

GLASGOW REPORT No. 5 2 5 2 4

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <u>Glasgow</u>	
having <u>Raised Quarter Deck, Bridge and Forecasts</u>					Date of Survey <u>May 1932</u>	
(Type of Superstructures.)						
Ship's Name <u>Saint Barchan</u>	Nationality and Port of Registry <u>British Glasgow</u>	Official Number <u>141931</u>	Gross Tonnage <u>356</u>	Date of Build <u>1919</u> <u>10 month</u>	Name of Surveyor <u>Roman Dobson</u>	
Moulded Dimensions: Length <u>141.5</u>		Breadth <u>23.66</u>		Depth <u>11.0</u>		
Moulded displacement at moulded draught = 85 per cent. of moulded depth				<u>677</u> tons		
Coefficient of fineness for use with Tables <u>.757</u>				Particulars of Classification <u>+ 100 A1.</u>		

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>11.0</u>	(a) Where D is greater than Table depth	Moulded Breadth (B) <u>23.66</u>
Stringer plate <u>.03</u>	(D - Table depth) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>5.68</u>
Sheathing on exposed deck	<u>(11.03 - 9.43) 1.60</u> = + <u>1.74</u>	Ship's Round of Beam = <u>7 inches</u>
T $\left(\frac{L-S}{L} \right) =$ ✓	(b) Where D is less than Table depth (if allowed)	Difference <u>1.32</u>
Depth for Freeboard (D) = <u>11.03</u>	(Table depth - D) R =	Restricted to
	✓	Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{1.32}{4} (1 - .782) = -.07$
	If restricted by superstructures	

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
* Poop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...	81.5	81.00	3.0	$\frac{3.0}{3.275} = .916$	74.20
" overhang ...					
Bridge enclosed... ..	8.0	8.00	7.0	✓	8.00
" overhang aft ...					
" overhang forward					
File enclosed	21.5 21.67	21.67	6.5	✓	21.67
" overhang ... ..	.7		6.5	✓	
Trunk aft					
" forward					
Tonnage opening aft ...					
" " forward					
Total	110.67	110.67			103.84

Standard Height of Superstructure	6.00
" " R.Q.D.	3.275
Deduction for complete superstructure	20.15
Percentage covered $\frac{S}{L} =$	78.20%
" " $\frac{S_1}{L} =$	78.20%
" " $\frac{E}{L} =$	73.41%
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	67.20%
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction =	20.15 x .6720 = 13.54

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	24.15	1	24.15	25.0	24.50	1	24.50
$\frac{1}{6}$ L from A.P. ...	10.75	4	43.00	10.0	9.48	4	37.92
$\frac{2}{6}$ L " ...	2.66	2	5.32	2.5	2.37	2	4.72
Amidships ...		4				4	
$\frac{3}{6}$ L from F.P. ...	5.31	2	10.62	5.0	4.75	2	8.30
$\frac{1}{6}$ L " ...	21.49	4	85.96	17.0	16.59	4	66.36
F.P. ...	48.30	1	48.30	32.0	38.00	1	38.00
Total ...			217.35				149.80

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

Length of enclosed superstructure forward of amidships = .13 L
 " " aft of " = .50

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{8}{2L} \right) = \frac{37.55}{18} (.75 - .3910) = + .75$$

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.

Addition for Winter and Winter North Atlantic Freeboard.

	<i>R.Q.</i>	Ft.
Depth to Freeboard Deck	=	14.04
Summer freeboard	=	3.33
Moulded draught (d)	=	<u>10.71</u>

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 2.68 = $2\frac{3}{4}$

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 788$$

Tons per inch immersion at summer load water line

$$T = 4.3$$
$$\text{Deduction} = \frac{\Delta}{40 T} \text{ inches}$$
$$= 2.40$$
$$= 2 \frac{3}{4}$$

TABULAR FREEBOARD corrected for Flush Deck (if required)							14.39
Correction for coefficient					$\frac{757 + 680}{1.86} \times 14.39$		15.20
					+	-	
Depth Correction	...	...	...	...	1.74	✓	
Deduction for superstructures	...	...	...	...	✓	13.54	"
Sheer correction	...	...	...	...	.75	✓	
Round of Beam correction	...	...	...	...	✓	.07	
Correction for Thickness of Deck amidships	...	...	...	...	36.00		
Other corrections, scantlings, etc.	...	...	...	...	✓	✓
					38.49	13.61	+ 24.88
					Summer Freeboard = 40.08		

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

Tropical Fresh Water Line above Centre of Disc	...	...	4 ³ / ₄
Fresh Water Line	"	"	2 ³ / ₄
Tropical Line	"	Limited	2
Winter Line	below	"	2 ³ / ₄
Winter North Atlantic Line	"	"	4 ³ / ₄

