

WRECK Reg. of Attached

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

15 APR 1932

Index. No. 29716
(For London Office only.)

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Forecastle with combined Bridge & Raised Quarter Deck
(Type of Superstructures.)

Port of Survey Hull
Date of Survey 9th April 1932
Name of Surveyor Malcolm
Particulars of Classification 100A1

Ship's Name "Leo" Nationality and Port of Registry British Hull Official Number 145059 Gross Tonnage 1139.59 Date of Build 1908

Moulded Dimensions: Length 223.63 Breadth 35.3 Depth 17.03
Moulded displacement at moulded draught = 85 per cent. of moulded depth 2586 tons
Coefficient of fineness for use with Tables .787

Depth for Freeboard (D) 17.03
Moulded depth ... 17.03
Stringer plate45
Sheathing on exposed deck none
 $T \left(\frac{L-S}{L} \right) =$ none
Depth for Freeboard (D) = 17.10

Depth correction
(a) Where D is greater than Table depth
(D - Table depth) R = $(17.10 - 15.0) \times 1.73 = +3.63$
(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) 35.25
Standard Round of Beam = $\frac{B \times 12}{50} = 8.46$
Ship's Round of Beam = 7.34
Difference .71
Restricted to
Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.71}{4} \left(1 - \frac{.891}{1.09} \right) = +.02$

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	<u>71.9</u>	<u>71.75</u>	<u>4.1</u>		<u>71.75</u>
" overhang					<u>90.53</u>
Bridge enclosed	<u>100.7</u>	<u>100.58</u>	<u>7.0</u>		<u>7.0</u>
" overhang aft					
" overhang forward	<u>26.87</u>	<u>26.87</u>	<u>7.1</u>		<u>26.87</u>
Fore enclosed	<u>28.9</u>	<u>28.8</u>	<u>1.19</u>		<u>7.19</u>
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	<u>201.58</u>	<u>200.40</u>			<u>190.34</u>

Standard Height of Superstructure	<u>6.0</u>
" " R.Q.D.	<u>3.832</u>
Deduction for complete superstructure	<u>28.49</u>
Percentage covered $\frac{S}{L} =$	<u>89.62</u>
" " $\frac{S_1}{L} =$	<u>89.10</u>
" " $\frac{E}{L} =$	<u>84.62</u>
Percentage from Table, Line A.	<u>81.03</u>
(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 = $28.49 \times .8103 =$	<u>-23.09</u>

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>32.49</u>	1		<u>32.49</u>	<u>33.4</u>	<u>33.25</u>	1		<u>33.25</u>
$\frac{1}{8}L$ from A.P.	<u>14.46</u>	4		<u>57.84</u>	<u>13.4</u>	<u>12.84</u>	4		<u>51.36</u>
$\frac{2}{8}L$	<u>3.57</u>	2		<u>7.14</u>	<u>3</u>	<u>3.21</u>	2		<u>6.42</u>
Amidships	<u>-</u>	4		<u>-</u>	<u>0</u>	<u>-</u>	4		<u>-</u>
$\frac{3}{8}L$ from F.P.	<u>7.15</u>	2		<u>14.30</u>	<u>10.3</u>	<u>8.89</u>	2		<u>17.78</u>
$\frac{4}{8}L$	<u>28.91</u>	4		<u>115.64</u>	<u>36.3</u>	<u>35.55</u>	4		<u>142.20</u>
F.P.	<u>64.98</u>	1		<u>64.98</u>	<u>75.3</u>	<u>75.75</u>	1		<u>75.75</u>
Total				<u>292.39</u>					<u>326.76</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - \frac{S}{2L}}{.75 - \frac{S}{2L}} \right) = \frac{34.37}{18} \left(\frac{.75 - .4487}{.75 - .4487} \right) = -.58$

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 = 17.10
Summer freeboard = .81
Moulded draught (d) = 16.29

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 4.07 = 4
Addition for Winter North Atlantic Freeboard (if required) = 2

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta =$
Tons per inch immersion at summer load water line
T =
Deduction = $\frac{\Delta}{40 T}$ inches = 4

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{787.68}{1.36} \frac{1.467}{1.36}$

Depth Correction ... 3.63
Deduction for superstructures ... 23.09
Sheer correction58
Round of Beam correction02
Correction for Thickness of Deck amidships ...
Other corrections, scantlings, etc. ...

