

DISCOUNT
Newcastle-on-Tyne

B.T. CO.

SECTION

No

Rpt. C.11.
18300
1890

Lloyd's Register of Shipping. SURVEYS FOR FREEBOARD.

Index No. 19477
(For London Office only.)
23 APR 1932
358

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Roof Bridge Forecastle
N.N. Rio TEUCO

Port of Survey Newcastle on Tyne

Date of Survey 21 April 1932

Name of Surveyor A.E. A. Kester

Particulars of Classification +100 A1

(Type of Superstructures.)

Ship's Name VOLUNTAS Nationality and Port of Registry British Official Number 143224 Gross Tonnage 5655 Date of Build 1907

City of Baltimore London

Moulded Dimensions: Length 425 Breadth 52.78 Depth 32.0

Moulded displacement at moulded draught = 85 per cent. of moulded depth 13426 tons

Coefficient of fineness for use with Tables 770

Depth for Freeboard (D) 32.05

Moulded depth 32.0

Stringer plate 0.05

Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$

Depth for Freeboard (D) = 32.05

Depth correction

(a) Where D is greater than Table depth
(D - Table depth) R = (32.05 - 28.33) 3 = +11.16

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

If restricted by superstructures

Round of Beam correction

Moulded Breadth (B) 52.78

Standard Round of Beam = $\frac{B \times 12}{50} =$ 12.67

Ship's Round of Beam = 13.4

Difference 0.58

Restricted to

Correction = $\frac{\text{Diff.}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{0.58}{4} \times \left(1 - \frac{38.41}{42} \right) = -0.06$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	37.5	37.5	7'-11"		37.5	
" overhang ...						
R.Q.D. enclosed ...						
" overhang ...						
Bridge enclosed...	181.0	181.0	7'-11"		181.0	
" overhang aft ...						
" overhang forward	42.5	42.5	7'-11"		42.5	
Forecastle enclosed	1.5	1.5	7'-11"		1.5	
" overhang ...						
Trunk aft ...						
" forward ...						
Tonnage opening aft ...						
" forward						
Total ...	262.5	262.5			262.5	

Standard Height of Superstructure 7.5

" " R.Q.D. 42

Deduction for complete superstructure 42

Percentage covered $\frac{S}{L} =$ 61.75

" " $\frac{S_1}{L} =$ 61.59

" " $\frac{E}{L} =$ 61.59

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

Percentage from Table, Line B. 48.70
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required) ✓

Deduction = 48.70 + 42 - 20.45

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	52.5	1		52.50	51	51	1		51.00
$\frac{1}{4}$ L from A.P. ...	23.30	4		93.44	22.12	22.12	4		88.48
$\frac{3}{4}$ L " ...	5.78	2		11.56	5.5	5.53	2		11.06
Amidships ...	0	4					4		0
$\frac{3}{4}$ L from F.P. ...	11.56	2		23.12	12.8	12.84	2		25.68
$\frac{1}{4}$ L " ...	46.72	4		186.88	51.35	51.35	4		205.40
F.P. ...	105.00	1		105.00	119.0	119.00	1		119.00
Total ...				472.50					500.62

Mean actual sheer aft = Defic not less than 75%

Mean standard sheer aft

Mean actual sheer forward = Excess

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = 21 L

" " aft of " = 21.5 L

Correction = $\frac{\text{Difference between sums of products}}{18} \left(75 - \frac{S}{2L} \right) =$ $\frac{28.12}{18} (75 - 309) = -69$

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.

Depth to Freeboard Deck = 32.05

Summer freeboard = 6.21

Moulded draught (d) = 25.84

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.46

Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line $\Delta =$ 12770

Tons per inch immersion at summer load water line $T =$ 45.05

Deduction = $\frac{\Delta}{40 T}$ inches = 7.08

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient 770 + 68

136

Depth Correction ... 11.16

Deduction for superstructures ... 20.45

Sheer correction ... 0.69

Round of Beam correction ... 0.06

Correction for Thickness of Deck amidships ... 0

Other corrections, scantlings, etc. ... 0

Summer Freeboard = 74.56

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

Tropical Fresh Water Line above Centre of Disc ...		Tropical Fresh Water Freeboard ...	
Fresh Water Line " " ...		Fresh Water " " ...	
Tropical Line " " ...		Tropical " " ...	
Winter Line below " " ...	<u>6.46</u>	Winter " " ...	<u>6.46</u>
Winter North Atlantic Line " " ...		Winter North Atlantic " " ...	

