

GLASGOW REPORT No. 53129

pt. C.11.

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~

having fore-castle, bridge and raised quarter deck

Port of Survey Glasgow

Date of Survey 28-9-32  
r 8-12-32

Name of Surveyor W. A. GRIER AND  
Norman Dobson

Particulars of Classification **+** 100 A.1.  
S. P. Bwg No. 3-12.31

*SAINT ENOCH*

Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
BRITISH, G/4390 W.	141891.	<del>362</del> 560 GROSS TONNAGE	1918-11. 1915

Moulded Dimensions: Length 141.5 Breadth 23.66 Depth 11.0  
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 677 tons  
 Coefficient of fineness for use with Tables 757

Depth for Freeboard (D)		Depth correction	Round of Beam correction
Moulded depth	11.0	(a) Where D is greater than Table depth "	Moulded Breadth (B) 23.66
Stringer plate	0.4	(D - Table depth) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 5.68''$
Sheathing on exposed deck	7.0	$(11.04 - 9.435) 1.068 = + 1.75''$	Ship's Round of Beam 7.7 = $\frac{7''}{1.32''}$
T $\left( \frac{L-S}{L} \right) =$		(b) Where D is less than Table depth (if allowed)	Difference
Depth for Freeboard (D) =	11.04	(Table depth - D) R =	Restricted to
		If restricted by superstructures	Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{1.32}{4} \times 2.167 = -0.71$

### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	✓				
„ overhang ...	✓				
R.Q.D. enclosed ...	81.5	81.50	3.0	× 3/5.275	74.65
„ overhang ...					
Bridge enclosed... ..	8.0	8.00	7.0	✓	8.00
„ overhang aft ...	✓				
„ overhang forward	✓				
F'cle enclosed ...	<del>19.5</del> 21.32	21.32	6.5	✓	21.32
„ overhang ...	<del>4.7</del>				
Trunk aft ...	✓				
„ forward ...	✓				
Tonnage opening aft ...	✓				
„ „ forward	✓				
Total ...	110.82	110.68			103.97

6.00  
 3.275  
 20.15  
 $\frac{S}{L} = 78.33\%$   
 $\frac{S_1}{L} = 78.33\%$   
 $\frac{E}{L} = 73.48\%$   
 Percentage from Table, Line A.  
 (corrected for absence of forecastle (if required)) 67.28%  
 Percentage from Table, Line B.  
 (corrected for absence of forecastle (if required))  
 Interpolation for bridge less than 2L (if required)  
 Deduction =  $20.15 \times .6728 = 13.56''$

SHEER CORRECTION.

Station	Standard Ordnate	S M	Product	Actual Ordnate	Effective Ordnate	S M	Product
A.P. ...	24.15	1	24.15	<del>24.5</del>	<del>24.50</del> 24.50	1	24.50
$\frac{1}{2}$ L from A.P. ...	10.75	4	43.00	<del>9.0</del>	9.48 9.48	4	37.92
$\frac{3}{8}$ L " ...	2.65	2	5.30	<del>1.8</del>	2.36 2.36	2	4.72
Amidships ...	✓	4	✓	0	✓ ✓	4	✓
$\frac{3}{8}$ L from F.P. ...	5.30	2	10.60	<del>4.0</del>	4.14 4.14	2	8.28
$\frac{1}{2}$ L " ...	21.49	4	85.96	<del>16.8</del>	16.59 16.59	4	66.36
F.P. ...	48.30	1	48.30	<del>38.0</del>	38.00 38.00	1	38.00
Total ...			217.31 ✓		✓		179.78

$$\frac{\text{Mean actual sheer aft}}{\text{Mean standard sheer aft}} = \text{Deficient.}$$
$$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{Deficient}$$

$\frac{\text{Length of enclosed superstructure}}{L}$  forward of amidships = .13

" aft of " = .50

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{37.53}{18} (.75 - .396) = + .75$$