27.53
29.70
3.65 23.67 -20.02
Summer Freeboard = 9.68

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

Tropical Fresh Water Line above Centre of Disc ...
Fresh Water Line ...
Tropical Line ...
Winter Line below ...
Winter North Atlantic Line ...

Tropical Fresh Water Freeboard ...
Fresh Water ...
Tropical ...
Winter ...
Winter North Atlantic ...

19 APR 1932

W410-017741/2 RECEIVED

18 MAR 1940

MARKING FORM

RECEIVED

11 NOV 1933

RECEIVED

84 AUG 1932

Lloyd's Register

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
← Upper Deck → ← R.Q. Deck → Bridge/U. Deck R.Q. Deck Bridge Deck upper Deck									
Description of Hatchway	ho1. ^{70.} W.C.	ho2	ho3	ho4	ho2	To file (Peak) Store.	To store aft.	Coal.	in Bulk Spec. Coal
Dimensions of Hatchway	21-10 x 13-3	29-7 x 13-3	6' x 9'-11"	29-7 x 13-3	29-7 x 13-3	2' x 2'	3' x 4'-3"	8'-6" x 3'-6"	26' x 2'-1"
COAMINGS {	Height above Deck ...	39"	12"	32"	32"	32"	30"	32"	9" B.A.
	Thickness { Sides ...	.4	.5	.4	.4	.4	.35	.35	
	Stiffeners ... Ends	none	none	none	7" B.A.	7" B.A.	none	none	none
	Brackets, Stays ...	none	none	none	none	none	none	none	none
HATCH BEAMS {	Number	2	3		3	3			4
	Spacing	6-6, 5, 1-4	8-4 5-7						4' + 6'
	Scantling and Sketch ...	Bolt T 9 x 5 1/2 x .40 Plate 15 1/2 x .50 Angle 3 1/2 x 3 1/2 x .60	as ho1	none	as ho2	as ho2	none	none	11 15 x 3 11 L 3 = 3 x 3
	Bearing Surface ...	2 1/2							
FORE AND AFTERS {	Number	3	2	1	3	3			
	Spacing	3'-4"	4'-9" x 3'-9"	5'-0"	3'-4"				
	Unsupported Lengths ...	6'-12, 7'-15, 6'-11, 5'-12, 2'-2		5'-8"	7'-12, 5'-12				
	Scantling* and Sketch ...	ch. 9 x 8 Side 6 x 6	6 x 6		ch 9 x 8 Piles 6 x 6	as ho2	none	none	none
HATCH COVERS {	Bearing Surface ...	3	3	3	3	3			
	Material	WW 3	WW 23/4	WW 23/4	WW 23	WW 23	Steel .27	WW 23	WW 23
	Thickness								
	How fitted	2"	2 1/4	2	2	2 1/4	2	2	2 1/4
Spacing of Cleats	25"	25"	14 1/2 x 2 1/4	26"	25"	none	none	30"	27"
Number of Tarpaulins	3	3	3	3	3	none	none	3	2

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

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? Yes

Particulars of fiddley, funnel and ventilator coamings :—

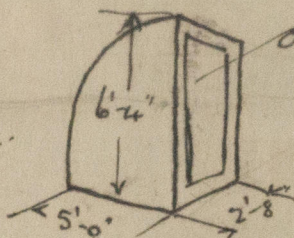
Fiddler, grating covers are in ~~poor condition~~ and not permanently attached; ~~they should be renewed~~.
Ventilator Coamings are ^{good} ~~thin & should be renewed~~.
Tunnel good.
Engine Room Ply light of steel, strongly constructed. ✓

Particulars of Flush Bunker Scuttles:—

none

Particulars of Companionways :—

Companion on
Forecastle Deck.



opening 5'-0" x 1'-7"
 size ~~8"~~ ^{24"} ~~steel~~
 door, hinged ~~wood~~ ^{1 1/2" thick}
 Spring lock, closing
 both sides.

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

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

<u>Deck</u>	6, 6" Vents, cowings 36" high x 28 to 32, to accommodation.	✓
	1, 16" " " 18" x " x 3 hold.	
	2, 5" G.V. " 30" x 3 to f'ble sideloues	✓
<u>Bridge Deck</u>	2, 17" dia. Vents " 10ft. high, efficiently stowed. hold -	✓
	1, 13" " " 15ft. " " x 35 " to tunnel recess. "	✓
<u>R.O. Deck</u>	1, 9" Vent. " 2-9' " " hold.	✓
	1, 14" " " 2-9' " " hold.	✓
	1, 12" " " 9" mushroom tops, to store aft.	✓

all vents
Constructed in accordance
with Rules & Coaming's
Closed with wood plugs
& canvas covers. ✓

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

I.C.C. Dk: 1, 3" dia S.N. 7" high to fire peak tank
 1, 3" " S.N. 8" " to D.B. tanks.
B.D. Dk: 6, 2 1/2" dia 24" high " " " ✓
 4, 1 1/2" " 24" " " " ✓
R.D. Dk: 1, 2 1/2" " 8" " " A.P. Tank
 1, 3" " S.N. 22" " " D.B. tanks
 2, 3" " " 30" " " "

no snifting holes fitted.
Efficient ~~no~~ means of closing
provided.

