

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.

9 MAY 1932

GLASGOW REPORT No. 5 2 4 4 6

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

having a raised quarter deck Bridge & Forecastle

Port of Survey Glasgow

(Type of Superstructures.)

Date of Survey 4th May 1932

Name of Surveyor *H. Hansen*

Particulars of Classification + 100 a.1

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
Saint Aidan	British Glasgow	144208	362	1920-4
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  
 $(D - \text{Table depth}) R = (11.04 - 9.435) / 1.088 \checkmark$

Moulded Breadth (B) 23.66

Stringer plate	...	40	...	...	04
----------------	-----	----	-----	-----	----

$$= +1.75$$
$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 5.68$$

### Sheathing on exposed deck

(b) Where D is less than Table depth (if allowed)  
(Table depth-D) R =

Ship's Round of Beam = 7'

$$T \left( \frac{L-S}{L} \right) =$$

Difference 1.3

Depth for Freeboard (D) = 11.04

If restricted by superstructures

Restricted to

$$\text{Correction} = \frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{1.32}{4} (1 - .7823) = -.07$$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Roop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...	81.5	81.50	3.0	$\frac{1}{3} \times 275 = .916$	74.65
" overhang ...	none		✓		
Bridge enclosed ...	8.0	8.00	7.0		8.00
" overhang aft ...	none		✓		
" overhang forward ...	none		✓		
F'cle enclosed ...	21.18 <del>22.8</del>	21.18	6.5		21.18
" overhang ...	✓		6.5		
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	110.68	110.68			103.83

Standard Height of Superstructure 6.0

" " R.Q.D. 3.275

Deduction for complete superstructure 20.150

Percentage covered  $\frac{S}{L} =$  .7823

" "  $\frac{S_1}{L} =$  .7823

" "  $\frac{E}{L} =$  .7338

Percentage from Table, Line A.  
(corrected for absence of forecastle (if required)) 67.15

Percentage from Table, Line B.  
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction =  $20.15 \times .6715 = -13.53$

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product	Mean actual sheer aft =	Mean standard sheer aft =
A.P. ...	24.15	1	24.15	25	24.5 24.5	1	24.50	✓	Deficient
$\frac{1}{8}$ L from A.P. ...	10.75	4	43.00	10	9.48 9.48	4	37.92	✓	Deficient
$\frac{2}{8}$ L " ...	2.65	2	5.30	2½	2.36 2.36	2	4.72	✓	
Amidships ...		4		-		4		✓	
$\frac{3}{8}$ L from F.P. ...	5.30	2	10.60	5	4.14 4.14	2	8.28	✓	
$\frac{4}{8}$ L " ...	21.49	4	85.96	17	16.89 16.89	4	66.36	✓	
F.P. ...	48.30	1	48.30	38	38.0 38.0	1	38.00	✓	
Total ...			217.31				179.78	✓	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{37.53}{18} (.75 - .391) = +.45$

Length of enclosed superstructure forward of amidships = 13

aft of " = 50

$\frac{A}{S} = .9647$

$\frac{S}{2L}$	$\frac{S}{2L}$	$\frac{S}{2L}$	$\frac{S}{2L}$
24.15	24.50	24.15	24.50
10.73	9.48	32.19	28.44
2.65	2.36	7.95	9.08
		64.29	62.02

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{37.53}{18} (.75 - .391) = +.45$$

If limited on account of midship superstructure.