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)		14.40	
Addition for Winter and Winter North Atlantic Freeboard.				$\frac{.68 + .757}{1.36} = \frac{1.437}{1.36}$		15.22	
Depth to Freeboard Deck	=	Ft.	Displacement in salt water at summer load water line	$\Delta =$		+	-
Summer freeboard	=		Tons per inch immersion at summer load water line			1.75	-
Moulded draught (d)	=		T			-	13.56
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches =			Deduction = $\frac{\Delta}{40T}$ inches			75	-
Addition for Winter North Atlantic Freeboard (if required)=						-	.07
						-	-
						36.00	
						38.50	13.63
						+ 24.87	
						Summer Freeboard = 40.09	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, <sup>Raised Quarter</sup> ~~Wood~~ Steel, Deck:— 3'-4"

Tropical Fresh Water Line above Centre of Disc	...	...	Tropical Fresh Water Freeboard	...	...
Fresh Water Line	"	"	Fresh Water	"	...
Tropical Line	"	"	Tropical	"	...
Winter Line	below	"	Winter	"	...
Winter North Atlantic Line	"	"	Winter North Atlantic	"	...

1906 Freeboards  
re-assigned

# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS												
Description of Hatchway ... ..			UPPER DECK	R.Q.D.	C.B. ON CASING TOP							
Dimensions of Hatchway ... ..			23-3x14	20-6x14	5-3x13-6							
COAMINGS	{	Height above Deck ... ..	2'-6" ✓	2'-0" ✓	10" ✓							
		Thickness { Sides ... ..	.40 ✓	.40 ✓	.30 ✓							
			Ends ... ..	.40 ✓	.40 ✓	.30 ✓						
		Stiffeners ... ..	7x3x40BA ✓	✓	✓	✓						
	{	Brackets, Stays ... ..	✓	✓	✓							
		HATCH BEAMS	Number ... ..	4	3							
			Spacing ... ..	4-7 3/4 ✓	5-1 1/2 ✓							
			Scantling and Sketch ... ..									
	{		15x28 ✓	15x28 ✓	✓							
			3x3x38 ✓	3x3x38 ✓								
			Bearing Surface ... ..	3 1/2 ✓	3 1/2 ✓							
		FORE AND AFTERS	{	Number ... ..								
Spacing ... ..												
Unsupported Lengths ... ..												
Scantling* and Sketch ... ..	✓			✓	✓							
	{	Bearing Surface ... ..										
		HATCH COVERS	Material ... ..	WOOD ✓	WOOD ✓	WOOD ✓						
			Thickness ... ..	2 1/2 ✓	2 1/2 ✓	2 1/2 ✓						
			How fitted ... ..	F+A ✓	F+A ✓	F+A ✓						
	{	Bearing Surface ... ..	3 ✓	3 ✓	2 1/2 ✓							
		Spacing of Cleats ... ..			24 ✓	24 ✓	24 ✓					
Number of Tarpaulins ... ..			2 ✓	2 ✓	2 ✓							
*Are wood fore and afters steel shod at all bearing surfaces ?						✓						
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 fiddle, funnel and ventilator coamings :—

SPROKENHOLD GRATING COVERED BY STRONG STEEL KINGED COVER ✓  
 FIDLEY AND FUNNEL VENTILATORS IN EFFICIENT CONDITION ✓  
 ENGINE SKYLIGHT OF WOOD STRONGLY CONSTRUCTED ✓

Particulars of Flush Bunker Scuttles :— NONE ✓

Particulars of Companionways :— NONE ✓

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

ONE VENT IN FORE WELL 9" DIA. COAMING 30"x30 LED TO HOLD ✓  
 ONE VENT ON R. Q. D. 9" " " 30x32 " " " ✓

VENTILATORS CONSTRUCTED IN ACCORDANCE WITH RULES AND COAMINGS CLOSED WITH WOOD PLUGS AND CANVAS COVERS. ✓

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

ONE M.I. ON FOLE DECK UNDER HEAD CHOCK 3" ABOVE WOOD DECK 2 1/2" DIA. FROM FORE PEAK ✓  
 ONE M.I. AIR PIPE ON R. Q. D. 30" HIGH x 2" DIA FROM AFTER PEAK ✓