Particulars of Gangway Cargo and Coaling Ports:—

None

Sanitary & Drain pipes from Saloon etc. on bridge deck lead to shell below freeboard deck fitted with 1 Storm valve, N.R. each.
No drainage provided for bridge truss deck cargo space. ✓

Side Scuttles: all side scuttles in side & bridge 'tween decks fitted with brined
deadlights. ✓

All Scuttles of Substantial Construction ✓

Guard rails on Jctn dedn 3'-0" high with 2 rods, Stanchions spaced 4'-9" apart.
Bde. " (fence) " " "

Bridge Sides, Steel bulwarks 2'-10" high efficiently constructed & supported.
R. Q. Deck " " 3'-6" " " "
Toward well " " 4'-8" " " "

✓ ✓ ✓ ✓ 100A1

Diagram illustrating a two-post frame structure. The posts are labeled "Wood". The height of the posts is indicated as "3'-3\"". The distance between the posts is indicated as "2'-6\"". The ropes are labeled "Ropes". The posts are supported by a base labeled "Standards spaced 4'-0\"".

Gangway from bridge deck to forecastle deck level. Position of freeing ports on R. & L. side.
with one support at centre; 2" round, crutch.

State position of each freeing port ... { After Well:— 8" above deck ✓
(F. and A. position and height above deck edge) { Forward Well:— 15" " ✓

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— ft. well: 2 horiz. bars to each. ✓
Rd. dk. 3 vert. bars " " ✓

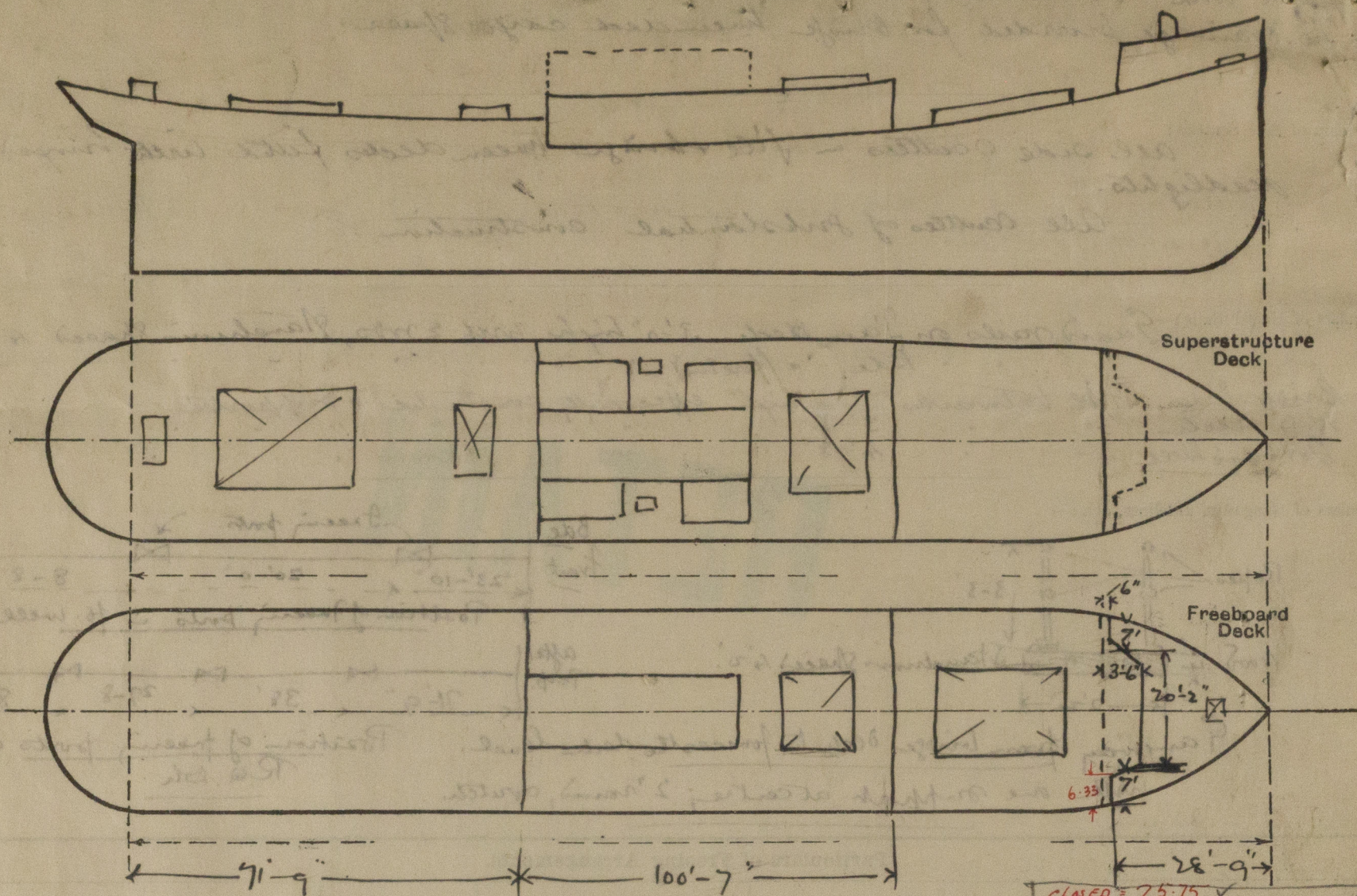
Additional area where sheer is less than standard.

