

Rpt. C.11.

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(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

No 31078

Computation of Freeboard for Steamer, Sailing Ship, Tanker—
having Complete Superstructure

(Type of Superstructures.)

Port of Survey Sunderland.

Date of Survey 27th Oct. 1932.

Name of Surveyor H. L. Swinton

Particulars of Classification +100A1.
Shelby D. W. D. S.S. N. 2-29

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
"KING ROBERT"	British London	148731	5886	1920

Moulded Dimensions: Length 399.5 Breadth 52.66 Depth 35.42
Moulded displacement at moulded draught = 85 per cent. of moulded depth 14350 tons
Coefficient of fineness for use with Tables .793

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <u>35.42</u>	(a) Where D is greater than Table depth (D—Table depth) R = <u>(35.46 - 26.63) 3.0 = 26.49</u>	Moulded Breadth (B) <u>52.66</u> Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>12.64</u> Ship's Round of Beam <u>12</u> = <u>12.00</u> Difference <u>.64</u> Restricted to Correction = $\frac{\text{Diff}^*}{4} \times (1 - \frac{S_1}{L}) =$ <u>$\frac{.64}{4} \times .9061 = +.14$</u>
Stringer plate ... <u>.50</u> ... <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth—D) R =	
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures	
Depth for Freeboard (D) = <u>35.46</u>		

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...						Standard Height of Superstructure <u>7.495</u>
" overhang ...						" " R.Q.D.
R.Q.D. enclosed ...						Deduction for complete superstructure <u>41.97</u>
" overhang ...						Percentage covered $\frac{S}{L} =$ <u>9.39</u>
Bridge enclosed...						" " $\frac{S_1}{L} =$ <u>9.39</u>
" overhang aft ...						" " $\frac{E}{L} =$ <u>9.39</u>
" overhang forward						Percentage from Table, Line A. <u>4.69</u> (corrected for absence of forecastle (if required))
Fore enclosed ...	<u>37.5</u>	<u>37.5</u>	<u>7.5</u>		<u>37.5</u>	Percentage from Table, Line B. (corrected for absence of forecastle (if required))
" overhang ...						Interpolation for bridge less than .2L (if required)
Truss aft ...						Deduction = <u>-1.97</u>
" forward ...						
Tonnage opening aft ...						
" " forward						
Total ...	<u>37.5</u>	<u>37.5</u>			<u>37.5</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<u>49.95</u>	1		<u>49.95</u>	<u>48.00</u>	<u>48.00</u>	1		<u>48.00</u>	Mean actual sheer aft = <u>Deficient .75% Standard</u>
$\frac{1}{2}$ L from A.P. ...	<u>22.23</u>	4		<u>88.92</u>	<u>22.52</u>	<u>22.52</u>	4		<u>90.08</u>	Mean actual sheer forward = <u>Excess</u>
$\frac{2}{2}$ L " ...	<u>5.49</u>	2		<u>10.98</u>	<u>5.61</u>	<u>5.63</u>	2		<u>11.26</u>	Mean standard sheer forward =
Amidships ...		4					4			Length of enclosed superstructure forward of amidships = <u>NIL</u>
$\frac{2}{2}$ L from F.P. ...	<u>10.98</u>	2		<u>21.96</u>	<u>12.31</u>	<u>12.34</u>	2		<u>24.68</u>	" " aft of " =
$\frac{1}{2}$ L " ...	<u>44.46</u>	4		<u>177.84</u>	<u>49.37</u>	<u>49.38</u>	4		<u>197.52</u>	
F.P. ...	<u>99.90</u>	1		<u>99.90</u>	<u>112.00</u>	<u>112.00</u>	1		<u>112.00</u>	
Total ...				<u>449.55</u>					<u>483.54</u>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{33.99}{18} (.75 - .047) = -1.33$

If limited on account of midship superstructure. NIL

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

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck =	<u>35.46</u>
Summer freeboard =	<u>9.44</u>
Moulded draught (d) =	<u>26.02</u>

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 6.50 6 $\frac{1}{2}$ "

Addition for Winter North Atlantic Freeboard (if required)=

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ 12315

Tons per inch immersion at summer load water line

T = 42.32Deduction = $\frac{\Delta}{40T}$ inches= 7.27 7 $\frac{1}{4}$ "

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{793 + 68}{1.36} = 1.473$ Depth Correction ... 26.49Deduction for superstructures ... 1.97Sheer correction ... —Round of Beam correction14Correction for Thickness of Deck amidships ... —Other corrections, scantlings, etc. ... 11.31Summer Freeboard = 113.25SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~ Steel Deck:—

Tropical Fresh Water Line above Centre of Disc ...	<u>13$\frac{3}{4}$</u>
Fresh Water Line " " ...	<u>7$\frac{1}{4}$</u>
Tropical Line " " ...	<u>6$\frac{1}{2}$</u>
Winter Line below " " ...	<u>6$\frac{1}{2}$</u>
Winter North Atlantic Line " " ...	<u>—</u>

