

5 MAY 1932

32234

Rpt. C.11.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Nº 19276

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having *Raised Quarter Deck, Short Bridge & F'ble Deck.*

Port of Survey *Swansea*

Date of Survey *2nd - 4th May 1932*

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<i>S.S. THE DUKE</i>	<i>British Glasgow</i>	<i>148937</i>	<i>820</i>	<i>1927</i>

Name of Surveyor *R.H. Armstrong & Hamish West Paton*

Moulded Dimensions: Length *189.9* Breadth *30.0* Depth *14.16*
Moulded displacement at moulded draught = 85 per cent. of moulded depth *1469 1/4* tons
Coefficient of fineness for use with Tables *.7592*

Particulars of Classification *+100 A.I.*

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	<i>14.16</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>14.20 - 12.663 = 1.46</i>		Moulded Breadth (B)	<i>30.00</i>
Stringer plate	<i>37"</i>	<i>1.537 x 1.46 = +2.244</i>		Standard Round of Beam = $\frac{B \times 12}{50}$	<i>7.20</i>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$		(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <i>-</i>		Ship's Round of Beam	<i>7 1/2"</i>
Depth for Freeboard (D) =	<i>14.20</i>	If restricted by superstructures <i>-</i>		Difference	<i>Green .30</i>
				Restricted to	
				Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right)$	<i>= 30 (1 - .7568) = 7.02</i>

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Roop enclosed					
" overhang					
R.Q.D. enclosed	<i>108.75</i>	<i>108.75</i>	<i>4.00</i>		<i>108.75</i>
" overhang					
Bridge enclosed	<i>9.50</i>	<i>9.50</i>	<i>7.75</i>		<i>9.50</i>
" overhang aft					
" overhang forward	<i>23.91</i>	<i>23.91</i>	<i>7.67</i>		<i>23.91</i>
F'ble enclosed	<i>1.55</i>	<i>1.55</i>			<i>1.55</i>
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	<i>145.25</i>	<i>143.71</i>			<i>143.71</i>

Standard Height of Superstructure *6.00*
" " R.Q.D. *3.60*
Deduction for complete superstructure *24.99*
Percentage covered $\frac{S}{L} = \frac{145.25}{189.9} = 76.48$
" $\frac{S_1}{L} = \frac{143.71}{189.9} = 75.68$
" $\frac{E}{L} = \frac{143.71}{189.9} = 75.68$
Percentage from Table, Line A. *-*
(corrected for absence of forecastle (if required)) *-*
Percentage from Table, Line B. *69.996*
(corrected for absence of forecastle (if required)) *-*
Interpolation for bridge less than 2L (if required) *-*
Deduction = *24.99 x .69996 = 17.492*

SHEER CORRECTION.

Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
A.P.	<i>28.99</i>	<i>1</i>	<i>28.99</i>	<i>30.00</i>	<i>28.99</i>	<i>1</i>	<i>28.99</i>
1/2 L from A.P.	<i>12.90</i>	<i>4</i>	<i>51.60</i>	<i>13.04</i>	<i>12.90</i>	<i>4</i>	<i>51.60</i>
3/4 L "	<i>3.19</i>	<i>2</i>	<i>6.38</i>	<i>3.26</i>	<i>3.19</i>	<i>2</i>	<i>6.38</i>
Amidships	<i>-</i>	<i>4</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>4</i>	<i>-</i>
3/4 L from F.P.	<i>6.38</i>	<i>2</i>	<i>12.76</i>	<i>6.19</i>	<i>6.19</i>	<i>2</i>	<i>12.38</i>
1/2 L "	<i>25.80</i>	<i>4</i>	<i>103.20</i>	<i>24.77</i>	<i>24.77</i>	<i>4</i>	<i>99.08</i>
F.P.	<i>57.98</i>	<i>1</i>	<i>57.98</i>	<i>57.00</i>	<i>57.00</i>	<i>1</i>	<i>57.00</i>
Total			<i>260.91</i>				<i>255.43</i>

Mean actual sheer aft = *Green*
Mean standard sheer aft = *Green*
Mean actual sheer forward = *Deficient*
Mean standard sheer forward = *Deficient*
Length of enclosed superstructure forward of amidships = *123*
" " aft of " = *50*

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \text{Deficient } \frac{5.48}{18} (.75 - .3824) = +.11$
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.
RAISED QUARTER
Depth to *Freeboard Deck* = *18.20*
Summer freeboard = *4.60*
Moulded draught (d) = *13.60*
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = *3.40 = 3 1/2*
Addition for Winter North Atlantic Freeboard (if required) = *2*

Deduction for Fresh Water.
Displacement in salt water at summer load water line
 $\Delta = 1690$
Tons per inch immersion at summer load water line
 $T = 10.70$
Deduction = $\frac{\Delta}{40 T}$ inches = *3.95 = 3 3/4*

