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Index. No. 32998
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for ~~Steamer, Sailing Ship, Tanker~~ **MOTOR SHIP**
having **Raised Quarter Deck, Bridge & FORECASTLE**

Port of Survey **AUCKLAND. N.Z.**

Date of Survey **SEPT 1936**

Name of Surveyor **W. RICHARD SMITH**

Particulars of Classification **+ 100 A.I.**

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
PORT WAIKATO	BRITISH AUCKLAND.	160675	668.38	1929

Moulded Dimensions: Length **180.24** Breadth **25.2875** Depth **13' 3" 25**
Moulded displacement at moulded draught = 85 per cent. of moulded depth **1182 (estimated)** tons
Coefficient of fineness for use with Tables **.71**

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth 13.25	(a) Where D is greater than Table depth (D - Table depth) R = (13.29 - 12.00) x 1.385 = + 1.79	Moulded Breadth (B) 28.75
Stringer plate44	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ 6.90
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$		Ship's Round of Beam = 7 1/2"
Depth for Freeboard (D) = 13.29	If restricted by superstructures	Difference .60
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.60}{4} \times 209 = -.03$

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	105.00	105.00	4.00	-	105.00
" overhang					
Bridge enclosed	11.00	11.00	7.00	-	11.00
" overhang aft					
" overhang forward					
F'cle enclosed equivalent	26.39	26.39	7.00		26.39
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" " forward					
Total	142.39	142.39			142.39

Standard Height of Superstructure	6.0'
" " R.Q.D.	3.533'
Deduction for complete superstructure	24.0'
Percentage covered $\frac{S}{L} =$	79.1
" " $\frac{S_1}{L} =$	79.1
" " $\frac{E}{L} =$	79.1
Percentage from Table, Line A.	74.19
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction = 24 x 74.19 = - 17.80	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	28.00	1		28.00	3' 42.5"	48.10	1		48.10
1/4 L from A.P.	12.46	4		49.84	1' 18.80"	21.40	4		85.60
1/2 L "	3.08	2		6.16	8" 4.44"	5.29	2		10.58
Amidships	-	4		-	0	-	4		-
3/4 L from F.P.	6.16	2		12.32	8" 7.31"	7.31	2		14.62
3/4 L "	24.92	4		99.68	2' 4" 29.59"	29.59	4		118.36
F.P.	56.00	1		56.00	5' 0" 66.00"	66.00	1		66.00
Total				252.00					343.26

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{89.78426}{18} = 4.988$
If limited on account of midship superstructure.

Mean actual sheer aft = **Exam**
Mean standard sheer aft = **Exam**

Mean actual sheer forward = **Exam**
Mean standard sheer forward = **Exam**

Length of enclosed superstructure forward of amidships = **> 1L**
" " aft of " = **> 1L**

Actual height of R.Q.D. = **4.000**
Standard " = **3.533**
Difference = **.467**
" = **.560**

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Raised Quarter</p> <p>Depth to Freeboard Deck = 17.29</p> <p>Summer freeboard = 4.21</p> <p>Moulded draught (d) = 13.08</p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3.27 = 3 1/4"</p> <p>Addition for Winter North Atlantic Freeboard (if required) = 5 1/4"</p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line</p> <p>$\Delta =$</p> <p>Tons per inch immersion at summer load water line</p> <p>$T = 10.1 \text{ TONS.}$</p> <p>Deduction = $\frac{\Delta}{40 T}$ inches</p> <p>$d/4 = 3 1/4"$</p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient $\frac{.71 + .68}{1.36} = \frac{1.39}{1.36} =$</p> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td>1.79</td> <td>-</td> </tr> <tr> <td>Deduction for superstructures</td> <td>-</td> <td>17.80</td> </tr> <tr> <td>Sheer correction</td> <td>-</td> <td>1.80</td> </tr> <tr> <td>Round of Beam correction</td> <td>-</td> <td>0.03</td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td>48.00</td> <td>-</td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td>-</td> <td>.70</td> </tr> <tr> <td></td> <td>49.79</td> <td>19.63</td> </tr> </table> <p>Summer Freeboard = 50.4043</p>		+	-	Depth Correction	1.79	-	Deduction for superstructures	-	17.80	Sheer correction	-	1.80	Round of Beam correction	-	0.03	Correction for Thickness of Deck amidships	48.00	-	Other corrections, scantlings, etc.	-	.70		49.79	19.63
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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	5 1/2" 3 3/4"	Tropical Fresh Water Freeboard	3' 8 1/4" 10 3/4"
Fresh Water Line " "	3 1/4"	Fresh Water " "	3' 11 1/4"
Tropical Line " "	3 1/4" 1/2"	Tropical " "	3' 11 1/4" 4' 2"
Winter Line below " "	3 1/4"	Winter " "	4' 5 3/4"
Winter North Atlantic Line " "	5 1/4"	Winter North Atlantic " "	4' 7 3/4"