AIR PIPES ARE CLOSED WITH CANVAS COVER ✓

Particulars of Gangway Cargo and Coaling Ports :— NONE ✓



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Particulars of Scuppers and Sanitary Discharge Pipes:—

NO SCUPPER PIPES DISCHARGING BELOW FREEBOARD DECK

ONE SANITARY PIPE, PORT SIDE, DISCHARGING FROM W.C. ON R.Q.D AFT. STORM VALVE FITTED AT SHIPS SIDE.

Particulars of Side Scuttles:—

SIDE SCUTTLES TO CREWS QUARTERS IN F'CLE AND BRIDGE, NO DEADLIGHTS FITTED.

Particulars of Guard Rails:—

GUARD RAILS ON F'CLE 3'-0" HIGH WITH 2 RODS AND STANCHIONS SPACED 4 FT APART.

Particulars of Gangways, Lifelines, etc.:—

NONE FITTED.

Suitable provision is made for  
regging lifelines, available for use in  
any part of the ship which might have  
to be used by 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
Forward Well ...	81'-6"	3-0	24" x 15" 30 x 15	3 3	17.5 = 16.8 ft <sup>2</sup> 9.3	16.3
Forward Well ...	28'-6"	3-6	30 x 18	3	11.25	9.3

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:— SHUTTERS.

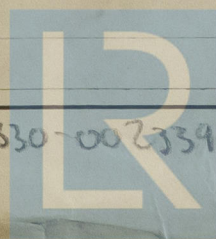
Additional area where sheer is less than standard.

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 ...	✓	.28	3 x 3 x 38	30	✓	✓	✓	3'-0"
Bridge, After Bulkhead ...								5'-0"
Bridge, Forward Bulkhead ...	20 x 35	.30	5 x 3 x 40	30	BKT. TOP & BOTTOM	✓	✓	7'-0"
Forecastle Bulkhead ...	✓	.28	3 x 3 x 36	30	✓	4'-6" x 2'-0"	12	6'-6"
Trunk, Aft ...	✓							
Trunk, Forward ...	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	20 x 30	.28	2 1/2 x 2 1/2 x 30	24	BKT AT TOP	4'-0" x 1'-10"	20	6'-6"
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 ...	✓	
Raised Quarter Deck Bulkhead ...	✓	no openings
Bridge, After Bulkhead ...	✓	no openings
Bridge, Forward Bulkhead ...	✓	no openings
Forecastle Bulkhead ...	1 1/2"	SOLID HINGED WOOD DOORS, CAPABLE OF BEING MANIPULATED FROM BOTH SIDES
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...		HINGED STEEL PLATE DOORS,
Exposed Machinery Casings on Superstructure Decks ...		
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...		
Deckhouses on Flush Deck Ships ...		