TABULAR FREEBOARD corrected for Flush Deck (if required)		
Correction for coefficient	<i>.75268</i>	<i>1.4832</i>
Depth Correction	<i>2.24</i>	<i>-</i>
Deduction for superstructures	<i>17.492</i>	<i>-</i>
Sheer correction	<i>.11</i>	<i>-</i>
Round of Beam correction	<i>.02</i>	<i>-</i>
Correction for Thickness of Deck amidships	<i>-</i>	<i>-</i>
Other corrections, scantlings, etc.	<i>48.00</i>	<i>-</i>
	<i>50.35</i>	<i>17.510 + 32.845</i>
		<i>Summer Freeboard = 55.388</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>4 1/4"</i>	Tropical Fresh Water Freeboard	<i>4 1/2"</i>
Fresh Water Line	<i>3 3/4"</i>	Fresh Water	<i>4 1/4"</i>
Tropical Line	<i>3 1/2"</i>	Tropical	<i>4 1/4"</i>
Winter Line below	<i>3 1/2"</i>	Winter	<i>4 1/4"</i>
Winter North Atlantic Line	<i>5 1/2"</i>	Winter North Atlantic	<i>5 1/2"</i>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Description of Hatchway	...	...	Nº 1	Nº 2	FORE PEAK							
Dimensions of Hatchway	...	...	35'-9"x16'-0"	36'-8"x16'-0"	3'-1"x2'-5"							
COAMINGS	Height above Deck	...	3'-5" ✓	3'-5" ✓	2'-0" ✓							
	Thickness	Sides	44" ✓	44" ✓	37" ✓							
		Ends	44" ✓	44" ✓	37" ✓							
	Stiffeners	...	...	...	...			
	Brackets, Stays	...	9 1/2" x 5 Bulb plate	As Nº 1 ✓								
HATCH BEAMS	Number	...	6	6								
	Spacing	...	5'-0"	5'-2"								
	Scantling and Sketch	...	14"x36" CR 7" ends	As ✓								
			3 1/2"x3"x37"	Nº 1								
	Bearing Surface	...	3 1/2" ✓									
FORE AND AFTERS	Number	...										
	Spacing	...										
	Unsupported Lengths	...										
	Scantling* and Sketch	...										
	Bearing Surface	...										
HATCH COVERS	Material	...	W.W.		W.W.							
	Thickness	...	2 1/2" ✓	As	2 1/2" ✓							
	How fitted	...	F-A	Nº 1 ✓	P-S							
	Bearing Surface	...	2 3/4" ✓		2 1/4" ✓							
Spacing of Cleats	...	...	22" ✓	As	22" ✓							
Number of Tarpaulins	...	...	3 ✓	Nº 1 ✓	2 ✓							

*Are wood fore and afters steel shod at all bearing surfaces? *Yes.*
 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.*

Particulars of fiddley, funnel and ventilator coamings:—
Bunker Hatch on Sidley Top 7'-4"x16'-6" ✓
Coaming 11" high x 37" thick. Cleats 2" CR. ✓
Steel Battens & Wood Wedges ✓
W.W. Covers 2 1/2" F-A. Bearing 2 1/2" - 2 Tarpaulins ✓
Coaming Top plated. Gratings with hinged steel covers. ✓
Main Funnel riveted to Deck. ✓
Engine Room & Galley Skylights & hinged flaps 25" plate ✓
Glass circles 12" dia: - 2 in each Galley flap & 1 in each flap of E.R. Skyl. 3 flaps each side. ✓
2-Vents: to Boiler Rm: 1-P & 1-S. 24" Dia: Coaming 2'-4" high x 25" thick. ✓
2- " " Engine " " " " " 10" " 1-6 " x " " " ✓

Particulars of Flush Bunker Scuttles:—

None ✓

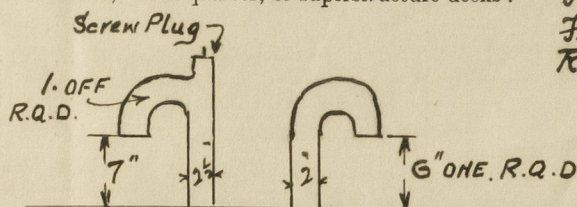
Particulars of Companionways:—

None ✓

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—
Vent: 12" dia: Coaming 3'-0" high x 37" thick. P Ford Well. ✓
" " " " " " " " " S.R.Q. Deck. ✓

Canvas covers & wood plugs provided ✓

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



F'ble: Deck 1 - 6' above DK. ✓
Ford. Well 1 - 36" " " ✓
R.Q. Deck 1.5-3P. 6' 7" above DK. ✓

Satisfactory means of closing provided for all air pipes. ✓
~~*Canvas Covers & wood plugs not provided*~~