1906 S 6-2 1/2
W 6-8 1/2
0 1/2

Lloyd's Register
Foundation
1906 assignment

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										Bunker Latches	Bunker Hatch
Description of Hatchway	Nº 1 for 5 on U. SK.	Nº 2 on U. SK.	Nº 3 on B. SK.	Nº 4 on B. SK.	Nº 5 on B. SK.	Nº 6 on U. SK.	Nº 7 on U. SK.	on B. SK. transverse	on B. SK. longitudinal	on U. SK. transverse	
Dimensions of Hatchway	20'-10" x 16'	29'-2" x 16'	18'-4" x 16'	8'-4" x 17'	20'-10" x 16'	29'-2" x 16'	25' x 16'	3'-9" x 5'-6"	8' x 2'-6"	7' x 8' x 2'-6"	
COAMINGS	Height above Deck	32"	32"	32"	32"	32"	32"	32"	32"	9' x 3' x 40"	
	Thickness	.45	.45	.45	.45	.45	.45	.45	.45	5	
	Sides	.40	.40	.40	.40	.40	.40	.40	.44		
	Stiffeners	none	none	none	none	✓	✓	✓	✓		
Brackets, Stays	✓	1 Borehole in Centre	✓	✓							
HATCH BEAMS	Number	1	3	9-2		10-5	7-3 1/2	8-4			
	Spacing	10-5	7-3 1/2	2 1/2 x 2 1/2 x 30	none						
	Scantling and Sketch	2 1/2 x 2 1/2 x 30 25' x 40' 34' x 40' 4 x 3 1/2 x 40'	as Nº 1	30' x 40' 24' x 40' 2 x 2 1/2 x 30		as Nº 3	as Nº 1	as Nº 1	✓	✓	
	Bearing Surface	3"	3"	3"		3"	3"	3"			
FORE AND AFTERS	Number	3	3	3	3	4-3	4-3	4-3			
	Spacing	4-0	4-0	4-0	4-3	10-5	7-3 1/2	9-4			
	Unsupported Lengths	10-5	7-3 1/2	9-2	3 x 3 x 40				✓	✓	
	Scantling* and Sketch	1 @ 1 1/2 x 2 1/2 x 30 2 @ 1 1/2 x 2 1/2 x 30 2 @ 1 1/2 x 2 1/2 x 30	1 @ 1 1/2 x 2 1/2 x 30 2 @ 1 1/2 x 2 1/2 x 30	as Nº 1	2 @ 1 1/2 x 2 1/2 x 30 Nº 1	as Nº 1	as Nº 2	as Nº 2			
Bearing Surface	2 1/2"	2 1/2"	2 1/2"	3"	3"	3"	3"				
HATCH COVERS	Material	Hatch Covers			2 1/2" x 3"	wood		wood	wood	wood	
	Thickness							3"	3"	3"	
	How fitted				Transversely			Trans	Trans	Trans	
	Bearing Surface	2' at sides			2 1/2" at fore & afters			2	1 1/2	1 1/2	
Spacing of Cleats	Cleats generally			22" apart	46" at ends		24" & 10"	28" & 6"	28" & 6"		
Number of Tarpaulins	Three to weather deck			hatches				2	2	2	

*Are wood fore and afters steel shod at all bearing surfaces?
Are battens and wedges efficient and in good condition?
Are tarpaulins in good condition and in accordance with rule requirements?
Are lashings provided in accordance with rule requirements?