Tropical Fresh Water Freeboard ...	<u>9' - 5$\frac{1}{4}$"</u>
Fresh Water " " ...	<u>8' - 3$\frac{1}{2}$"</u>
Tropical " " ...	<u>8' - 10$\frac{3}{4}$"</u>
Winter " " ...	<u>9' - 11$\frac{3}{4}$"</u>
Winter North Atlantic " " ...	<u>—</u>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	N. 1.	N. 2.	N. 3.	N. 4.	N. 5.	Feeder to low. dk.	Feeder to low. dk.	Cowling top.	
Dimensions of Hatchway	29' 9" x 20' 0"	29' 9" x 20' 0"	14' 10 1/2" x 20' 0"	34' 0" x 20' 0"	29' 9" x 20' 0"	1' 9" x 1' 5"	7' 0" x 7' 0"	4' 3" x 17' 0"	
COAMINGS	Height above Deck	32"	32"	32"	32"	36"	36"	B.A. 5' 3" x 9' 3"	
	Thickness	1/8"	1/8"	1/4"	1/50"	1/4"	1/4"		
	Sides	1/4"	1/8"	1/4"	1/4"	1/4"	1/4"		
	Stiffeners	7 x 3 x 40	7 x 3 x 40	7 x 3 x 40	7 x 3 x 40	NONE	NONE		
	Brackets, Stays	2	2	NONE	3	2	NONE		
HATCH BEAMS	Number	5	5	2	6	5	1		
	Spacing	4' 11 1/2"	4' 11 1/2"	4' 11 1/2"	4' 10 1/2"	4' 11 1/2"	4' 0"		
	Scantling and Sketch	18" x 36"	18" x 36"	18" x 36"	18" x 36"	18" x 36"	B.A.	None	None
	Bearing Surface	4 x 3 x 44	4 x 3 x 44	4 x 3 x 44	4 x 3 x 44	4 x 3 x 44	5 1/2 x 3 x 4		
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths								
	Scantling* and Sketch			None		None		None	
	Bearing Surface						B.A. 3 x 3 x 50 or 3 x 2 1/2 x 4		
HATCH COVERS	Material	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	
	Thickness	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	
	How fitted	F.O.P.	F.O.P.	F.O.P.	F.O.P.	F.O.P.	F.O.P.	F.O.P.	
	Bearing Surface	3"	3"	3"	3"	3"	2 1/2"	2 1/2"	
Spacing of Cleats	24"	24"	24"	24"	24"	27"	24"	24"	
Number of Tarpaulins	3	3	3	3	3	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.</i></p>									

Particulars of fiddle, funnel and ventilator coamings:—

Stokehold gratings covered by strong steel hinged covers. Fiddle, funnel, & vents in efficient condition. Engine room skylight of steel strongly constructed.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

Companionway leading from superstructure dk. to crew's accom. off formed in strong steel deckhouse. Doors solid oak, hinged. Manipulated from both sides. Sill 16".

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

1 on fore dk. 12" dia. Coam. 36 x 36 to peak.	1 on Super dk. 12" dia. Coam. 36 x 32 to low. dk.
1 " " 21 " " 36 x 38 to hold.	1 " " 12 " " 36 x 22 " store.
9 " Super " 21 " " 36 x 36 "	
6 " " 17 " " 36 x 40 "	
2 " " 12 " " 36 x 32 to crew.	

All vents constructed in accord. with the Rules, & coam. closed with wood plugs & canvas covers.

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

2 on super. dk. 2 1/2" dia. 13 1/2" high to O.B. tanks.	
2 " " 2 1/2" " 16 " " "	
2 " " 2 1/2" " 21 " " "	
2 " " 3 " 18 " " to aft peak.	

Openings of air pipes fitted with wooden plugs.

Particulars of Gangway Cargo and Coaling Ports:—

None.



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Particulars of Scuppers and Sanitary Discharge Pipes:—

Scuppers from Super. dk. 3" dia. M.T. bend, discharging below dk. no storm valve.
 Sanitary discharges from W.C. & baths led thru ship's side below Super.
 dk. & fitted with storm valves at ship's side.

Particulars of Side Scuttles:—

In fore-castle above Super. dk. 10" dia. fitted with hinged deadlights.
 In crew op. aft below " " "
 with 18" below sup. dk.
 all of substantial construction.

Particulars of Guard Rails:—

On Side dk. 3'3" high 3 rods. Stanchions 5'0" apart.
 On Super 3'3" 3 5'0"
 Steel bulwark on Super dk. amidst. & aft 3'6" high strongly constructed
 & efficiently supported.

Particulars of Gangways, Lifelines, etc.:—

~~No fittings provided.~~

Provision made for jugging lifelines
 for use of the crew in the regular
 working of the ship.

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						
Forward Well						
State position of each freeing port { After Well:— (F. 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:— 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								
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead	✓	30" pl. p. 4"		40"	None	{ 1 @ 5'0" x 4'8" 18" 2 @ 5'0" x 2'0" 18"		
Trunk, Aft								
Trunk, Forward						{ 2 @ 5'0" x 2'0" 17"		
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	20 x 36	32	3 1/2 x 3 1/2 x 42 ang.	38"	BL & top	{ 1 @ 5'0" x 2'6" 17"		7'6"
Exposed Machinery Casings on Super-structure 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	
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	
Forecastle Bulkhead	1 opening closed with 3" storm boards in riv. ch. full height.
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	2 " " hinged steel doors. Manip. both sides.
Exposed Machinery Casings on Super-structure Decks	4 " " " " " "
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 shewn on the following sketches:—



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

Vessel Surveyed Afloat.
 Special Survey No. 3 being carried out, & will be completed
 at this port, including dry docking.

Builder's name and yard number *Furness S.B. Co. Ltd.*

Names of sister ships

Owners *Scottish S.B. Co. Ltd. (Dodd Thomson & Co. Ltd. Mgrs.)*

Fee £ *13* : *12* : *0*

Received by me



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