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

<p><b>Deduction for Tropical Freeboard.</b></p> <p><b>Addition for Winter and Winter North Atlantic Freeboard.</b></p> <p>Depth to Freeboard Deck = <u>14.04</u> Ft.</p> <p>Summer freeboard = <u>3.33</u></p> <p>Moulded draught (d) = <u>10.71</u></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = <math>\frac{d}{4}</math> inches = <u>2.67 = 2<math>\frac{3}{4}</math></u></p> <p>Addition for Winter North Atlantic Freeboard (if required) = <u>2"</u></p>	<p><b>Deduction for Fresh Water.</b></p> <p>Displacement in salt water at summer load water line</p> <p><math>\Delta = 787</math></p> <p>Tons per inch immersion at summer load water line</p> <p>T = <u>7.32</u></p> <p>Deduction = <math>\frac{\Delta}{40T}</math> inches = <u>2.69</u></p> <p>= <u>2<math>\frac{3}{4}</math>"</u></p>	<p><b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required)</p> <p>Correction for coefficient</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: right;">+ <u>1.36</u></td> <td style="text-align: right;">- <u>1.36</u></td> </tr> <tr> <td>Depth Correction ... ..</td> <td style="text-align: right;">1.75</td> <td></td> </tr> <tr> <td>Deduction for superstructures ... ..</td> <td></td> <td style="text-align: right;">13.53</td> </tr> <tr> <td>Sheer correction ... ..</td> <td style="text-align: right;">.45</td> <td></td> </tr> <tr> <td>Round of Beam correction ... ..</td> <td></td> <td style="text-align: right;">.07</td> </tr> <tr> <td>Correction for Thickness of Deck amidships ... ..</td> <td style="text-align: right;">36.00</td> <td></td> </tr> <tr> <td>Other corrections, scantlings, etc. ... ..</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: right;"><u>38.50</u></td> <td style="text-align: right;"><u>13.60</u></td> </tr> <tr> <td></td> <td></td> <td style="text-align: right;">+ <u>24.90</u></td> </tr> <tr> <td></td> <td></td> <td style="text-align: right;"><b>Summer Freeboard = 40.12</b></td> </tr> </table>		+ <u>1.36</u>	- <u>1.36</u>	Depth Correction ... ..	1.75		Deduction for superstructures ... ..		13.53	Sheer correction ... ..	.45		Round of Beam correction ... ..		.07	Correction for Thickness of Deck amidships ... ..	36.00		Other corrections, scantlings, etc. ... ..				<u>38.50</u>	<u>13.60</u>			+ <u>24.90</u>			<b>Summer Freeboard = 40.12</b>
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ...	2 3/4	Tropical Fresh Water Freeboard ...	2-11/4
Fresh Water Line " " ...	2 3/4	Fresh Water " " ...	3-1/4
Tropical Line " " Limited ...	2	Tropical " " Limited ...	3-2
Winter Line below " " ...	2 3/4	Winter " " ...	3-6 1/4
Winter North Atlantic Line " " ...	4 3/4	Winter North Atlantic " " ...	3-8 1/4



Name of Ship

SAINT AIDAN

Freeboard Report Examined

(Date)

6 May 1957


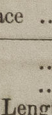
Signed

afterburn

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# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	...	...	...	No 1.	No 2.	Coaling Hd			
Dimensions of Hatchway	...	...	...	23'3" x 14'0"	26'6" x 14'0"	5'3" x 13'6"			
COAMINGS	Height above Deck ... Thickness { Sides ... { Ends ... Stiffeners ... Brackets, Stays ...	...	...	31	25	9 x 3 1/2 x 40 none none none			
		...	...	44	44				
		...	...	44	44				
		...	...	7 x 3 x 40	none				
HATCH BEAMS	Number ... Spacing ... Scantling and Sketch ... 	...	...	4	3	none. none. none.			
		...	...	4' - 7 1/2"	5' - 1/2"				
		...	...	15 x 32	15 x 32				
		...	...	3 x 3 x 40	3 x 3 x 40				
FORE AND AFTERS	Number ... Spacing ... Unsupported Lengths ... Scantling* and Sketch ... 	...	...	none	none	none. none. none.			
		...	...	none	none				
		...	...	none	none				
		...	...	none	none				
HATCH COVERS	Material ... Thickness ... How fitted ... Bearing Surface ...	...	...	W.P.	W.P.	W.P.			
		...	...	2 1/2	2 1/2	2 1/4			
		...	...	F. ✓ A.	F. ✓ A.	F. ✓ A.			
		...	...	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? none ✓ 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? Ringbolts for lashings provided. ✓									

Particulars of fiddle, funnel and ventilator coamings:—

Engine skylight on casing top of wood strongly constructed.  
 Fiddle openings protected by strong hinged plate covers.  
 Ventilator coamings on casing top in <sup>good</sup> condition.