Yes
Yes
Yes
Yes

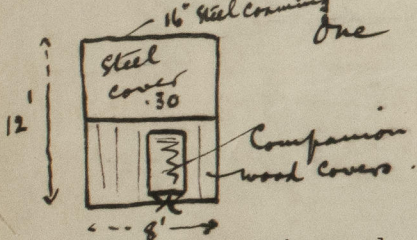
Particulars of fiddley, funnel, and ventilator coamings:—

Fiddle, funnel, and ventilator coamings:—
Stokehold gratings covered by strong steel hinged covers. ✓
Fiddle, funnel & ventilators in efficient condition. ✓
Engine skylight of steel strongly constructed. ✓

Particulars of Flush Bunker Scuttles :—

Two scuttles 24" dia. on Bridge Deck of Cast Steel
fitted with bayonet joints. ✓

Particulars of Companionways :—



One wood Companion incorporated with hatch on
loop deck 3' x 6' having 22" sill & entrance doors 2'-3" x 3'-3"

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

Ventilators in exposed positions on freeboard and superstructure decks:—				
1 @ 7" dia	on	Deck	to Fore Peak	Combing 27 $\frac{3}{4}$
1 @ 7" "	"	"	"	9 \times 15
2 @ 7" "	"	"	to No 1 Hold	30 \times 30
2 @ 18" "	"	"	5" dia	11 \times $\frac{1}{4}$
2 above funnels	"	"	"	30 \times 36
1 @ 20" dia.	on	U. S. K. fore wall	to tween deck	23 \times $\frac{1}{4}$
1 @ 9" "	on	Bridge	to tween deck	30 \times $\frac{1}{4}$
2 @ 12" "	"	"	" hold	27 \times $\frac{1}{4}$
2 @ 12" "	"	"	"	9 $\frac{1}{2}$ \times $\frac{1}{4}$
2 @ 15" "	on	U. S. K. aft. wall	to Hold	9 $\frac{1}{2}$ \times $\frac{1}{4}$

Ventilators Constructed
in accordance with
the Rules & closed with
wood plugs & canvas covers

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

Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :-

2 @ 12" dia - 10' x 40'
 2 @ 16" dia - 10' x 30'
 7 @ 6-10" dia - 15' x 30' x 1/4"

Air pipes fitted with screwed caps flush with deck.

Particulars of Gangway Cargo and Coaling Ports :—

none

B.T. COPY

City of Batavia

Report No 88472

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS
on the Bridge space

Description of Hatchway	No 3 on U. SK.	No 4 on U. SK.	No 5 on U. SK.						
Dimensions of Hatchway	25' x 16'	8-4 x 17'	20-10 x 16'						
COAMINGS	Height above Deck	11 1/2'	11 1/2' x 3 x .50						
	Thickness	x 3 1/2	B.A.						
	Stiffeners	x .50 B.A.	B.A.						
	Brackets, Stays	✓	✓						
HATCH BEAMS	Number	2	1						
	Spacing	8-4	10-5						
	Scantling and Sketch	2 1/2 x 2 1/2 x .30 18 at ends x .50	3 x 3 x .35 2 1/2 x 2 1/2 x .30 18 at ends x .50						
	Bearing Surface	3 x 3 x .30 3	3 x 2 1/2 x .35 3						
FORE AND AFTERS	Number	3	3						
	Spacing	4-0	4-3						
	Unsupported Lengths	8-4	8-4						
	Scantling* and Sketch	2 @ T 7 x 5 x .40 4 1 @ T 2 1/2 x 2 1/2 x .30 T 9 x .40	2 @ T 8 x .40 1 @ T 10 x .40						
HATCH COVERS	Bearing Surface	3 x 2	3 x 2						
	Material	wood	wood						
	Thickness	2 1/2	2 1/2						
	How fitted	Trans.	Trans.						
HATCH COVERS	Bearing Surface	2 at sides	2 1/2 at fore & afters						
	Spacing of Cleats	24 x 12 at ends	24 x 12						
HATCH COVERS	Number of Tarpaulins	2	2						

Are wood fore and afters steel shod at all bearing surfaces? ✓

Are battens and wedges efficient and in good condition?

Are tarpaulins in good condition and in accordance with rule requirements?