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	Nº 1	Nº 2	BOOBY HATCHES.						
Dimensions of Hatchway	29'11" x 18'0"	40'4" x 18'0"	Nº 1 HOLD ESCAPE.	TO RAMP STORE.	TO RAMP STORE.	TO RAMP STORE.	TO RAMP STORE.	TO RAMP STORE.	TO RAMP STORE.
COAMINGS	Height above Deck ... 3'6"	3'0"	3'6"	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"
	Thickness Sides ... 4"	4"	4"	4"	4"	4"	4"	4"	4"
	Stiffeners ... 7" x 3" x 48"	7" x 3" x 48"	7" x 3" x 48"	7" x 3" x 48"	7" x 3" x 48"	7" x 3" x 48"	7" x 3" x 48"	7" x 3" x 48"	7" x 3" x 48"
	Brackets, Stays ... SEE SKETCH	SEE SKETCH	SEE SKETCH	SEE SKETCH	SEE SKETCH	SEE SKETCH	SEE SKETCH	SEE SKETCH	SEE SKETCH
HATCH BEAMS	Number ... 5	8	5	8	5	8	5	8	5
	Spacing ... 5'0"	5'0"	5'0"	5'0"	5'0"	5'0"	5'0"	5'0"	5'0"
	Scantling and Sketch								
Bearing Surface									
FORE AND AFTERS	Number ...								
	Spacing ...								
	Unsupported Lengths								
	Scantling and Sketch								
Bearing Surface									
HATCH COVERS	Material ... WOOD	WOOD							
	Thickness ... 3"	3"							
	How fitted ... FOREAFT FOREAFT	FOREAFT							
	Bearing Surface ... 3"	3"							
Spacing of Cleats	24"	24"							
Number of Tarpaulins	3	3							

Particulars of fiddle, funnel and ventilator coamings:— MACHINERY CASINGS ON QR DECK:— EXCESS HEIGHT, FIDLEY PROTECTED WITH STEEL DECK HOUSE, STEEL HINGED COVERS PERMANENTLY ATTACHED, FITTED OVER GRATINGS, HINGED STEEL DOORS, HINGED STEEL DOORS, FUNNEL & VENTILATORS, COAMINGS EXCESS HEIGHT:— EFFICIENT.

Particulars of Flush Bunker Scuttles:—

NONE FITTED.

Particulars of Companionways:—

NONE. STEEL LADDERS FROM FORE DECK.

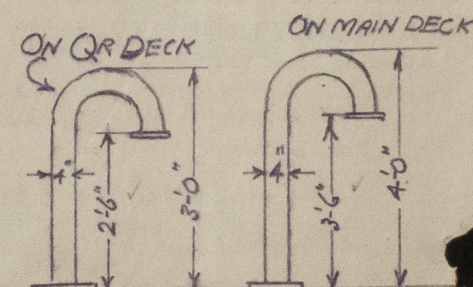
PARTICULARS OF } ONE TO FORE PEAK. } ON FREEBOARD DECK. EFFICIENT. WOOD COVER, TARPULINS, CLEATS & BATTENS
BOOBY HATCHES. } ONE TO HOLD. }
ONE TO AFT PEAK. } ON R. Q. DECK. EFFICIENT. STEEL W.T. COVER.