Tropical Fresh Water Freeboard ...	...	2-11 ³ / ₄
Fresh Water	"	3-1 ¹ / ₄
Tropical	" <i>limited</i>	3-2
Winter	"	3-6 ³ / ₄
Winter North Atlantic	"	3-8 ³ / ₄

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway			No 1	No 2	Coal Hatch On Casing, 3p.						
Dimensions of Hatchway			23'-3" x 14'-0"	20'-6" x 14'-0"	5'-3" x 13'-1"						
COAMINGS	{	Height above Deck	30"	25"	9"						
		Thickness	Sides	.44	.44	.40					
			Ends	.44	.44	.40					
		Stiffeners	7 x 3 x .44	None	.40						
		Brackets, Stays	None	None	None						
HATCH BEAMS	{	Number	Four	Three							
		Spacing	4'-5" @ 1'-7" x 15	5'-1 1/2"							
		Scantling and Sketch	7x15 15 x 32 4 @ 3 x 3 x .40	Plate 15 x 32 11 Angles 3 @ 3 x 3 x .40	None						
		Bearing Surface	3	3							
FORE AND AFTERS	{	Number									
		Spacing									
		Unsupported Lengths									
		Scantling* and Sketch	None	None	None						
		Bearing Surface									
HATCH COVERS	{	Material	Wood	Wood	Wood						
		Thickness	2 1/2"	2 1/2"	2 1/2"						
		How fitted	Trap	Trap	Trap						
		Bearing Surface	3"	3"	3"						
Spacing of Cleats			24"	24"	24"						
Number of Tarpaulins			Two	Two	Two						
*Are wood fore and afters steel shod at all bearing surfaces? <input checked="" type="checkbox"/>											
Are battens and wedges efficient and in good condition? <input checked="" type="checkbox"/>											
Are tarpaulins in good condition and in accordance with rule requirements? <input checked="" type="checkbox"/>											
Are lashings provided in accordance with rule requirements? <input checked="" type="checkbox"/>											

Particulars of fiddle, funnel and ventilator coamings :—

Explosive Skylight on Casing top of wood strongly constructed
Fiddle openings protected by strong hinged plate covers
Ventilator coamings on Casing top in good condition

Particulars of Flush Bunker Scuttles :—

None.

Particulars of Companionways :—

None.

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

2 on Forecastle to Crew Quarters	28" in height 6" dia	x .30	
1 - Upper Dk to Hold	27" . . . 8" . . .	x .32	Fitted with wood plugs
2 - Bridge to Crew Accommodation	18" . . . 6" . . .	x .30	
1 - R. Q. Dk. to Hold	30" . . . 9" . . .	x .32	and Canvas covers

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

One @ 2' dia on Forecastle Dk. 9' in height to Fore Peak
- . 2' . on R. Q. Dk. 30' . . . after Peak. Fitted with canvas covers

Particulars of Gangway Cargo and Coaling Ports :—

None



Particulars of Scuppers and Sanitary Discharge Pipes:—

No scuppers discharging below freeboard deck.
one sanitary discharge below freeboard deck from crew quarters
ap. fitted with storm valve. at ships side

Particulars of Side Scuttles:—

No side scuttles fitted below freeboard deck.
Side scuttle in Forecastle 7" dia No deadlights
Do Bridge 8" Do

Particulars of Guard Rails:—

on Forecastle 3'-0" in height with 2 Rods. Stanchions spaced 4'-6" apart
on Bridge steel bulwark 36" in height

Particulars of Gangways, Lifelines, etc.:—

Gangway or hatchway fitted with hemp life line through
Stanchions fitted into sockets rivetted to hatch side.

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	81.5	3.0	2.0 x 1.25 * 2.0 x 1.5 +	3 3	7.5 9.0	16.20 #
Forward Well	28.5	3.5	2.5 x 1.5 *	3	11.25	9.35 #

State position of each freeing port } After Well:— 6.3, 12.0, 19.0, 33.5, 39.5 & 64.0 from Bridge Bulk
(F. and A. position and height above deck edge) } Forward Well:— 1.5, 8.5 & 14.3 from bridge fls

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Ports made & fitted with balanced shutters
+ " " bars

Additional area where sheer is less than standard.

