

21 MAR 1934

Rpt. C.11.

Index. No. 34371
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

GLASGOW REPORT No. 54330

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~
having Poep Bridge & Forecastle

(Type of Superstructures.)

Ship's Name WAITAKI	Nationality and Port of Registry New Zealand DUNEDIN	Official Number 2200	Gross Tonnage 2212	Date of Build 1934
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Moulded Dimensions: Length **270** Breadth **42.5** Depth **23**
Moulded displacement at moulded draught = 85 per cent. of moulded depth **4510** tons
Coefficient of fineness for use with Tables **.7032**

Port of Survey Glasgow
Date of Survey while building
Name of Surveyor A. Watson
Particulars of Classification +100 A1 Contemp.

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... 23.00	(a) Where D is greater than Table depth (D - Table depth) R = 2.08	Moulded Breadth (B) 42.5
Stringer plate (.34)	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 10.2$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = 10.25
Depth for Freeboard (D) = 23.03		Difference .05
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.05}{4} \times .4555 = .0056$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poep enclosed ...	26.83	26.83	7'-3"		26.83	Standard Height of Superstructure 6.2
" overhang ...						" " R.Q.D. ✓
R.Q.D. enclosed ...						Deduction for complete superstructure 33.00
" overhang ...						Percentage covered $\frac{S}{L} = .5445$
Bridge enclosed ...	95.50	95.50	7'-3"		95.50	" $\frac{S_1}{L} = .5445$
" overhang aft ...						" $\frac{E}{L} = .5445$
" overhang forward ...						Percentage from Table, Line A. (corrected for absence of forecastle (if required))
F'cle enclosed ...	24.70	24.70	7'-3"		24.70	Percentage from Table, Line B. (corrected for absence of forecastle (if required)) 40.45
" overhang ...						Interpolation for bridge less than 2L (if required)
Trunk aft ...						Deduction = -13.35
" forward ...						
Tonnage opening aft ...						
" forward ...						
Total ...	147.03	147.03			147.03	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	37.00	1		37.00	39.00	39.00	1		39.00	Mean actual sheer aft = excess
1/4 L from A.P. ...	16.46	4		65.84	17.25	17.25	4		69.00	Mean actual sheer forward = excess
2/4 L " ...	4.07	2		8.14	4.25	4.25	2		8.50	
Amidships ...		4					4			Length of enclosed superstructure forward of amidships = .17
3/4 L from F.P. ...	8.14	2		16.28	8.50	8.50	2		17.00	" " aft of " = .18
1/4 L " ...	32.93	4		131.72	34.50	34.50	4		138.00	
F.P. ...	74.00	1		74.00	78.00	78.00	1		78.00	
Total ...	333.00			332.98					349.50	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{16.52}{18} (.75 - .2722) = .44$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **23.11** Ft.
Summer freeboard = **2.90**
Moulded draught (d) = **20.21**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = **5.05**Addition for Winter North Atlantic Freeboard (if required) = **2**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ **4797**

Tons per inch immersion at summer load water line

 $T =$ **23.1**Deduction = $\frac{\Delta}{40T}$ inches $=$ **5.19****5.44**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.7032 + .68}{1.36} = \frac{1.383}{1.36}$

Depth Correction ... **10.46**
Deduction for superstructures ... **13.35**
Sheer correction ... **.44**
Round of Beam correction ... **.21**
Correction for Thickness of Deck amidships ... **1.00**
Other corrections, scantlings, etc. ... **13.80**

Summer Freeboard = **34.89**

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

Tropical Fresh Water Line above Centre of Disc ... **10 1/4**
Fresh Water Line " " ... **5 1/4**
Tropical Line " " ... **5**
Winter Line below " " ... **5 1/4**
Winter North Atlantic Line " " ... **7 1/4**

Tropical Fresh Water Freeboard ... **2 - 0 1/2**
Fresh Water " " ... **2 - 5 1/2**
Tropical " " ... **2 - 5 3/4**
Winter " " ... **3 - 3 3/4**
Winter North Atlantic " " ... **3 - 5 3/4**

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway			Nº 1	Nº 2	Nº 3	Nº 4	Nº 3A hatch on bridge			
Dimensions of Hatchway			14'-3 1/2" x 15'	22'-5 1/2" x 15'	16'-4" x 15'	14'-3 1/2" x 15'	11'-5" x 15'			
COAMINGS	Height above Deck Thickness Stiffeners Brackets, Stays	Sides	30"	30"	30"	30"	30"	trunked to upper deck		
		Ends	46	46	46	46	46			
			44	44	44	44	44			
			7" B/A	7" B/A	7" B/A	7" B/A	7" B/A			
			one @ 1 1/2 dia	two @ 1 1/2 dia	one @ 1 1/2 dia	one @ 1 1/2 dia	one @ 1 1/2 dia			
HATCH BEAMS	Number Spacing Scantling and Sketch		5'-6 1/2" - 5'-10 1/4"	5'-6 1/2" - 5'-6 1/4"	5'-6 1/2" - 5'-10 1/4"	5'-6 1/2" - 5'-10 1/4"	5'-8 1/2"			
			2'-10 1/4"	5'-0 1/4" - 5'-6 1/2"	4'-11 1/4"	2'-10 1/4"				
			14 1/2 x 34 plate					12 x 30 plate		
			3 1/2 x 3 x 40 angles					3 x 3 x 42 angles		
Bearing Surface			5 1/2"				3 1/2"			
FORE AND AFTERS	Number Spacing Unsupported Lengths Scantling* and Sketch		✓	✓	✓	✓	✓			
Bearing Surface										
HATCH COVERS	Material Thickness How fitted Bearing Surface		Spun							
			3"							
			6 x 4							
			3"							
Spacing of Cleats					24"					
Number of Tarpaulins					3					