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

ONE VENTILATOR FORWARD TO HOLD 12" DIA. ON MAIN DECK, COAMING 30" HIGH x 3/8" STEEL PLATE.
ONE VENTILATOR AFT. TO HOLD 12" DIA. ON QR DECK, COAMING 30" HIGH x 3/8" STEEL PLATE.
ALL VENTILATORS ON BRIDGE & SUPERSTRUCTURE EXCESS HEIGHT OF COAMINGS, ALL EXAMINED AND FOUND EFFICIENT.

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

SWAN NECKS, SUBSTANTIAL CONSTRUCTION, FLANGED FASTENINGS TO DECK, EXAMINED, & FOUND IN GOOD CONDITION, WIRE GUAZE, PROTECTED, WOOD PLUGS AND CANVAS COVERS.



Particulars of Gangway Cargo and Coaling Ports:—

NONE.

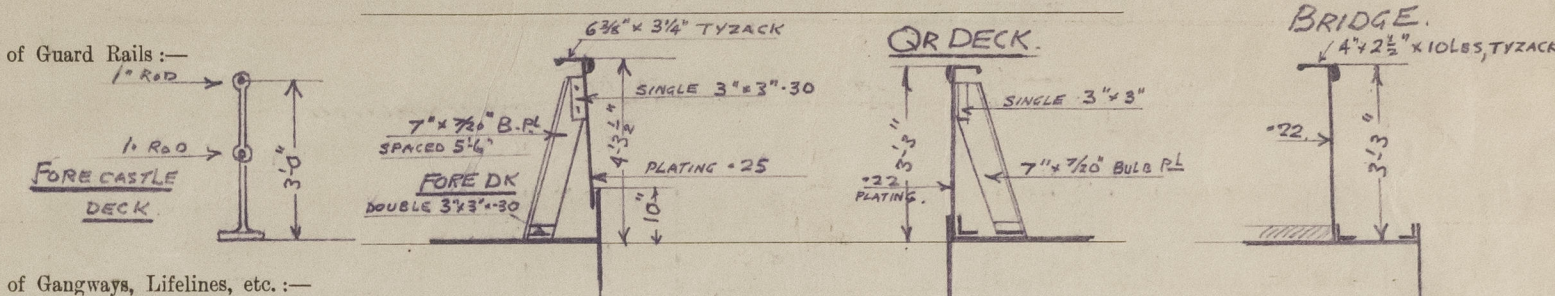
Particulars of Scuppers and Sanitary Discharge Pipes:—

ONE	6"	THROUGH SHEERSTRAKE	PORT & STARBOARD	SIDES	STORM VALVES FITTED.
ONE	4"				
ONE	3"				
ONE	1 1/2"				

Particulars of Side Scuttles:—

IN FORECASTLE 5 EACH SIDE 10" GLASS, DEADLIGHT FITTED.
IN BRIDGE FRONT 4 IN NUMBER. 10" GLASS
IN BRIDGE AFT END 5 " 10" GLASS
IN BRIDGE PORT & STARBOARD, ONE 10" GLASS
ALSO TO ACCOMMODATION ETC IN CASING ON QUARTER DECK.
ALL DEADLIGHTS HINGED AND PERMANENTLY ATTACHED. EFFICIENT

Particulars of Guard Rails:—



Particulars of Gangways, Lifelines, etc.:—

NONE FITTED MATERIAL (WIRE ROPES & SHACKLES) ON BOARD FOR USE IF NECESSARY.