Particulars of Flush Bunker Scuttles:—

None ✓

Particulars of Companionways:—

None. ✓

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

2 Ventilators on forecastle deck to crews quarters. Coamings 21" high x 6" dia x 30 Ventilator coamings  
 1 " " for deck to cargo hold " 27 " x 8 " x 32 constructed in  
 2 " " bridge deck to accommodation " 18 " x 6 " x 30 accordance with the  
 1 " " raised quarter deck to cargo hold " 30 " x 9 " x 32 ~~no means of closing~~ <sup>provided</sup> ~~provided~~

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

1 Air Pipe on forecastle deck to f. p. tank 9" high x 2" dia  
 1 " " raised quarter deck to a. p. tank 8 3/4" x 2"

Wood plugs & canvas covers  
 no snifting holes fitted.  
~~No means of closing air~~  
~~pipes provided~~  
 Wood plugs fitted to  
 all air pipes

Particulars of Gangway Cargo and Coaling Ports:—

None.



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
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— "SAINT AIDAN"—  
— GLASGOW REPORT NO 52446 —

*Recd 27.5.32*

**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 ... ..	81'-6"	3'-0"	24" x 15" <i>30" x 16"</i>	3 <i>3</i>	7.5 <i>10</i> } <i>17.5</i>	<i>16.3</i>
Forward Well ... ..	27'-10"	3'-6"	30" x 18" <i>6'-0"</i>	3 <i>3</i>	11.25 <i>18'-9", 32'-3"</i>	<i>9.3</i>

State position of each freeing port ... .. } After Well:— FROM BRIDGE BULKHEAD 13'-0", 39'-3", 60'-0"  
(F. and A. position and height above deck edge) } Forward Well:— " " " 1'-6", 8'-6", 14'-9" 4" ABOVE DECK  
9 " " "

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—

FITTED WITH BALANCED SHUTTERS

Additional area where sheer is less than standard.

~~Additional area where sheer is less than standard.~~



Particulars of Scuppers and Sanitary Discharge Pipes:—

There are no scupper pipes discharging below the freeboard deck. ✓  
 There is only one sanitary pipe discharging below the freeboard deck in the position shown ✓  
 in sketch. A storm valve is fitted at the ship's side ✓

Particulars of Side Scuttles:—

There are no side scuttles fitted below the freeboard deck.  
 Side scuttles in forecastle 7" dia. no deadlights fitted.  
 Side scuttles in bridge 8" dia. no deadlights fitted. ✓

Particulars of Guard Rails:—

Guard rails on forecastle deck. 3'0" high with 2 rods. Stanchions 4'6" apart. ✓

Particulars of Gangways, Lifelines, etc.:—

no gangway or lifeline is fitted in the forward well. <sup>arrangement for fitting</sup>

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'-6"	30 x 18	3	11.25	16.3
Forward Well ...	27'-10"	3'-0"	24 x 15	3	7.5	9.25
Note position of each freeing port ... After Well ... from bridge bulkhead 1'6", 8'6", 14'9" 9" above deck ✓ and A. position and height above deck edge) Forward Well: 13'0", 39'-3", 60'0" 4" " " ✓ Note whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— fitted with balanced 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
Peep Bulkhead ...								
Raised Quarter Deck Bulkhead ...	none	.28	3 x 3 x .38	30	none	none	✓	✓
Bridge, After Bulkhead ...								
Bridge, Forward Bulkhead ...	22 x 30	.30	5 x 3 x .40 BA	30	brackets top & bottom	none	✓	✓
Forecastle Bulkhead ...	none	.28	2 1/2 x 2 1/2 x .28	25	none	4'-4" x 1'-9"	13"	✓
Trunk, Aft ...								
Trunk, Forward ...								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	18 x 31	.25	2 1/2 x 2 1/2 x .30	30	brackets at top	3'-11" x 1'-10"	22"	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).

Peep Bulkhead ...	
Raised Quarter Deck Bulkhead ...	none
Bridge, After Bulkhead ...	
Bridge, Forward Bulkhead ...	none
Forecastle Bulkhead ...	1 1/2" solid hinged wood doors: manipulated from both sides ✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	Hinged steel plate doors: manipulated from both sides ✓
Exposed Machinery Casings on Superstructure Decks ...	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	
Deckhouses on Flush Deck Ships ...	