*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? ✓

Particulars of fiddley, funnel and ventilator coamings :—

Stokehold gratings covered by strong steel hinged covers. Fidley & funnel ventilators in efficient condition. Engine skylight of steel strongly constructed.

Particulars of Flush Bunker Scuttles :—

none

Particulars of Companionways :—

one steel comp. on port side of casing on bridge deck $7' \times 2'-6" \times 7'$ high leading to bridge space, hinged wood door 2" thick operated both sides with $9" \text{ sill} \times 12" \text{ weathervane}$.

one steel comp. on poop deck to poop space $5'-0" \times 2'-6" \times 7'$ high, hinged steel door operated both sides with $15" \text{ sill}$.

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

On fore & aft 2 @ 24" [✓] diam. coamings 36" x 40" [✓] to hold 8 twelve decks.

" fld. " 4 @ 12" " mushroom vents 36" high to tween dks. ✓
 " " 4 @ 30" " drain derrick posts to hold 4 tween dks. ✓
 " " 2 @ 2" " coaming 30" x 40" 6 posts 6" dia. ✓
 " " 2 @ 2" " " 30" x 40" 6 posts 6" dia. ✓
 On bridge 8 @ 12" " 12" high mushroom vents 6" dia. ✓
 " " 26 @ 6" " coaming 30 x 30 to bridge spars. ✓
 " " 3 @ 9" " " 30 x 32 to " ✓

All ventilators constructed
in accordance with Rules
& coamings closed with wood
plugs & canvas covers. ✓

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

On forest one air pipe 20" high by 3" diam from fire pump
18" " " 2" " from D.B.

18	✓	3"	0
36	✓	2 1/2	
36	✓	2	
36	✓	3 1/2	
36	✓	3	
18	✓	2 1/2	
18	✓	2	
18	✓	3	agt. pend.

All air pipes are closed
with canvas covers.

Particulars of Gangway Cargo and Coaling Ports:—

None.

Waitaki

Particulars of Scuppers and Sanitary Discharge Pipes — Sanitary pipes from bridge space & houses on bridge, and scuppers from bridge deck led overboard and below frub and deck & fitted with non return valves ^{of gunmetal} at ship's side.

Maternal

Particulars of Side Scuttles :

Side scuttles in bridge & foosle fitted with hinged deadlights.
No side scuttles below freeboard deck.

All scuttles of substantial construction.

Particulars of Guard Rails :—

Steel bulwark on fwd. deck in wells 4'-0 high efficiently constructed & supported.

Guard rails on forecastle, bridge & poop 3'-6" high with three rods
& stanchions spaced 4'-8" apart.

Particulars of Gangways, Lifelines, etc. :—

Provision for lifeline in way of after well.
(Crew in bridge.)

Suball provision now made in forward well.

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	59.21 ✓	4' 0"	4' 0" x 1' 8"	3	20' 0" \oint	12.42 ✓
Forward Well	64.75 ✓	4' 0"	4' 0" x 1' 7"	3	21.0" \oint	12.97 ✓

State position of each freeing port } After Well:— from bridge to fore side of ports 5'-3" — 20'-6" — 35'-6"
 (F. and A. position and height above deck edge) } Forward Well:— " " " " 5'-3" — 20'-6" — 35'-0"

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— hinged shutters x 2 wds
 " " above deck.