Particulars of Gangway Cargo and Coaling Ports:—

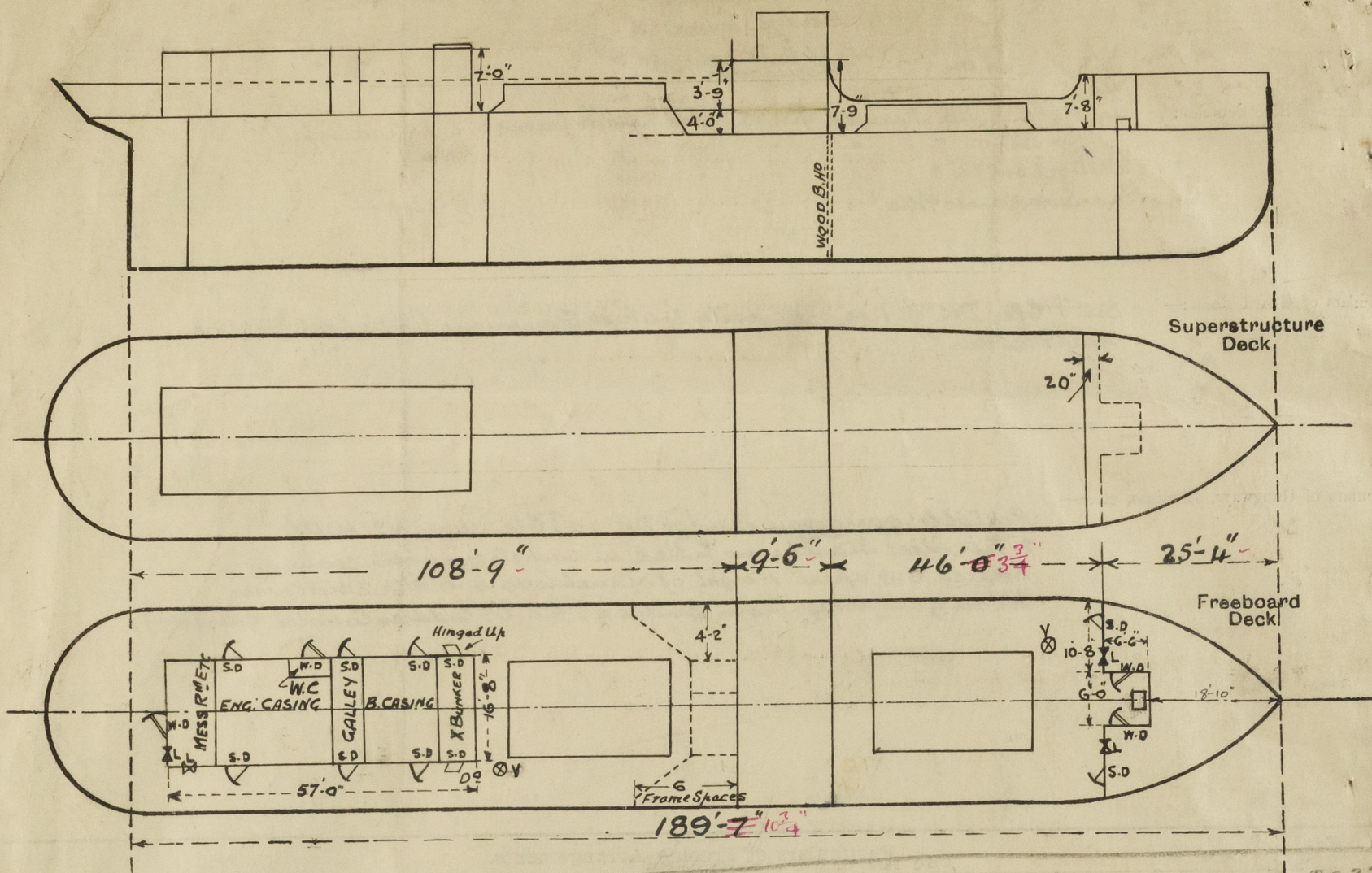
None ✓



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The Duke

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:—



The enclosed

18.84'

$$\text{Equip.} = \frac{6.5 \times 10.67}{13.67} = \frac{5.07}{23.91}$$

$$\text{overhang} = 1.42 + 1.67 = 3.09$$

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

85% mild steel = 2.04' = 12' 1 1/2" BK.
 From A scale cut A @ 12' 1 1/2" = 14#81 = 14#74 can mild.
 Summer mild dit. 13.60 - 13' 7 1/4" = 13' 8 1/4" BK - cut A = 1690 + 10 = 1700

25.33
 14.8
 23.9
 25.33
 1.67
 27.00
 23.9
 3.1

Gulf

Builder's name and yard number Gilisa S.B.C. Ltd.

Names of sister ships

Owners J. Hay & Sons Ltd.

Fee £6 : 16 : 0

Received by me



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