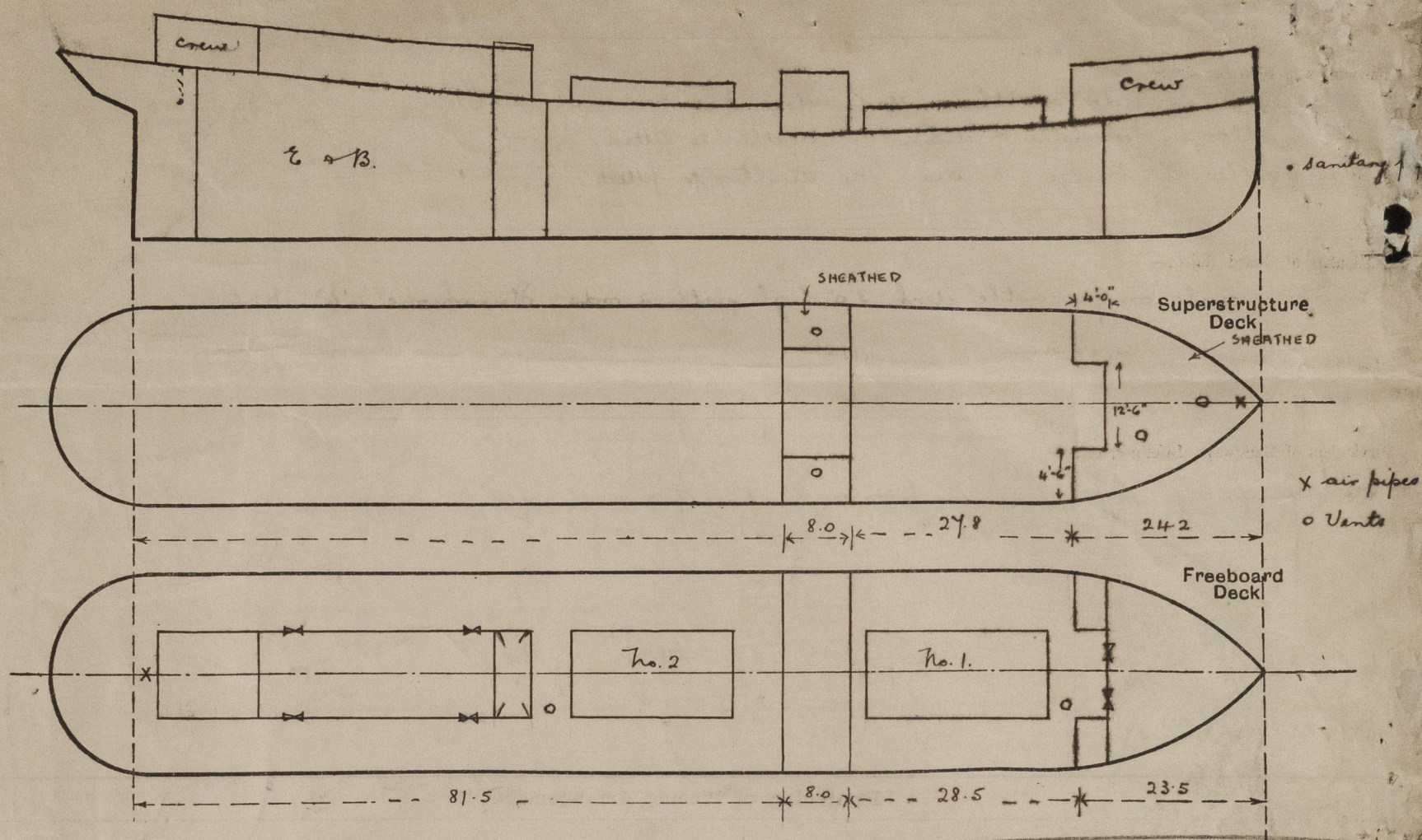


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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the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



$$\begin{aligned} \text{Fds} &= \frac{4' + 12.5}{21.5} = 2.32 \\ 23.5 - 2.32 &= 21.18 = 21' 2" \end{aligned}$$

State any special features in the construction of the ship:— This vessel is engaged in the British & Continental Coasting trade.  
Timber freeboard not required

Full displacement at 10'0" full draft = 688 tons      Tons per inch = 7.2 tons  
" " " " 11'0" " " = 763 "      " " " " = 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 the ship.  
No part of a special survey has been held at this time.

*[Signature]*

H. Munn

Builder's name and yard number Scott & Sons No 286

Names of sister ships Saint Barchan, Bonawe, and Balfron.

Owners J. & A. Gardiner & Co. Ltd.

Fee £ 5 : 2 : 0 Received by me *[Signature]*



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