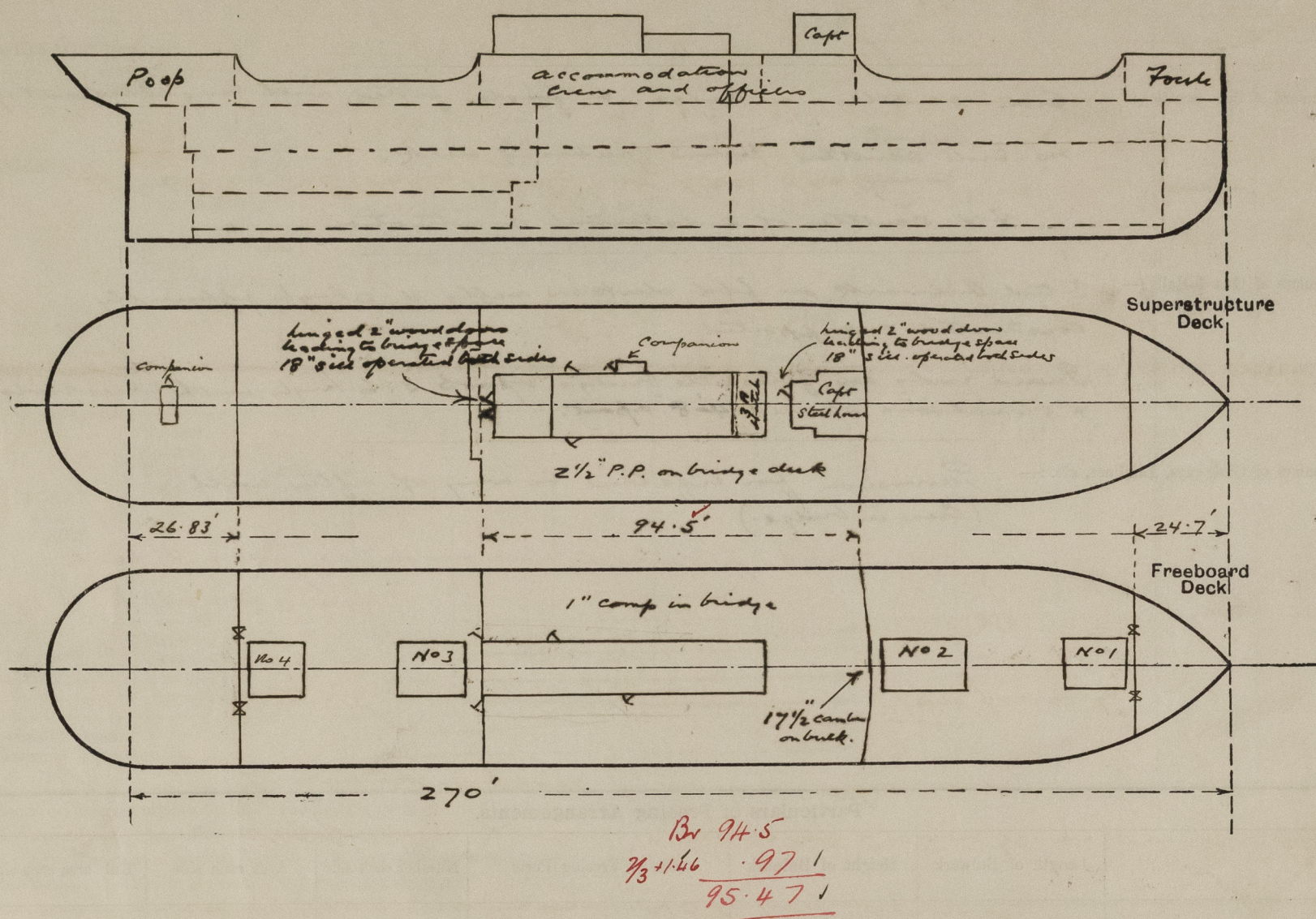
Additional area where sheer is less than standard.

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	✓ 31	31	5×3×32L	27½"	lugged	5'-0"×3'-1"	18"	
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead	25	25	4×3×28L	30"	none	4'-6"×2'-3"	18"	
Bridge, Forward Bulkhead	35✓	35	7×3×40L	26✓	lugged✓	none	—	
Forecastle Bulkhead	25	25	3½×3×32L	26	none	5'-0"×3'-1"	18"	
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓							
Exposed Machinery Casings on Super-structure Decks	34✓	30	3×2½×30	24½	bracket top	5'-0"×2'-6"	18✓	7'-10"×2'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	40✓	26✓	3×2½×30	24½	do.	5'-0"×2'-2"	12	7'-3"
Deckhouses on Flush Deck Ships ...	✓							

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	...	...	...	2 1/2" ✓ Shifting boards in riveted channels
Raised Quarter Deck Bulkhead	...	✓		
Bridge, After Bulkhead	...	...	...	hinged wood doors solid 2" thick (manip from both sides)
Bridge, Forward Bulkhead	...	...	...	noopenings ✓
Forecastle Bulkhead	...	...	...	2 1/2" ✓ Shifting boards in riveted channels
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	...	✓		
Exposed Machinery Casings on Superstructure Decks	...	...	...	1" steel hinged doors (manipulated both sides)
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	...	...	...	wood hinged doors 1" panel (manipulated both sides)
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:— *New Vessel — see G.L. Report (prelim.) No. 53737.*

Vessel ^{to be} engaged in New Zealand Coasting Trade.

Timber freeboard NOT now required.

*Approved profile & midship section plans forwarded for reference.
 Freeboard request form herewith.*

<i>Draught</i> (full.)	<i>Displacement</i> (full.)	<i>Tonnage</i>
18.64	4280	22.7
20.64	4805	23.1
	8	
	<u>4797</u>	

$$\frac{20 \times 31}{3} + 22.1 =$$

Builder's name and yard number *Alexander Stephen & Sons Ltd.* No. 538.

Names of sister ships —

Owners *The Union Steamship Co. of New Zealand*

Fee £ *12 : 0 : 0*

Received by me



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