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

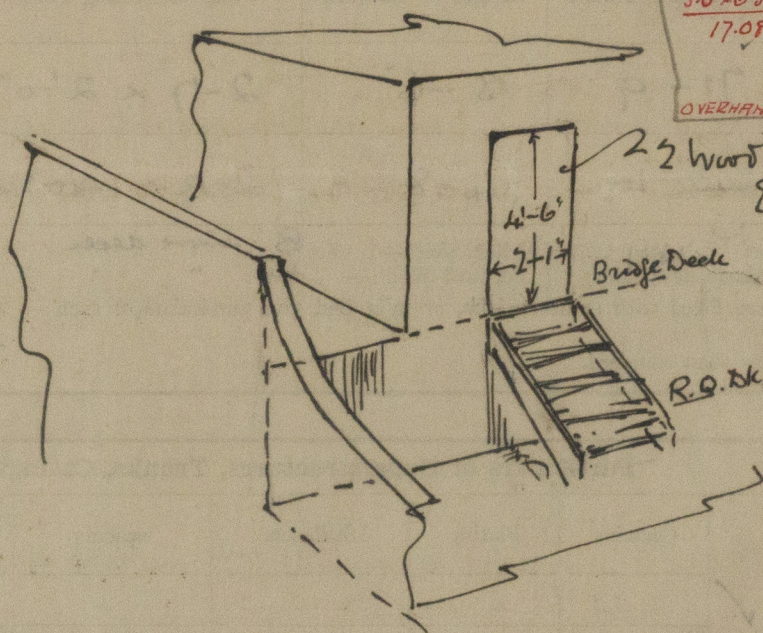
Poop Bulkhead	...	...	✓
Raised Quarter Deck Bulkhead			✓	
Bridge, After Bulkhead	...		✓	
Bridge, Forward Bulkhead	...			Stormboards 3" thick, to full height in metal channels.
Forecastle Bulkhead	...	...		hinged wood doors, spring locks. Yes.
Exposed Machinery Casings on Free-board or Raised Quarter Decks	...	✓		
Exposed Machinery Casings on Superstructure Decks	...	(Bda.)	✓	2 wood, hinged doors to E. Room, spring locks. Yes.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	...	...	✓	2 steel, - - - - - fire, <u>spring locks</u>
Deckhouses on Flush Deck Ships	...	✓		to be made workable

W 410-0177(212)

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:—



Closed 25.75
 $3.5 \times 6.33 = 1.12$
 17.08 26.87
 29.25
 OVERHANG 2.38

22 working doors at Bridge
 End firing access to
 Companion ladder (p. 45)
 to bridge from deck
 accommodation

Builder's name and yard number Stettiner Oderwerke

Names of sister ships

Owners Ellerman's Wilson Line, Ltd.

Fee £ 10

Received by me

Less 15% £ 8.10:0

Not yet applied for



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