Are lashings provided in accordance with rule requirements?

yes
yes
yes

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Poop Bulkhead

20 x .45

.40

6 x 3 1/2 x .45 L

28"

alternates
Bracketed2 @ 5-3 x 4
wide

20"

7-11

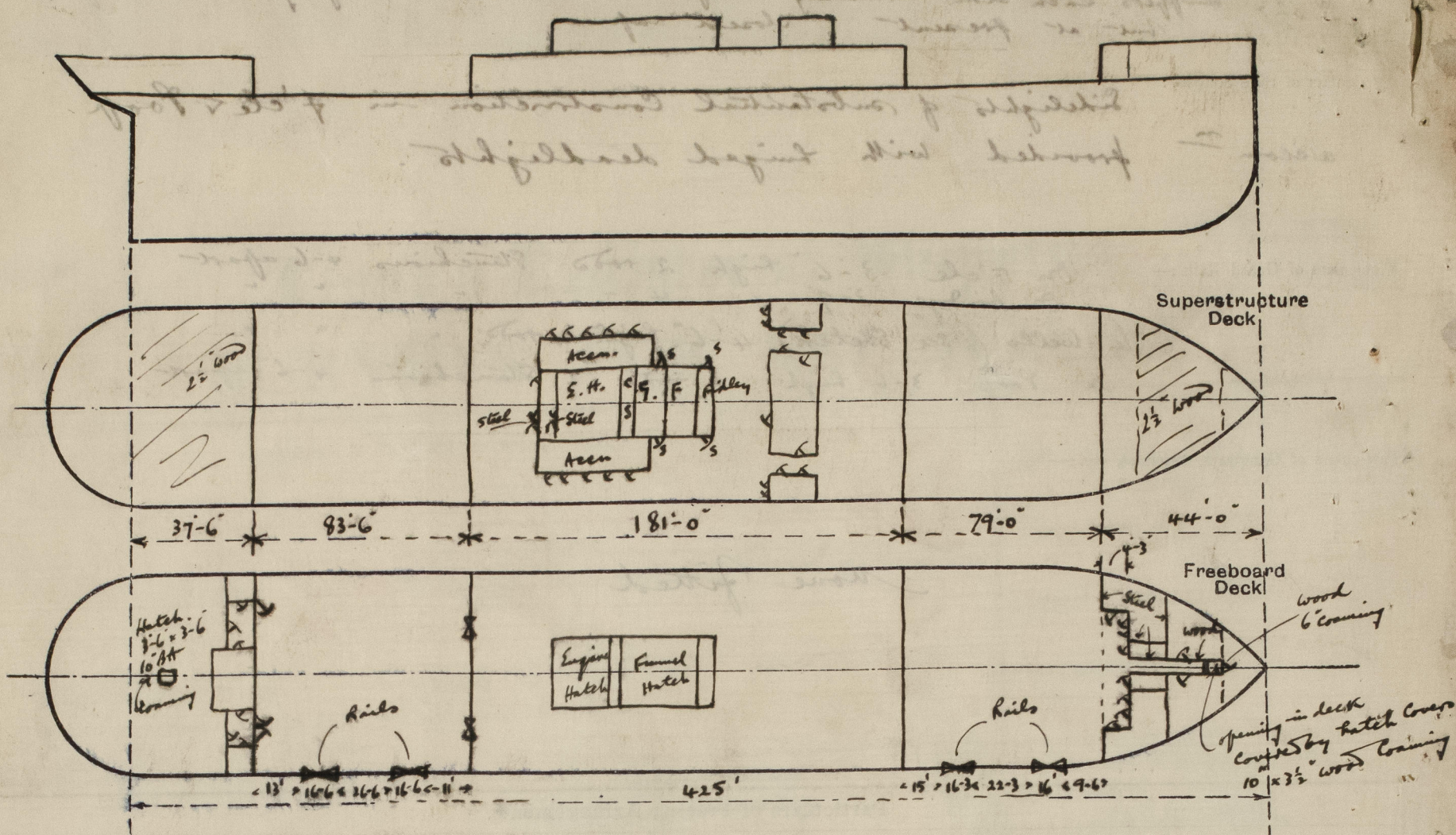
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from Both Sides.

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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:—



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

	Σ. Δ	T. P. I.
25' Bk. dr.	12208	44.9
26' - -	12744	45.05
27' - -	13285	45.20

28. 84
27
26. 05

Builder's name and yard number.

Swan Hunter & Wigham Richardson Ltd. No 779

Names of sister ships.

Owners

Ellerman & Bucknall S.S. Co. Ltd.

Fee £

13 : 12 : 0

Received by me



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