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	104.5	3'3"	MOORING PORT 9" DIA	2	.88 sq'	20.99
Forward Well	34.5	4'3 1/2"	MOORING PORT 9" DIA	ONE	.44 sq'	9.95

State position of each freeing port ... After Well: 8'6", 35'6" and 62'0" FROM AFT END OF BRIDGE HOUSE. MOORING PORTS 2'4" AFT AFT END OF BRIDGE HOUSE.
(F. and A. position and height above deck edge) Forward Well: 3'0" & 13'6" FORWARD OF BRIDGE FRONT, FREEING PORTS 10' ABOVE DECK, MOORING PORTS 14'8" FROM A.P.
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: BARS 3 VERTICAL.

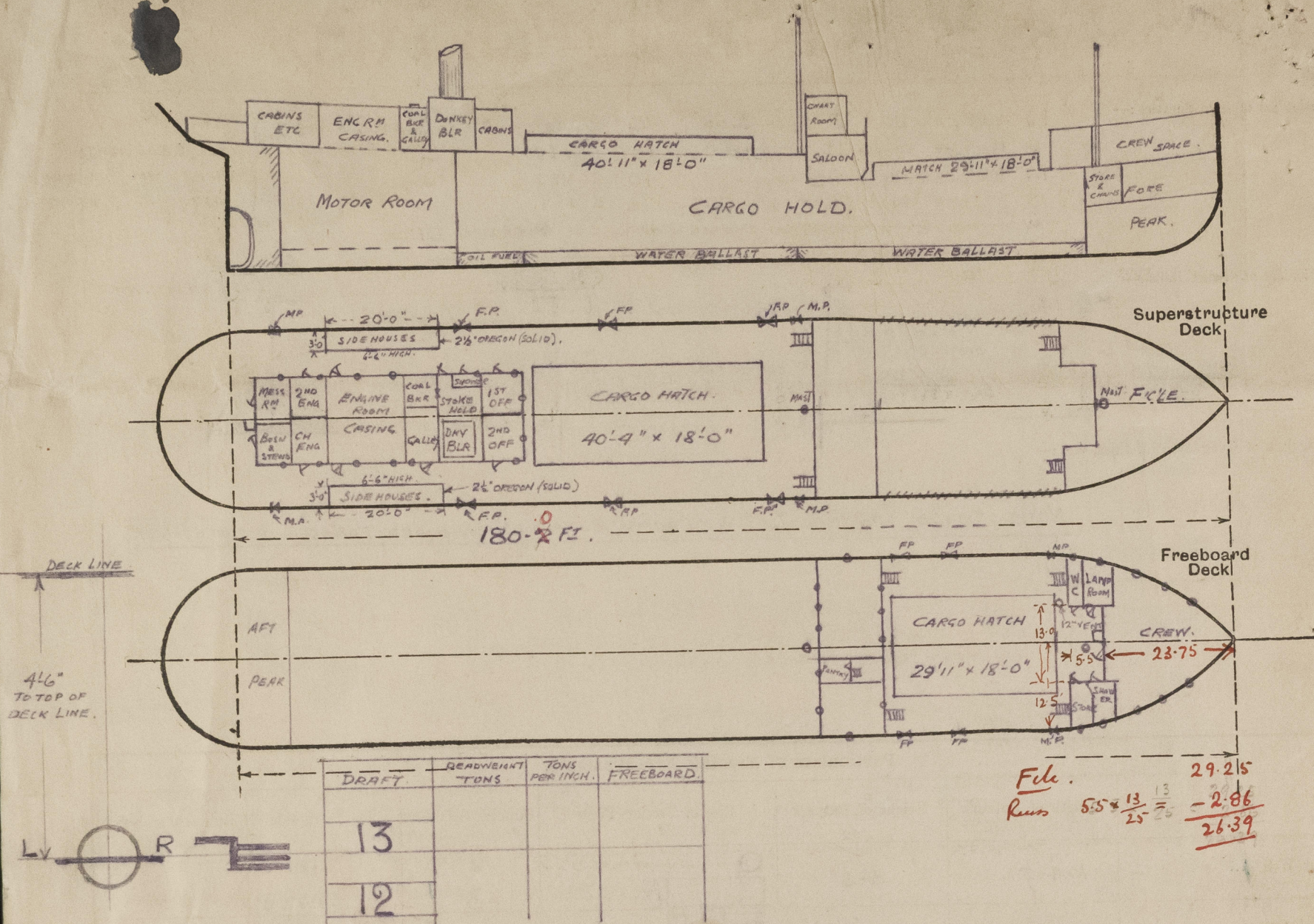
Additional area where sheer is less than standard.