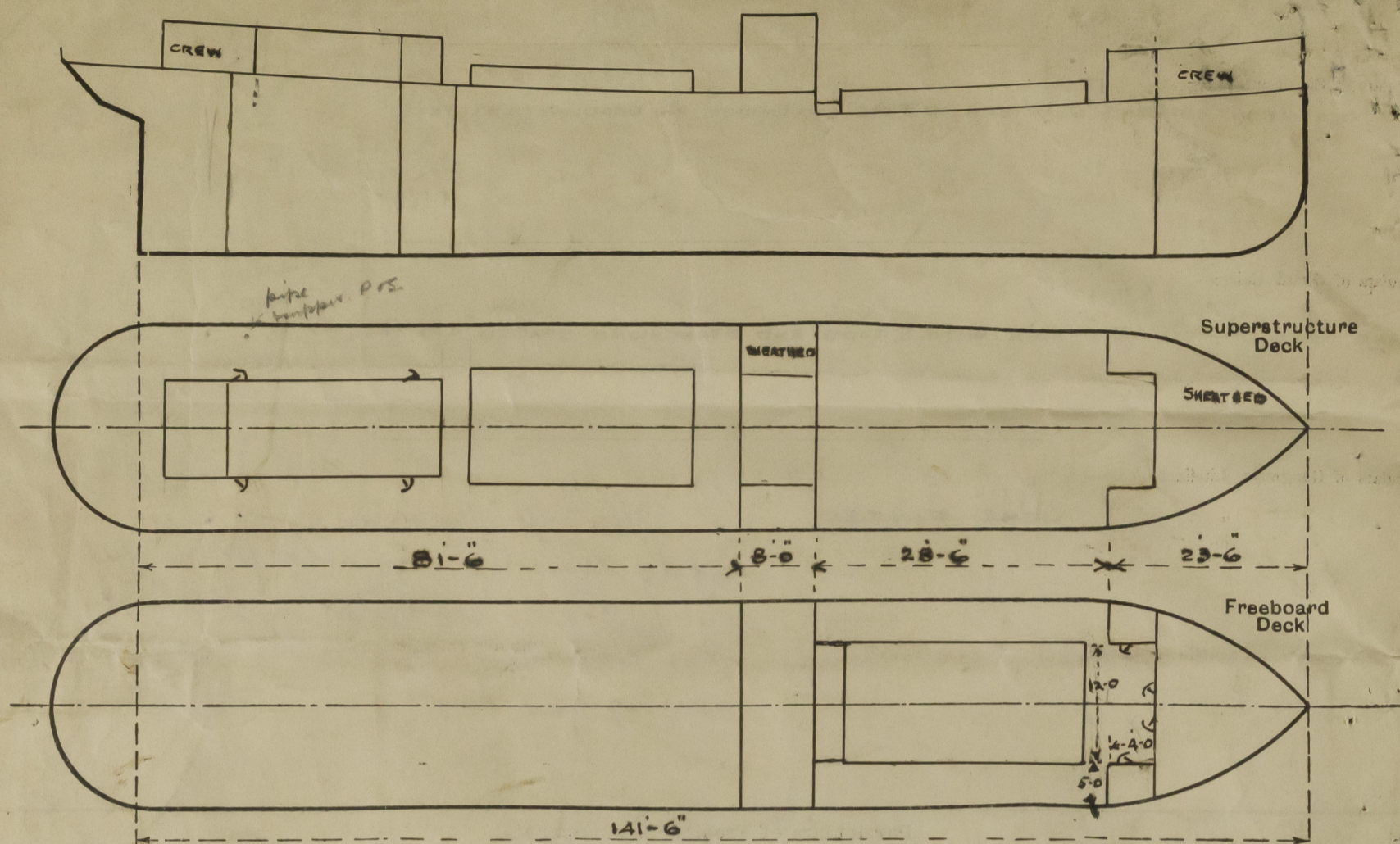


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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship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



$$\text{Forecastle} = 19.5 + \frac{4 \times 5}{11} = 21.32'$$

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

*This vessel is engaged in the British and Continental coasting trade. Timber freeboard not required.*

External displacement at 10'-0" draught 688 tons. Tons per inch 7.2.  
do. do. 11'-0" do. 763 do. do. 7.3.

*This survey has been held afloat and therefore confined to an examination of the means for closing the openings in the decks and sides of vessel.*

Builder's name and yard number *Scott & Sons, Bowling, N° 265*

Names of sister ships *"St. Barchan" (Same builder N° 262) "Saint Aidan".*

Owners *J. & A. Gardner & Co. Ltd.*

Fee £ *5* ; *2* ; *0*

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