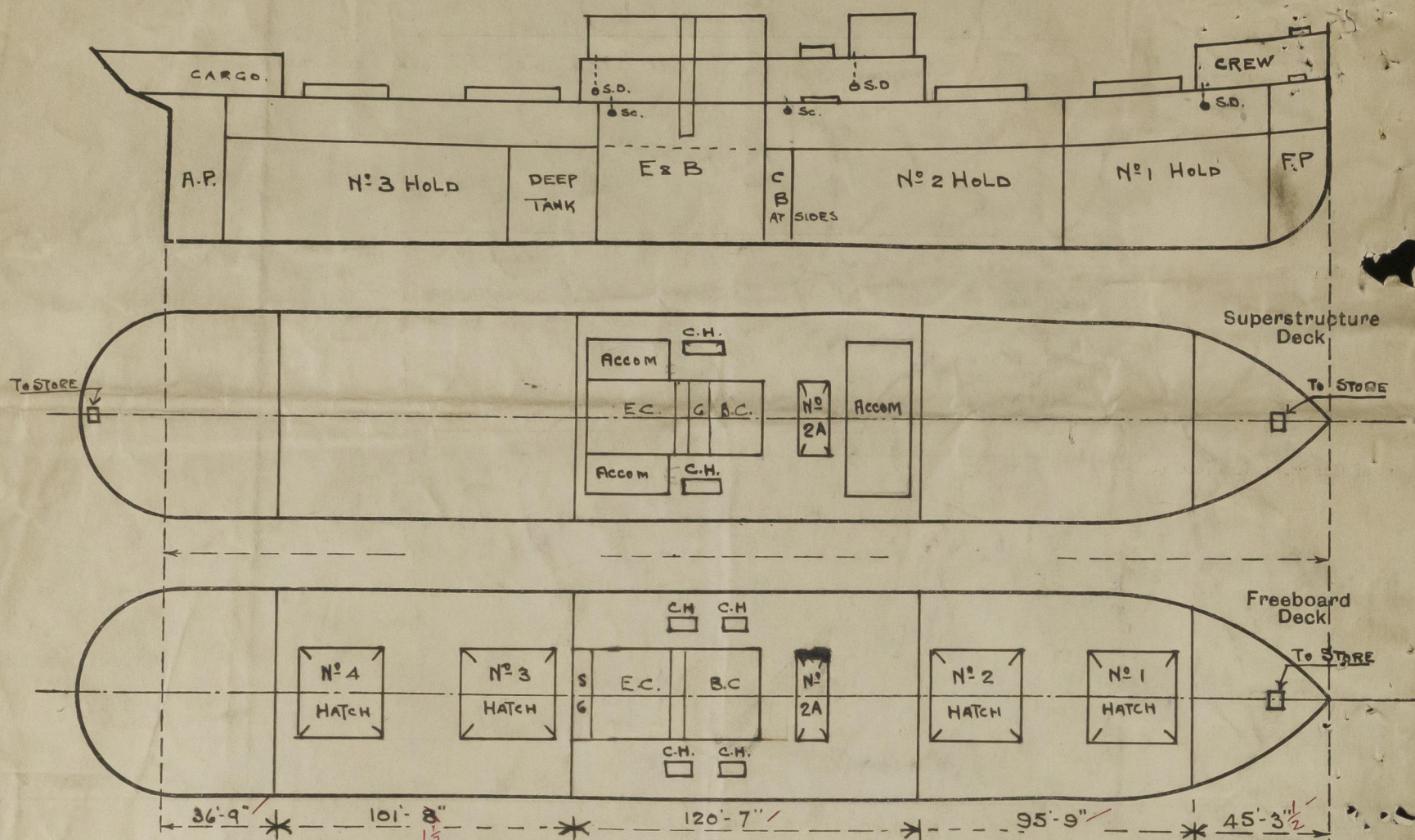


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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways; extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the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



STEEL DECK AT AMIDSHIPS

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

THE VESSEL WAS SURVEYED
IN DRY DOCK.
CONDITION SURVEY ONLY CARRIED
OUT

Builder's name and yard number BARCLAY CURLE & Co. GLASGOW N°600

Names of sister ships

Owners S.S. INDUNA Co. LTD (MACLAY MCINTYRE LTD)

Fee £ 13 : 12 : 0

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