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	30	30	3" x 3" x 3/8"	30"	NONE			
Bridge, After Bulkhead								
Bridge, Forward Bulkhead	3/8"	3/8"	6 1/2" x 3" x 3/8" (BA)	30"	BRACKETS TOP & BOTTOM			
Forecastle Bulkhead	32	26	3" x 3" x 3/8"	30"	NONE		18"	7'0"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	32	26	3" x 3" x 3/8"	30"	NONE		18"	7'0"
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	NO OPENINGS.
Raised Quarter Deck Bulkhead	NO OPENINGS.
Bridge, After Bulkhead	NO OPENINGS.
Bridge, Forward Bulkhead	NO OPENINGS.
Forecastle Bulkhead	ONE HINGED STEEL DOOR TO FILE, ONE DOUBLE HINGED STEEL DOOR TO LAMP ROOM, ONE HINGED STEEL DOOR TO BATH & SHOWER FROM BOTH SIDES.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	ORDINARY DOUBLE HINGED STEEL DOORS TO ENG ROOM, STOREHOUSE (DONKEY BLK) AND STROKE WOOD DOORS TO ACCOMMODATION
Exposed Machinery Casings on Superstructure Decks	ALL CAPABLE OF BEING MANIPULATED BOTH SIDES.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	
Deckhouses on Flush Deck Ships	

Port Waikato.

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:—

Steel Screw Motor Ship with Engines Aft.

Vessel designed for the Hard Wood Timber Trade carrying poles & long timber, General Cargo Carrier.

One Main Hold with Hatchways on Fore Deck & Raised Quarter Deck.

Additions:— Two New Wooden side houses of substantial construction in way of Engine Casings; R.Q.Dk.

PARTICULARS OF SURVEY:— (Safety & Load Lines Conventions) Act. 1932. Vessel examined afloat and in the Calliope Dry Dock, Auckland. NOW SEEN:— Bottom, rudder, stern frame, keel stem, all outside & under-water plating, inside steel work-bulkheads, frames & fastenings, bilges, ceiling & limbers, Decks, hatches hatchways, hatch coamings, beams, carriers, tarpaulins, cleats & battens, ringbolts, All superstructures, Quarter Deck, Bridge & Forecastle with their casings, stiffeners, doors, sills, fidley, funnel, skylights, sidelights & deadlights, bulwarks, guard rails, freeing ports, ventilators with their coamings & covers, scuppers, sanitary discharges, air & sounding pipes with their covers, pipes, valves & fastenings, provision for lifelines, Length, Breadth, Depth, Sheer Heights, Round of Beam all now verified, Existing Freeboard Marking now verified and Certificate dated 1/11/29, endorsed accordingly to remain in force pending issue of a new Certificate.

Vessel now seen in good order & condition.

RECOMMENDED:— That existing Freeboard be retained and Deck Line altered & No Certificate be Issued.

Signed:

Surveyor to Lloyd's Register.

Date of Survey:— Auckland, N.Z. 26th. & 28th. September 1936.

Builder's name and yard number. MESSRS HENRY ROBB LTD LEITH. Nº 113

Names of sister ships. ---

Owners. A.F. WATCHLIN.

Fee £ 4-0-0 PART FEE. Received by me

4-0-0 TO CHARGE WITH ISSUE OF CERTIFICATE.

Part Fee only charged at this Survey.



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