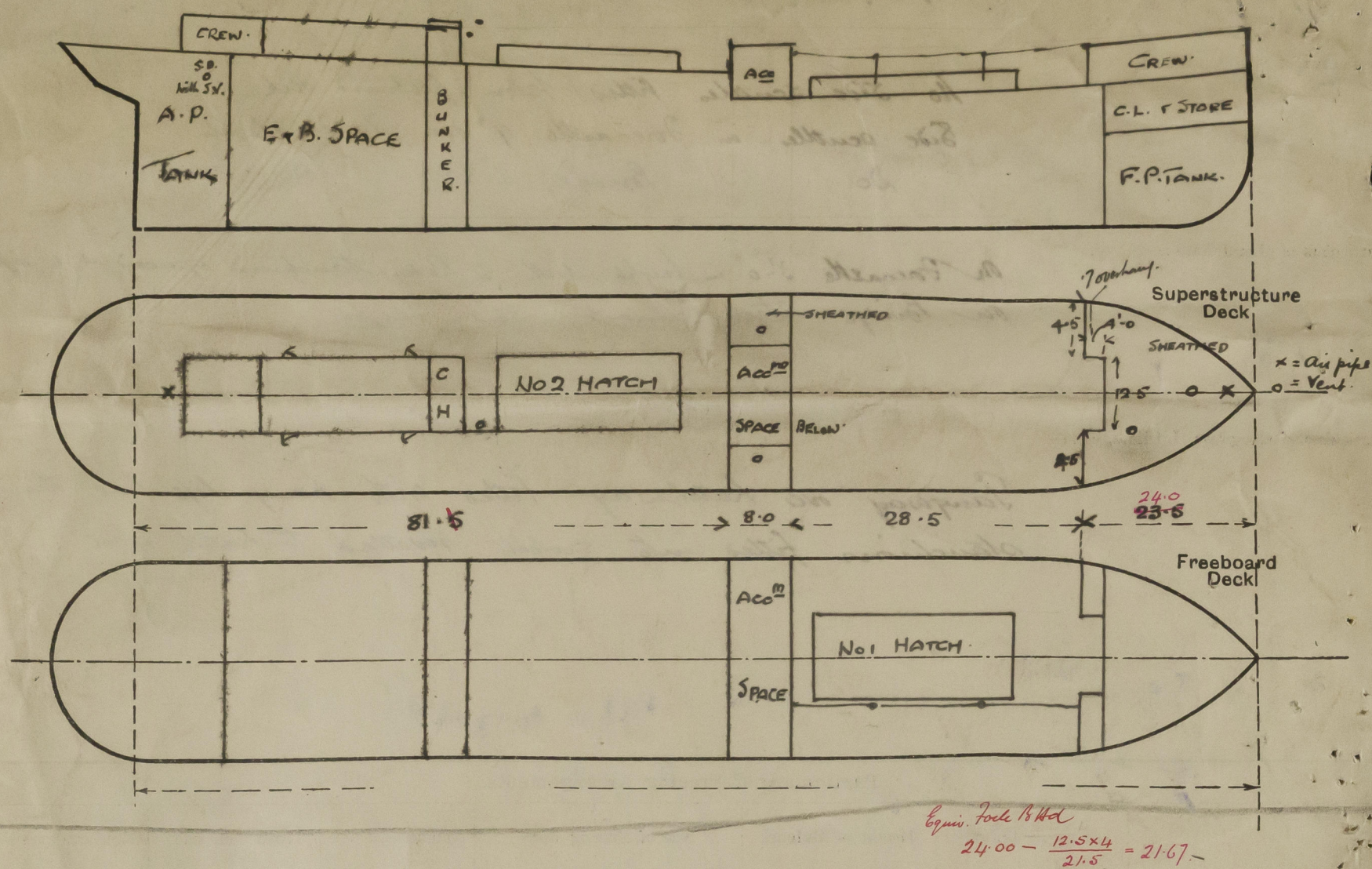
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	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 .30	30	None	None	✓	
Bridge, After Bulkhead								
Bridge, Forward Bulkhead	22 x .30	.28	6 x 3 x .34	30	Bkt 3rd Btm	None	✓	
Forecastle Bulkhead ... ..	.28	.28	2 1/2 x 2 1/2 x .30	30	None	4'-6" x 2'-0"	12"	
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	Bkt at Top	3'-11" x 1'-11"	18"	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	None
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	None
Forecastle Bulkhead	1 1/2" Solid wood doors (hinged) manipulated from both side
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	✓

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:—

This vessel is engaged in the British and Continental Coasting Trade. Timber freeboard not required

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

This vessel has been examined whilst on the Slipway and No 3 Survey is now being carried out, and will be completed this month.

Builder's name and yard number

Scott & Sons. Bowling

Names of sister ships

Saint Aidan

Owners

J. & A. Gardner & Co. Ltd.

Fee £ 5 ; 2 ; 0

Received by me



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